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Internet-Based Courses: Observations of Faculty Developers/Teachers and Students with Disabilities at 4-Year Public Institutions in Tennessee.

Janet McDaniel Keener
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Internet-Based Courses: Observations of Faculty Developers/Teachers and Students with Disabilities at 4-Year Public Institutions in Tennessee

A dissertation
presented to
the faculty of the Department of Educational Leadership and Policy Analysis
East Tennessee State University

In partial fulfillment
of the requirements for the degree
Doctor of Education

by
Janet McDaniel Keener
December 2004

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Keywords: Accessibility, Internet Courses, Disabled, Disabilities, Higher Education, Online, Postsecondary Education
ABSTRACT

Internet-Based Courses: Observations of Faculty Developers/Teachers and Students with Disabilities at 4-Year Public Institutions in Tennessee

by

Janet McDaniel Keener

The purpose of this study was to identify important factors that should be considered by faculty members at selected public institutions of higher education as they plan, design, develop, implement, and evaluate Internet-based courses, in order to make the courses responsive to the needs of students with disabilities. In addition, the study explored perceptions of students with disabilities in terms of Internet-based courses offered at their institutions. A total of seventeen faculty developers/teachers and 7 students with disabilities were interviewed. Qualitative methodology was used to analyze the data.

The significance of this study lies within the legal and ethical obligations of public educational institutions. The growing population of students with disabilities identifies an area in which institutions must become familiar and be able to provide reasonable accommodations.

Findings from this research indicate that: (1) students with disabilities are not enrolling in Internet courses in the same proportion as students without disabilities; (2) with few exceptions, students with disabilities need the same skills, abilities, and knowledge as other students to be successful in an online course; (3) certain appealing characteristics of online classes are consistent in the perceptions of faculty and the students with disabilities; and (4) audio components are the most commonly desired or requested item for enhancing the accommodations for students with disabilities.

Several conclusions were determined from the interviews: (1) faculty awareness of students with disabilities needs to be addressed and increased; (2) faculty taking online courses are better able to understand the students’ perspectives of online courses;
(3) students’ personalities are the determining factors in their success in online courses; (4) concerns with Regents Online Degree Program problems should be investigated; and (5) certification of online courses should be advocated and required by administration.

The results of this study will allow universities to better understand the needs of their students with disabilities, and the support and resources faculty will need to better accommodate those students in Internet courses.
DEDICATION

This study is dedicated to the person who encouraged me the most to continue my pursuit as a lifelong learner, my late husband, best friend, and soul mate David—my “little goose”, “my little lobster”, my hero. Without his unwavering support, understanding, sacrifices, and willingness to eat cold dinners and fast food, this never would have been possible. He once told me that if he ever wrote a book about the day he became disabled, it would be titled “The Day I Became Invisible.” To me, he will always be in the forefront of my thoughts and the one person who has taught me that disabilities are not roadblocks, merely detours. He taught me to never, ever give up. His constant sense of humor under unbearable pain and suffering gave me the encouragement to continue when I thought I could do no more. Then, there came a time when he could no longer take the pain—David committed suicide on May 15, 2003.

I also dedicate this work to my father, the late Kenneth S. McDaniel, and my mother, Billie S. McDaniel. They often did without so I could continue my educational endeavors. Their support, financial and emotional, was invaluable and will never be forgotten. Daddy, I wish you were here to see me receive this degree.

I must include the special people in my life who have and will continue to mean so much to me: my best friend and a true angel on earth, Kathryn Joan Wells Hensley, our friends and neighbors the Birchfields, and my late friend, Stacey Rose Hodge McFalls, who gave me more laughs than any one person ever deserved.

To my friend Rusty—you gave me hope when I thought there was none; you made me laugh when I thought I never could again.

I am blessed to have these folks in my life.
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I would like to thank the current and past members of my dissertation committee for their generous contribution of time and never-ending faith that I could accomplish this objective. Dr. Russell West, my chair, was unfailingly patient with me, and for that I am very grateful. Drs. Ronald Lindahl, Russell Mays, Rhona Cummings, Jasmine Renner, and Nancy Dishner provided insight, advice, and time whenever I asked, no excuses. They provided me with the assistance and encouragement needed to take the qualifying exams and continued to do so until the end. They all truly exemplify the good things about higher education. They treated me as an adult, a peer, and a friend. Honest compassion, caring, and concern are trademarks of this fine group of people. I am fortunate to have had them as members of my committee and to know them as people.

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To Nancy Dillon, you are an inspiration to us all! Thank you for being my friend. Special thanks go to Tracey Fields, an exceptional young women who I was fortunate enough to have transcribe the interviews for me.

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To Goofy, Katie, and Elvis for your unconditional love.
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CHAPTER 1
INTRODUCTION

The population of postsecondary education students reporting disabilities continues to grow. A cursory review of the statistics, however, may be misleading. Many published statistical reports focus on freshmen, particularly first-time, full-time freshmen. These reports may not be accurate depictions of the true percentages of students with disabilities in higher education because returning adult students and those in other class levels are not included.

In addition, the number of postsecondary students with disabilities enrolled in postsecondary institutions may actually be higher than publicized because reporting by the student is voluntary (West et al., 1993). The Cooperative Institutional Research Program (CIRP) has administered a national survey to a large sample of freshmen each year beginning in 1966 (Henderson, 1999, p. 1). The report is cosponsored by the American Council on Education (ACE) and the Graduate School of Education and Information Studies at the University of California at Los Angeles (UCLA). The first time the survey included a question about disabilities was in 1978. During that year, almost 3% of the freshmen reported having a disability (Henderson, 1992, p. 3). In 1993, Jaschik (1993, p. A26) reported that “nearly one in eleven freshmen” (9%) reported having a disability. The HEATH Resource Center, the national clearinghouse on postsecondary education for individuals with disabilities acquired by The George Washington University on October 1, 2001, reported that in 1996, 9% of entering college freshmen had disabilities (Horn & Berktold, 1999, p. 1). Similarly, Henderson reported that the 1998 CIRP results indicated that slightly more than 1 in 11 students (9.4%) self-reported a disability (Henderson, 1992, p. 3).

In the 2001 edition of College Freshmen with Disabilities, Henderson (2001) clarified that the data collected for the report include information from fall 2000 first-time, full-time freshmen at 4-year institutions only. Her previous report (1999) included data from 2-year and 4-year institutions; however, due to the increasing difficulty in tabulating responses from 2-year
institutions, data were not collected from 2-year institutions for the 2001 edition. The 2001 report included the notation that the report was a “prototype of a redesign intended to focus on students attending only 4-year institutions” (Henderson, 2001, p. 2). Henderson also cautioned that because of the redesign, data from the 2001 report “cannot be compared directly to data found in previous editions of this report” (p. 2). Henderson calculated that overall, 6% of first-time, full-time freshmen entering 4-year institutions during the fall of 2000 self-reported a disability.

It is appropriate to consider the data from Henderson’s 2001 report in this study for many reasons: (a) this study will consider only 4-year institutions; (b) Henderson’s 2001 report included the most recent data available from a dependable source; and (c) the decrease in the overall percentage of students (first-time, full-time freshmen) reporting disabilities could be noteworthy. Is it possible that many first-time, full-time freshmen students with disabilities are choosing to begin their postsecondary education by attending the 2-year institutions rather than 4-year institutions? Are there other explanations?

A statistical analysis report by Lewis and Farris (1999) included both 2-year and 4-year institutions. They cautioned that “there has been no nationally representative data available from postsecondary institutions about the enrollment of students with disabilities…” and “it has been difficult to assess the extent to which postsecondary institutions can provide information about these students” (p. iii).

Much of the literature referenced in this study focused strictly on first time, full-time freshmen. This eliminates a large portion of the student body when considering those self-reporting disabilities. It would not take into consideration returning adult students, or any level of classification other than freshmen.

Disclosure of and self-advocacy for a disability are essential for a student to obtain the highest level of services available at postsecondary institutions (Lynch & Gussell, 1996). Christiaansen et al. (1994) declared that the attitudes of the faculty are responsible for shaping the teaching and learning environment, and therefore maintaining the highest academic standards
possible. While disclosure is the responsibility of the student, research reported by Leyser and Abrams (1983) has shown that perceptions about disabilities can lead to erroneous interpretations of other characteristics about a student, such as motivation, potential, or ability. Faculty attitudes regarding disabled students can be altered with specific training, administrative support, and contact with disabled persons (Johnson & Cartwright, 1979; Leyser & Abrams, 1983).

Total college enrollment has grown in the last two decades “despite the decreases in the size of the traditional college-age population” (Hoffman, 2002, p. 18). If the traditional college-age population is shrinking, who, then, represents the increase in total enrollment? Hoffman’s report indicated that the difference was partially explained by an increase in college enrollment of women over 24 years of age during the 1980s. From the 1990s until the projected 2001 figures, enrollment of persons over 25 increased by 4% (Hoffman). This alters the fundamental makeup of the student body toward which postsecondary institutions need to focus programmatic and marketing efforts.

According to West, et al. (1993) and Thomas (2000), individuals with disabilities have been subject to discrimination in public institutions of higher education and legislation is currently being planned that will address the discriminatory practices to which disabled persons have been subjected in years past.

Statement of the Problem

Consideration of the disabled is an obligation of faculty members when designing and developing Internet-based courses. According to the director of Equal Access to Software and Information (EASI), it is not only a legal obligation but a moral one (Foster, 2001, p. A32). In seeking to answer the questions proposed in this study, should a lack of consideration for students with disabilities be evident, could it be in part due to a lack of information on the faculty members’ behalf? Perhaps they have not have been made aware of the student’s disabilities or the legal responsibilities of the situation upon undertaking the task of Internet course
development. In contrast, should awareness and knowledge be present, might there be other mitigating circumstances that prohibit the faculty from designing and developing appropriate course material? Could these circumstances include a lack of technical expertise, the inability or unwillingness to obtain assistance or training in course development, time constraints, or lack of fiscal resources, as suggested by Carnevale (1999)?

The purpose of this study is to identify important factors that should be considered by faculty members at selected public institutions of higher education as they plan, design, develop, implement, and evaluate Internet-based courses in order to make the courses responsive to the needs of students with disabilities. In addition, the study will explore perceptions of students with disabilities in terms of Internet-based courses offered at their institutions.

**Research Questions**

As an emergent, qualitative study, this researcher proposes to discover the important factors as defined by the perceptions of faculty as they plan, design, develop, implement, and evaluate Internet-based courses that are appropriate and accessible for students with disabilities as well as students with no disabilities. In addition, it is imperative to define the perceptions of students with disabilities toward Internet-based courses. The issues and concerns of both parties will be studied.

The research questions to be examined are proposed to identify what would constitute future best practices, particularly for students with disabilities. The research questions are:

1. To what extent are students with disabilities participating in Internet-based courses? Why have they chosen to enroll in such courses? If they have not done so, what are the reasons why they have not?
2. What are the minimal skills, abilities, and knowledge necessary to successfully complete an online course?
(3) What would make these Internet-based courses more appealing or attractive to the population of students with disabilities? What is it about them in their current state that makes them non-appealing or less attractive than traditional classroom courses?

(4) What can faculty members do to make Internet-based courses more accessible to students with disabilities?

Emergent interview sessions with the study participants has allowed me to identify their expressed feelings, attitudes, and beliefs. The recruitment letter sent to students with disabilities will not state any requirement that they must have taken an Internet-based course. It is desirable to have contact with students from both categories, those who have enrolled in Internet-based courses and those who have not. This was necessary in order to attain the answers to research question 1.

Significance of the Study

The significance of this study lies within the legal and ethical obligations of public educational institutions. The growing population of students with disabilities identifies an area with which institutions must become familiar and be able to provide reasonable accommodations. EASI is a support group associated with the American Association for Higher Education (AAHE). The director of EASI, Coombs stated, “universities should improve the accessibility of Web pages because it is the right thing to do, not because the law requires it” (as cited in Young, 1998, p. A32). Coombs also suggested other reasons for adapting campuses for students with disabilities: (a) “it makes economic sense”, (b) “it’s the law”, and, (c) “do it for yourself” (Coombs, 2000, p. 4). Castorina (1994) also asserted that establishing adaptive computing technology makes economic sense. She used the analogy that rather than retrofitting a building with an elevator, it is more economical to include it with the original plans. Castorina elaborated, “Higher education’s experience with disability legislation has demonstrated that costly litigation can be avoided by a proactive approach to reasonable accommodation”
(Castorina, p. 46). This statement makes reference not only to physical accessibility but technological accessibility as well.

A literature search revealed few articles about the perceptions of faculty regarding students with disabilities. Beilke and Yssel (1999) reported on the perceptions that certain students had regarding their faculty. Ten students classified as disabled at a Midwestern university were interviewed. The researchers concluded that, “Until faculty can be assured that opportunity does not come at the expense of academic integrity, it is likely that students with disabilities will continue to encounter chilly classrooms in higher education” (Beilke & Yssel, p. 370). Their report indicated that students with learning disabilities were more likely to be viewed with skepticism by the faculty (Beilke & Yssel).

There are extensive resources available pertaining to the legalities of accommodating students with disabilities. Many of these sources focus primarily on physical accessibility in traditional learning environments. The particular topic of the relationship between Internet-based courses and students with disabilities is evolving with the rapid, transitional state of technology in society. Because it was not possible to locate any literature that examined the exact research questions proposed in this study, this research will be significant in its uniqueness and contribution to the field of education. It may result in findings that could enhance the learning experience of the students, should there be indications that the courses are not being taken because of a lack of accessibility. In addition, the findings may indicate a need to further contribute funding and other resources for the development of faculty member’s skills and abilities as they produce Internet-based courses. Conversely, the research may show that this particular sample of students has no interest or intentions of participating in Internet-based courses. The legalities of not providing accessibility will have to be taken into consideration, but it may indicate a need to reduce expenditures in this area.
Definitions of Terms

In this section, the major definitions associated with this study are presented. They are relevant for the reader to comprehend the full range of disabilities taken into consideration during this research. In addition, they explain the terms of the courses as they relate to this study. Mauch and Birch (1983) stated that definitions in a qualitative study are applicable for two primary reasons. They stated that one should (a) “… define words or expressions that are being used in a precise sense in the proposal,” and (b) “… the proposed research may depend upon an operational definition of a term” (Mauch & Birch, p. 65). The definitions of the following disabilities, as implemented by the disability offices of the participating institutions, are based on federal guidelines. It is important to understand these definitions because when a student requests assistance from the disability services office, he or she would be required to provide proof of that particular disability. This proof would be a statement from a licensed physician, a licensed or certified psychologist, or a licensed optometrist. For example, a student claiming the need for assistance due to a visual impairment would be required to supply the requisite paperwork from a licensed optometrist or ophthalmologist.

Internet-based Course

For the purposes of this study, the terms “Internet-based course”, “Internet-based class”, “Internet course”, and “Internet class” refer to the classes offered at the institutions involved that are presented totally via Internet access. A student can perform all necessary coursework via an Internet connection and would not be required to have a physical presence on the campus.

Online Course

When the term “online course” or “online class” is used, it is considered to be analogous and interchangeable with the terms “Internet-based course” and “Internet course”.
Web-enhanced Course

The commonly accepted definition of “web-enhanced course”, and the one that shall be used for this study is a course where the material is presented almost exclusively over the Internet. Some faculty may choose to conduct an initial orientation meeting, but the course does not physically meet on campus regularly and course material and assignments are exchanged through the Internet via a course-management software application.

Asynchronous Course

The majority of online coursework is offered in an asynchronous mode. This entails one-way communication from both parties. Some may prefer to think of it as one-at-a-time communications. It is similar to the way that a walkie-talkie works. One person is able to communicate at a time, both cannot be communicating at the same time. Email is an example of an asynchronous method of communication.

Synchronous Course

A synchronous course would be comprised of the technology that allows “real-time” communications. Video-conferencing or web-casting are both examples of synchronous communications. In addition, the use of a telephone is considered synchronous because both parties may be communicating at the same time. Asynchronous courses are not commonly offered as Internet-based courses from most institutions.

Visually Impaired

The definitions for visual impairment vary from organization to organization. For the purposes of this study, the definition as provided by the United States Federal Government via the Social Security Administration (SSA) will be used. The SSA has classified visual impairments into two primary groups: loss of central vision and loss of peripheral vision. Central vision loss results in the inability to read, to do fine work, or to distinguish detail. Peripheral
vision loss restricts an individual’s ability to move about freely. In both cases, vision testing is used to determine the extent of the impairment. Either one can be used as a determinant of visual impairment and disability (Social Security Administration Publication No. 64-039, 2001).

**Blind.** The Social Security Administration provides the following definition of “blind”:

We consider you to be legally blind under Social Security rules if your vision cannot be corrected to better than 20/200 in your better eye, or if your visual field is 20 degrees or less, even with a corrective lens. Many people who meet the legal definition of blindness still have some sight and may be able to read large print and get around without a cane or a guide dog. (SSA Pub. No, 05-10052, p. 5)

This definition can be further explained. Vision of 20/200 means that what a “normal” person can see at 200 feet, the blind person is only able to see from 20 feet. The reference to visual field means that peripheral vision is 20° or less. Peripheral vision is a person’s field of vision from side to side. Normal peripheral vision is 150 degrees with one eye and 180 degrees with both eyes (How you see and what can impair your vision, 2001).

**Partially Sighted.** One particular definition of partially sighted was discovered on the web site for the Center for the Partially Sighted. Based on this definition, partially sighted is the “best-corrected visual acuity of 20/70 or less in the good eye. Even when wearing regular corrective lenses, partially sighted people cannot read standard newsprint, or see expressions on a person's face” (Low vision glossary, 1999-2001).

Partially sighted individuals may not be considered legally blind by federal government standards. However, they may still require assistive devices to accomplish normal tasks associated with pursuing an education.

**Hearing Impaired**

Hearing impairment is quantified by an audiometric exam, which must be conducted by a qualified otolaryngologist (“one who deals with disorders of the ear, nose, or throat”) (Guralnik
et al., 1970, p. 1008) or audiologist. Hearing impairments are those defined as hearing loss that is not restorable by a hearing aid. They are “manifested by… average hearing threshold sensitivity for air conduction of 90 decibels or greater, and for bone conduction to corresponding maximal levels, in the better ear, determined by the simple average of hearing threshold levels at 500, 1000, and 2000 Hz.” (Social Security Administration Publication. No. 64-039, 2000, p. 7). Hearing loss also may be quantified by speech discrimination scores of 40% or less in the better ear (Social Security Administration Publication. No. 64-039, 2000, p. 7).

**Physically Impaired**

The majority of students reporting disabilities of this type have an orthopedic condition. These can be, but are not limited to, a form of quadriplegia (paralysis of all four body limbs), hemiplegia (paralysis on one side of the body, such as that that can occur from certain strokes), paraplegia (paralysis of one half of the body, most commonly occurring from the waist down), club foot, amputation, paralysis, or cerebral palsy (Horn & Berktold, 1999).

The SSA defines a disability in generic terms in the “Blue Book”, as stated:

A medically determinable physical or mental impairment is an impairment that results from anatomical, physiological, or psychological abnormalities which can be shown by medically acceptable clinical and laboratory diagnostic techniques. A physical or mental impairment must be established by medical evidence consisting of signs, symptoms, and laboratory findings – not only by the individual’s statement of symptoms. (Social Security Administration Publication. No. 64-039, 2001, p. 4)

**Health-Related Disabilities**

Health-related disabilities are those that are not classified in any of the other categories yet still qualify as being conditions that can limit one or more life activities. These conditions may include, but are not limited to, multiple sclerosis, diabetes, cancer, lupus, severe allergies, epilepsy, cystic fibrosis, alcoholism, drug addiction, and multiple-chemical sensitivity (MCS) (Brinkerhoff, Shaw, & McGuire, 1993; Henderson, 1999).
Speech Impaired

Speech impairments are not listed specifically in the Americans with Disabilities Act (ADA). However, the basic definition of a disability, according to the ADA, would include such impairments. A publication by The National Stuttering Association (NSA) (2001) stated that Congress intentionally omitted listing specific disabilities by name in the ADA in order to avoid limiting the scope to which each would apply. Therefore, though not mentioned by name, speech impairments are covered under the ADA. The NSA further elaborated that some speech conditions are specifically mentioned as exclusions, although stuttering is not one of them. The definition of a speech disorder as defined by Webster’s Dictionary is “any conspicuous speech imperfection, or variation from the accepted speech standards, caused either by a physical defect in the speech organs or by a mental disorder, as aphasia, stuttering, etc.,” (Guralnik et al., 1970, p. 1368). Aphasia is defined as “a total or partial loss of the power to use or understand words, usually caused by brain disease or injury…” (Guralnik et al., p. 63).

Learning Disabled

The learning disability is not as easily quantifiable as that of hearing loss nor as obvious as that of certain physical impairments. Many factors are taken into consideration when trying to determine whether or not an individual has a learning disability. For the purposes of this study, a definition of learning disability will be considered from the perspective of the Federal Register, where it is defined as:

a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do math calculations. Term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing or motor handicaps, of mental
retardation, of emotional disturbance, or of environmental, cultural or economic disadvantage. (Federal Register, August, 1977)

In addition to the Federal Register, other definitions of learning disability are provided by the National Advisory Committee on Handicapped Children, The National Joint Committee for Learning Disabilities, and other sources. Johnson (1987) noted that most definitions are comprised of three major components: (a) an intention to “differentiate between specific learning disabilities from other types of learning problems” (p. 2), (b) the statement that “individuals with learning disabilities experience a discrepancy between their mental ability and performance in one or more other areas” (p.3), and (c) an indication that “the disabilities are a result of some factor intrinsic to the individual” (Johnson, p. 3). Johnson asserted that “there are differences in opinion regarding the definition and theories of learning disabilities” (Johnson, p. 4).

Cruickshank (1981) stated that the term learning disabilities “was never used prior to 1963, at least with the connotation which it presently has” (p. 80). However, he asserted that it is a term that can be defined. Cruickshank proceeded to explain that many different variations existed in the definition of learning disability, including a definition for diagnostic purposes, a definition used in the educational arena, and a definition as used by the legislative branch of the government. For the purposes of this research, it is the legislative definition, as stated above, that will dictate the interpretation.

Regents Online Degree Program

It is appropriate at this time to describe in more detail the Regents Online Degree Program. The RODP was approved by the Tennessee Board of Regents on September 27, 2000, and by The Tennessee Higher Education Commission (THEC) on April 19, 2001. Course offerings began in fall 2001. All courses are conducted entirely online and are transferable to
other participating institutions. Courses were offered beginning with the fall semester of 2001. According to the RODP home page, http://www.tn.regentsdegrees.org, the goals are:

1) To increase access to higher education for adult Tennesseans, especially those with some college experience. Census data document that Tennesseans lag behind both the national and regional averages of educational attainment. Further, attainment is uneven across the state, with rural areas lagging far behind urban areas. Economic development of the state depends on increasing the skill levels of the population.

2) To maximize the effective use of technology for delivery of college-level instruction. Distance delivery through the use of technology will increase access to higher education, especially in remote areas of the state and for adult learners for whom time flexibility is a critical resource.

3) To provide student access to web-based courses and degree programs. Web-based courses will reach populations not currently enrolled in higher education, and will also permit students who are currently enrolled in on-campus courses to take additional courses, thus completing their programs sooner.

4) To encourage and support collaboration among TBR institutions. Course development and delivery will be cost-effective because courses will be developed by one institution and used by all (Tennessee Board of Regents Online Degree Program - About the RODP, November 11, 2001).

The RODP web site provides a brief self-assessment to assist a prospective student in determining if online courses are “right” for him or her. Preliminary browsing through the home page, the FAQ (Frequently Asked Questions) page, and others provided no information specific to students with disabilities.

A search of the RODP home page for the keyword “disabilities” returned many links on that site. The most informative was found at http://www.tn.regentsdegrees.org/students/disabilities.htm, which simply stated: “Disabled Student Services are provided by your degree granting institution. Please contact them for more information” (Tennessee Board of Regents Online Degree Program - Students with Disabilities, November 12, 2001).

In essence, if a needed service is not offered at the chosen home institution, the student will not be afforded the opportunity to take advantage of it. Considering that the purpose of the RODP is to provide services offering a totally-online college degree or certification, this could
severely limit a disabled student’s ability to pursue a degree to completion, dependent upon her or his classification and severity of disability.

The program allows for compensation for each new course developed, and for each course taught. The RODP will provide $6,000 to the home institution for each new course developed by a faculty member. The institution is then free to decide how it will compensate the developer, if at all. For each course taught, any compensation to the teacher must come from their home institution because there are no RODP funds provided in this instance.

Overview of the Study

Chapter 1 contains an introduction, a statement of the problem, research questions, the significance of the study, and applicable definitions. Chapter 2 is comprised of a review of the relevant literature and research. The methodologies and procedures employed during the research are discussed in Chapter 3. Chapter 3 also includes a description of the restrictions to the study. Chapter 4 includes the findings of the study. In addition, direct quotations from study participants are included. Findings, conclusions, and recommendations for further research are presented in Chapter 5.
Chapter 2

REVIEW OF RELEVANT LITERATURE

Introduction

In conducting the literature review, several databases and other sources were used. Primarily, I used the databases available through the East Tennessee State University (ETSU) Sherrod Library electronic system. The Voyager system catalogs Library of Congress selections and other available references. One database used extensively through ETSU included INFOTrac (Expanded Academic ASAP). This database is comprised of material such as scholarly journals, periodicals, newspapers, and news magazines. The Inter-Library Loan (ILL) service available at ETSU was used to acquire materials from other university libraries. Also employed was Educational Resources Information Center (ERIC). ERIC supplies abstracts of documents and journal articles on education research and practice. ERIC descriptor terms used to search for relevant literature included but were not limited to postsecondary education, higher education, visual impairments, partial vision, blindness, speech impairments, aphasia, stuttering, hearing impairments, partial hearing, deafness, learning disabilities, and orthopedic impairments. The National Center for Educational Statistics (NCES) was consulted frequently for statistical reports and compilations that lent relevancy and credibility to this study.

The secondary source of information compilation began by doing searches on the World Wide Web (a.k.a. the Internet). Search engines employed included those at www.yahoo.com and www.google.com (newsgroups). Information returned from searches on these sites often led to the acquisition of articles or information that became primary sources.

The role and importance of technology in postsecondary education have increased significantly in the past few decades. The adaptability of those resources for the disabled student has not. The literature review for this research study indicated that faculty and administration need to take a more progressive stance toward supplying disabled students with the same opportunities provided to traditional students. As stated by Foster, “For disabled college
students, professors’ increased use of the Web for instruction can create obstacles rather than clear them away” (Foster, 2001, p. A30). Thomas (2000) said, “Over the years, there has been considerable resistance by professors to alter the way they instruct, particularly if such alteration were to accommodate a student with a mental, as compared to a physical, disability” (p. 248) and that they were ill-prepared to adapt their instruction if it meant addressing the needs of individual students, nor were they receptive to identifying reasonable accommodations.

Information technology is a relatively recent phenomenon to educational researchers. Personal computers have only become commonplace within the last two decades. Internet access for traditional students has been available for less than 10 years, and yet, Internet Explorer, Netscape, and the Web have now become common household terms. The rapid improvement and affordability of technological hardware and software have increased exponentially. Unfortunately, the fast pace of technology has failed to create the same information access for the disabled as it has for the non-disabled (Rowland, 2000).

The literature review revealed many areas in which those technological advances have surpassed access for the disabled. There are gray areas in the legal obligations of state institutions when considering the disabled, but the federal government is making progress within that arena. The literature was revealing in that there was very little precise documentation available pertaining to the topic of this particular study. What follows is a summation of the relevant information.

In the literature review, I was unable to locate any equivalent research relevant to this precise area of study. One pertinent piece of research discovered was a survey conducted by Fichten, Bourden, Creti, Amsel and Martos in 1985. This particular research study dealt with students having physical disabilities and the professors who had taught them in a traditional classroom environment. The purpose was to examine interaction situations and to identify appropriate and inappropriate interpersonal behaviors by each of the groups in each of the various situations. It is important to note that in many of the situations defined, the professors
rated the appropriateness of their behaviors higher than did the disabled students. For example, the statement “Professor asks student about possible medical and safety problems (e.g., seizures, fire drill)” (Fichten et al, p. 8), the professors gave the appropriateness of the behavior a rating on a scale of 1 to 10 as 8.36, whereas the students only rated it at 6.49. Similarly, for the statement “If professor doesn’t offer help, student asks for needed help” (p. 9), the professors gave an appropriateness rating of 9.23 while the students rated it at 8.31. The appropriateness of certain behaviors and situations examined in the report could be applicable for an Internet-based course. The study did not analyze the data though, it merely reported it (Fichten et al).

In another research report based on a survey conducted by West et al. (1993), McAfee (1989) noted a literature review tended to describe not proactive measures but rather reactive measures in regard to how postsecondary institutions and students with disabilities have “… coped with each other, rather than exploring means of improving services to promote success” (West et al., p. 457). This research included statements made by some of the 761 respondents in regard to barriers that were not disability specific. According to West et al.:

Those mentioned most frequently appeared to be a lack of understanding and cooperation from class instructors, professors, and other school personnel regarding accommodations and modifications that the students or the coordinator had requested. These accounts, if accurate, seem to show not only an insensitivity to Section 504 regulations, but also a direct violation of them. (p. 462)

A few selected quotations from the students participating in this study were: “the lack of education on the faculty’s part as well as the public on disabilities”; “Told I was unfit to be a student because of my disability by a professor, although obviously qualified (I MADE THE DEAN’S LIST)”; and “The main problem has been the teachers. They don’t know what I’m talking about when I explain my learning disability” (West et al., p. 462). Of all respondents, “88% expressed concerns for themselves and other students with disabilities, only 12% stated that they had no major concerns” (West et al., p. 464). Perhaps the most disconcerting statement from this research was “It is apparent that students with disabilities in higher education continue
to experience barriers in their educational environment because of their disabilities and the response (or absence of response) of the school to their problems” (West et al., p. 464).

*Legal Mandates*

The history of legal actions aimed at providing equal access and opportunity to persons with disabilities continues to evolve. In regard to institutions of higher education, Simon (2001) succinctly stated, “Many questions arising on American campuses have not yet been answered by the courts, making this an exciting, dynamic, but often confusing area of the law” (Simon, pp. 1-2). The following subsections attempt to define or clarify the rights and obligations involved when considering students with disabilities.

*Section 504 of the Rehabilitation Act of 1973*

Section 504 of the Rehabilitation Act of 1973 was developed with the purpose of achieving nondiscrimination on the basis of disability. Specifically, it declared:

No otherwise qualified individual with a disability in the United States … shall, solely by reason of his disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance (Rehabilitation Act of 1973, p. 292)

Because most private colleges and the majority of public universities receive federal financial assistance, they are subjected to the laws and regulations set forth under Section 504 (Thomas, 2000).

*The Americans with Disabilities Act of 1990 - ADA*

The Americans with Disabilities Act of 1990 (ADA) was developed with four primary purposes in mind. Two of those purposes are, (a) “to provide clear, strong, consistent, enforceable standards addressing discrimination against individuals with disabilities”; and (b) “to provide a clear and comprehensive national mandate for the elimination of discrimination against
individuals with disabilities” (Americans with Disabilities Act, 1990). The United States government declared that “The ADA prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, State and local government services, public accommodations, commercial facilities, and transportation” (ADA Regulations and Technical Assistance Materials, 2001). The ADA acts as an extension and further defines the scope of what Section 504 encompasses (Robinson, 1996).

According to Robinson (1996), there are three primary definitions one must consider in understanding the ADA. They are: (a) individual with a disability, (b) reasonable accommodation, and (c) undue hardship (p. 2).

An individual with a disability, as stated in the ADA, is one who has:
(A) a physical or mental impairment that substantially limits one or more of the major life activities of such individual;
(B) a record of such an impairment; or
(C) being regarded as having such an impairment (Americans with Disabilities Act, p. 645).

Reasonable accommodation may include but is not limited to the following actions:
1) making facilities readily accessible to and usable by persons with disabilities;
2) modifying schedules;
3) acquiring or modifying equipment or devices;
4) adjusting or modifying examinations;
5) adjusting or modifying training materials or policies;
6) substituting or waiving specific course or training requirements; and
7) providing qualified readers or interpreters (Robinson, p. 3).

Undue hardship, as interpreted by Robinson, is “an action requiring significant difficulty or expense when considered in light of such factors as the size, financial resources, and nature or
structure of the organization” (Robinson, 1996, p. 3). He further addressed the fact that lowering quality or production standards were not required in order to achieve accommodation (Robinson).

In regard to postsecondary education, an individual must meet all other qualifications before discrimination based on a disability can be professed. One of the most prominent cases of discrimination based on disability and the first in which the Supreme Court issued an interpretation of Section 504 of the ADA, was Southeastern Community College v. Davis (Kaplin & Lee, 1995, p. 391). Davis, who was deaf, had applied for admission to nursing school and been denied admission because of the disability. Davis filed suit and the U. S. District Court found in favor of the college. Davis appealed and won. That decision was reversed by the United States Supreme Court (Kaplin & Lee). In the issuance of the decision (Southeastern Community College v. Davis, 1979), the Court stated that:

Taken literally, this holding would prevent an institution from taking into account any limitation resulting from the handicap, however disabling. It assumes, in effect, that a person need not meet legitimate physical requirements in order to be "otherwise qualified." We think the understanding of the District Court is closer to the plain meaning of the statutory language. An otherwise qualified person is one who is able to meet all of a program's requirements in spite of his handicap (Kaplin & Lee, 1995, p. 392).

Since the original Act in 1990, several regulations and amendments have been enacted. These were necessary to further clarify and extend the scope of the ADA.

Section 508 - The Workforce Investment Act of 1998

In 1998, Section 508, the Workforce Investment Act of 1998, was enacted as an extension of the ADA. Specifically, it “requires that Federal agencies' electronic and information technology is accessible to people with disabilities, including employees and members of the public” (Section 508 Home Page, 2001).

The ADA does not specifically state that institutions must provide distance education courses. What it does say is that for those educational institutions that choose to do so, they must
provide the equal access that is afforded to non-disabled students (Kessler & Keefe, 1999). Wilson (2000) held a similar viewpoint of this interpretation of the act and stated that it “directs universities to make their distance learning classes accessible to qualified individuals with a disability, just as they are required to do for traditional courses.” In a personal communication from Wilson, he said that “Certainly, sec [sic] 508 by its terms does not apply to states. It's possible that the feds could push the assistive technologies act to require states to comply with 508, but the feds apparently are waffling on it” (T. Wilson, personal communication, June 23, 2001). Edmonds stated that he thought it might be “two or three years” before any precedent-setting litigation is seen in the court systems related to Section 508 in a postsecondary education environment (C. Edmonds, personal communication, October 2, 2002).

Section 508 references “federal departments and agencies” (Workforce Investment Act of 1998, 1998). Consultation with a local attorney, Ed Kelly, resulted in a similar interpretation as that provided by Wilson. Kelly, legal advisor for East Tennessee State University, stated that because the term “agency” was not specifically defined within the Act, it is debatable whether the federal government will pursue matters of discrimination against public institutions of higher education concerning access for students with disabilities to Internet-based courses (Kelly, E. J., personal communication, June 6, 2001). Kelly further elaborated that the United States Department of Education would most likely be the guiding force behind compliance in the matter (Kelly, E. J., personal communication, June 6, 2001).

The Workforce Investment Act, although stating that access to individuals with disabilities is mandated, allows for alternative means. The act declared:

> When developing, procuring, maintaining, or using electronic and information technology, each Federal department or agency, … shall ensure, unless an undue burden would be imposed on the department or agency, that the electronic and information technology allows, regardless of the type of medium of the technology – (i) individuals with disabilities who are Federal employees to have access to and use of information and data that is comparable to the access to and use of the information and data by Federal employees who are not individuals with disabilities; and (ii) individuals with disabilities who are members of the public seeking information or services from a Federal department or agency to have access to and use of information and data that is
comparable to the access to and use of the information and data by such members of the
color public who are not individuals with disabilities (Workforce Investment Act, 1998, p.
1211).

Lissner (1995) summarized the three limits to reasonable accommodation: (a) those of a
personal nature, such as eyeglasses; (b) those that would alter the fundamental nature of the
service or program; and, (c) those that would induce an undue financial burden on the institution.
He stated, “To date, there are no cases where the defense of undue financial burden has been
successfully argued” (Lissner, p. 3).

The Architectural and Transportation Barriers Compliance Board (an independent federal
agency established by Section 502 of the Rehabilitation Act of 1973) was charged, as required by
Section 508, with developing Electronic and Information Technology Accessibility Standards
Rule. The document produced by the board was lengthy and contained comments submitted by
members of the public, who were allowed to participate in the comment period before it ended
on May 30, 2000 (Electronic and Information Technology Accessibility Standards Rule, 2000).
According to the document, delays in publishing the standards effectively set the date for
compliance at six months after publication in the Federal Register, which was December 21,
2000. As a result, all federal departments and agencies were required to operate under the
guidelines by June 21, 2001 (Electronic and Information Technology Accessibility Standards
Rule).

The standards are thorough and contain section-by-section analyses, definitions,
comments by concerned public entities, and responses to those comments. Very detailed
descriptions of what constitutes software, information technology, and hardware are included.
The document does reinforce the idea that these standards do not apply to situations of national
security, such as weapons systems, cryptologic systems or intelligence activities (Electronic and
Information Technology Accessibility Standards Rule, 2000). Basically, it “specifies what
electronic and information technology is covered by the standards” (Electronic and Information
Technology Accessibility Standards Rule, p. 80501).
Dana Simberkoff, vice president of a software company that is helping the federal government update its web sites for access by the visually impaired, stated that Section 508 “may only be a federal mandate right now” (Web-accessibility deadline looms for feds – schools next?). However, Simberkoff further elaborated, “Usually when the federal government sets a mandate like this, it is the bottom floor. Other agencies will adopt the same policies after that” (Web-accessibility deadline looms for feds – schools next?). Richard Doerr, a visually impaired lawyer and technology consultant for the New Hampshire Association for the Blind, provided a similar view. He stated, “If you’re dealing with a school system, this will probably apply there in the near future” (Web-accessibility deadline looms for feds – schools next?) and urged educators to contact their respective state education departments for clarification on policies concerning web accessibility for the disabled.

Ironically, federal government offices do not appear to be adhering to their own guidelines. A study in October 2000 by researchers at Brown University examined 1,813 web sites maintained by federal agencies, states, Congress, and federal courts. Of those, they found that only 15% were accessible to disabled persons (Foster, 2000). In addition, the study found that “state Web sites on higher education were generally poor, but that states with higher overall scores had better higher-education sites” (Foster, 2000, p. A47). In a similar study by Flowers, Bray, and Algozzine (2000), they discovered that 79% of 250 randomly selected college of education home pages were found to have one or more accessibility errors.

The Individuals with Disabilities Education Act (IDEA), first implemented in 1975, is a special federal statute that does not cover postsecondary institutions. As a result, students with disabilities in higher education must assume the responsibility of disclosing their disability to the appropriate college personnel (should they choose to do so), providing the required documentation to prove a recognized disability, and requesting reasonable accommodations (Simon, 2001). They must speak up for themselves.
In summary, the literature revealed an overwhelming consensus that the regulations imposed by the Americans with Disabilities Act and its amended sections do apply to public institutions of higher education. It is still being debated among the legal representatives of those institutions. Until the United States Department of Education and the federal government take a more solid stance, universities will continue to be in limbo on their legal obligations to provide accessible Internet-based courses for students with disabilities.

The Growing Population of Students with Disabilities

Varying statistical profiles are published regarding the number of postsecondary students with disabilities. Part of the variation can be attributed to the fact that reporting disabilities is a voluntary action; thus, it can result in inconsistent numbers across the different reporting agencies, even during the same year. Some reports consider students with disabilities only for 4-year institutions, other include 2- and 4-year institutions. Most literature referred to in this section reported only on first-time, full-time freshmen. In addition, most data are collected through self-report surveys (West et al., 1993). An article titled “More college freshmen report disabilities” in Black Issues in Higher Education (2000), declared that the number of freshmen with disabilities has tripled “over a 20-year period” (p. 9).

In 1987, the Higher Education & National Affairs newsletter reported that full-time freshmen with disabilities in postsecondary schools “increased from 2.6% in 1978 to 7.4 % in 1985” (Report shows increase of freshmen with disabilities, 1987, p. 1). Henderson (1992) stated that in 1991, 8.8% of all full-time freshmen reported a disability (p. 30). In 1993, Jaschik stated that “nearly one in eleven freshmen” (9%) reported a disability (Jaschik, 1993, p. A26). HEATH Resource Center reported that in 1996, 9% of entering college freshmen had disabilities (Horn & Berktold, 1999, p. 1). Lewis and Farris (1999) reported that two-year and four-year institutions in the United States enrolled 428,280 students with disabilities during the 1996-97 or 1997-98 years (p. 5).
As indicated in Table 1, (Henderson, 1999) the numbers generally depict an increasing trend, especially with the number of students self-reporting learning disabilities. Over a decade ago, Adelman and Vogel (1991) noted: “Within the last 10 years, the number of LD students attending college has increased dramatically…” (Adelman & Vogel, p. 575). As the increase in students with disabilities rises, so too may the obligation to provide equal, and not separate, educational opportunities.

Table 1

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<tbody>
<tr>
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<tr>
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</table>

* Hearing data were not collected in 1998. The 1998 figure reflects 1996 data. Figures in columns do not necessarily reflect the totals because individuals were allowed to identify more than one disability.
Source: HEATH Resource Center, American Council on Education, based on unpublished data from the Cooperative Institutional Research Program, UCLA, selected years.
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Interestingly, the 2001 issue of a similar report by Henderson, as shown in Table 2, does not give the exact same values for prior years. The 2001 report was based upon 4-year institutions only and did not include 2-year institutions as did the 1999 publication.

Table 2

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<td>0.7%</td>
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<tr>
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<td>2.6%</td>
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<tr>
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<td>7.1%**</td>
<td>6.0%</td>
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</table>

* Hearing data were not collected in 1998. The 1998 figure reflects 1996 data.
** Estimated
Figures in columns do not necessarily reflect the totals because individuals were allowed to identify more than one disability.
Source: HEATH Resource Center, American Council on Education. (Based on unpublished data from the Cooperative Institutional Research Program, UCLA, selected years.)
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In a report published by the National Center for Education Statistics (NCES), (Horn & Berktold, 1999) the total number of undergraduates, not just freshmen, reporting a disability during the 1995-1996 academic year was given as 5.5%, as compared to over 9% as shown in Table 1. The 1995-1996 data is depicted in Table 3.
Table 3

Percentage of 1995-1996 Undergraduates Reporting Disabilities, and Among Those, the Percentage Reporting Each Disability Type

<table>
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<tbody>
<tr>
<td>Speech</td>
<td>3.0%</td>
</tr>
<tr>
<td>Orthopedic</td>
<td>23.0%</td>
</tr>
<tr>
<td>Learning Disability</td>
<td>29.0%</td>
</tr>
<tr>
<td>Partially Sighted or Blind</td>
<td>16.0%</td>
</tr>
<tr>
<td>Hearing</td>
<td>16.0%</td>
</tr>
<tr>
<td>Other*</td>
<td>21.0%</td>
</tr>
<tr>
<td>Total with a disability</td>
<td>5.5%</td>
</tr>
</tbody>
</table>

* Student reported having other health-related disabilities or limitations

NOTE: Percentages will not sum to 100 because some students reported multiple disabilities.

Perhaps Thomas (2000) described it most pointedly when he stated, “Today, there are more students with documented disabilities in higher education than ever before” (p. 248). That being the case, a discussion of assistive technologies available for persons with disabilities is appropriate for this study.

Assistive Technologies

Assistive technologies for persons with disabilities are not limited to those of a physical nature. They also include relevant software and information retrieval services. As defined by the United States Government in the Electronic and Information Technology Accessibility Standards Rule, assistive technology is “… any item, piece of equipment, or system, whether acquired commercially, modified, or customized, that is commonly used to increase, maintain, or improve
functional capabilities of individuals with disabilities” (Electronic and Information Technology Accessibility Standards Rule, p. 80524). This particular definition may lead one to believe that only physical entities are considered as assistive technology. In fact, the on-line version of Merriam-Webster’s Collegiate Dictionary, accessed in 2002, listed one definition of technology as “a manner of accomplishing a task especially using technical processes, methods, or knowledge” (Merriam-Webster’s Collegiate Dictionary, retrieved September 26, 2004).

Therefore, in addition to the physical components, concepts, and methods to enhance teaching and learning for persons with disabilities are also included in the realm of assistive technology. Day and Edwards (1996) declared that, “However, the current literature regarding assistive technology focuses on the technology itself (hardware and software). There is no empirical research demonstrating the effectiveness of specific technologies in compensating for specific types of disabilities” (p. 487). In the years since the publication of the Day and Edwards article, which focused on learning disabilities, a handful of researchers have attempted to define the non-physical aspects of assistive technology that enhance the teaching and learning of students with disabilities.

When referring to assistive technologies, it is important that a mindset be developed that incorporates the concept of the physical entities, as well as the teaching and learning methods employed for students with disabilities. The later component has been given significantly less attention, and less research has been conducted on methodology of teaching disabled persons, particularly adults. Two of the researchers attempting to define concepts and methods for improving teaching and learning for students with disabilities are Rose and Meyer.

Rose and Meyer (2000) referred to the concept of “Universal Designs for Learning” (p. 5). Universal Designs for Learning is comprised of three components that will encompass all the learning environments necessary to provide a level of support and challenge for students. The first component includes providing multiple means of representation of the material under consideration. For example, specialized hardware may provide access for a blind student, and at
the same time, one with a learning disability could be provided with both graphical and textual methods of presentation. The second component of the universal learning design provides students with multiple means of expression. Examples of this include the faculty member who allows a student to either submit a written essay, produce a video, or provide graphical or illustrative instruments. The third component allows students alternative means of engagement. Various learning disabled students would be motivated by novelty and surprise, whereas those afflicted with particular syndromes could more likely be frightened by such methods. Engagement should be geared toward the individual’s cognitive or physical impairment. The central theme of all three components of Universal Designs for Learning is based upon “multiple means,” a consideration of which technology is more applicable than the traditional classroom method of teaching (Rose & Meyer).


Students with learning disabilities frequently find that computers offer them opportunities to compensate for their processing problems by using a multisensory approach that can build on their strengths. For these students in particular, computers are often the great equalizer that permits them to compete equitably with their nondisabled peers (p. 248).

Types of Assistive Technology: Hardware

Often a discussion of assistive technologies for disabled persons is focused upon the physical entities, more commonly referred to as hardware. As far back as 1994, there were at least two institutions in the process of adapting computers for the disabled – The Massachusetts Institute of Technology and the University of Massachusetts Institute of Technology and the University of Massachusetts. These two institutions defined their general problems then as being the same that other universities were, and still are, fighting in
providing such technologies – a lack of funding, space, personnel, and equipment (Wilson, 1994).

There are several different hardware devices available for those persons affected by visual, hearing, or mobility impairments. In keeping with the rapid rate of technological change, more devices are introduced on the market or tested in research environments everyday. For example, there are screen guards than enhance or enlarge the screen for those with visual impairments (Rose & Meyer, 2000). Used alone, most screen enlargers are not sufficient aid for the more visually impaired, as they normally only magnify the screen contents to twice the normal size. They may range in cost from $50.00 to over $200.00.

Alternative input devices are available to those who may have lost fine motor control in the upper body region. These are the devices that could replace a conventional keyboard and/or mouse and include the sip-and-puff straw or one-handed keyboards (Coombs & Cartwright, 1994).

Braille devices (refreshers) are available for the visually impaired. These devices interpret the ASCII (text) characters on the screen to a unit that translates them into Braille characters by raising or lowering pins (refreshing). They normally are purchased in the 20-, 40-, or 80-character Braille-cell configurations. They refresh as the content of the screen changes. These are relatively expensive units, ranging in price from $4,000 to $12,000 (National Library Service for the Blind and Physically Handicapped, June 16, 2001). In thoughtful reflection, one can determine that these devices will be practically useless for the student using them to take a graphics-intensive Internet-based course from home, as these units are generally available only at or through the student’s home institution.

Higher-order technological devices are also available. There are units that will allow an individual with severe physical mobility issues to operate a personal computer. One device in particular allows someone who is merely looking at a computer screen to direct a laser beam at different points on the screen. The laser will prompt the user for commands, such as whether to
type a letter or a number. The only mobility required for this piece of hardware is the use of one eye and the ability to keep the head still. Produced by LC Technologies, Inc., the Eyegaze System costs about $16,000 (Dorman, 2000).

For the visually impaired, note-takers can be used to take notes then feed them into a computer for conversion to text or speech output. These note-takers are slightly larger than handheld computers and range anywhere from $1,000 to $3,000 (Connolly & Malloy, 1998). Technology has produced Braille printers for many years now; however, they are still relatively loud and have not kept pace with the rapid technological changes of other adaptive devices. The primary improvement experienced has been the option to print double-sided. They are available for connection to personal computers in aiding the visually impaired student. Once again, they are not inexpensive – the home version can run about $1,500, while an office model may cost anywhere between $5,000 to $10,000 (Connolly & Malloy).

Types of Assistive Technology: Software

Numerous software packages, available for different operating system platforms, are available on the market at this time. In addition to the installable applications, the operating systems are becoming more adaptable to individuals with disabilities. The Macintosh operating systems allow users to slow the speed required for a double-click of the mouse, control the speed at which the pointer moves, and use the numeric keyboard for mouse functions, among other options. Similarly, the Windows operating systems offers adaptability functions such as mouse pointer trails, adjustable icon and title text sizes, and color control for the visually impaired. Again, these are just a few examples of the options being offered in the latest operating systems. The are referred to as accessibility options (Milone, 1997).

Software for Physical Impairments. Screen magnifiers are one of the more common applications being developed, enhanced, and implemented. These programs allow the user to
enlarge areas of the computer monitor for easier viewing. One of the most popular and easy to use is BigShot, produced by Ai Squared (Dorman, 2001). BigShot can magnify the screen anywhere from 105 to 200 times actual size. At a cost of about $100, it is reasonably inexpensive and allegedly “easy to install and operate” (Maino, 2001, p. 33); unfortunately, there is no Macintosh compatible version available. Many of the journal articles reviewed regarding screen magnification applications mentioned this specific software program.

Speech synthesizers are software programs that will translate the text on a computer screen to audible output, thus enabling a visually impaired individual access to the contents of the screen. Often, the voice is purported to be humanlike; but, more often than not, it sounds very robotic. The price of many screen-synthesizing programs have come down from about $2,000 to a few hundred dollars because of their ability to function through a personal computer’s standard sound card (Connolly & Malloy, 1998).

Software that translates audible input into written text is also a very common product currently available on the market. One of the more popular ones is produced by Peter Cohen Associates and is titled DragonDictate. Also known as voice recognition software, these packages will disabled users (and non-disabled users) to control their computers through voice commands (Milone, 1997). More recently, Microsoft introduced voice recognition as a component of the Microsoft Office XP suite. Interestingly, Microsoft appeared to have been marketing not to the disabled segment but to the Asian market. This reasoning is based upon the belief that the difficult keyboard layouts of Asian users lead them to be much slower typists than Americans (Holly, 2001). Regardless, personal experience has shown that “training” the voice recognition software is time-consuming in the initial phases, and multiple users make it much more difficult to work with the software. Also, even the best technology yet has produced software that is accurate at only about the 90% rate. As quoted by Holly: “Would you be happy with a newspaper in which every sentence had 1 word in 10 incorrect?” (p. i3).
Software for Learning Disabilities. As the fastest-growing segment of students with disabilities, those with learning disabilities are finding that the technological medium is not keeping pace with that of the physically disabled. Learning disabilities are varied, with many different types. Ruzic (2001) stated that “… over 80% of all identified learning disabilities (LDs) are estimated to be reading-related” (Ruzic, p. 1). The debate continues still as to whether learning disabilities are strictly behavior-oriented, or whether they are psychoneurological or perception-based (Bryan & Bryan, 1975). Bos and Vaughn stated that students with learning disabilities were five times more prevalent than those with behavior disorders (Bos & Vaughn, 2002). The preponderance of literature available focused on the learning disabilities of children, not that of adult students. Nevertheless, most learning disabilities can be classified into a handful of categories, depending on the theory which one chooses to espouse. Bateman classified learning disabilities into one of three subcategories: (a) dyslexia (primarily reading difficulties), (b) verbal communication disorders (“primarily comprehension and expression in the spoken word”) (Johnson & Morasky, 1980, p. 27), and (c) visual-motor integration (more commonly known as hand-eye coordination) (Johnson & Morasky). Hammill and Myers categorized these disabilities into six subcategories, as did Valett (Johnson & Morasky).

Software applications aimed at learning-disabled students pose a different set of problems than do those geared toward physical impairments. In the forward of the Adamson and Adamson book, Abrams clarified that “Learning disorders are caused by any number of a multiplicity of factors, all of which may be highly interrelated” (as cited in Adamson & Adamson, 1979, p. vii). This characteristic only makes the development of software for the learning disabled particularly specialized. For example, there are particular problems with math and science simply because of the formulas and numbers that are inherent to the subject field. They do not lend themselves to easy translation by some of the more traditional methods (Gardner, 1999).

Much less information is available concerning software for learning disabled adults. Gardner acknowledged that publishers are becoming more sensitive to the problems that students
with disabilities must contend with by providing such items as CD-ROMs with the textbooks. However, she elaborated that audio-based media or videotapes should be made available, as well (Gardner, 1999).

In summary, certain assistive technologies for students with disabilities have advanced rapidly in the last few decades. The majority of research being done in this area focuses on the hardware components. Research and development of software and teaching methodologies available for these students lags far behind that of the physical devices. It is encouraging to note that some software firms and researchers are becoming more proactive in meeting the accommodation needs of students with disabilities, as well as other disabled persons.
CHAPTER 3
RESEARCH METHODOLOGY

The purpose of this study was to identify important factors that should be considered by faculty members at selected public institutions of higher education as they plan, design, develop, implement, and evaluate Internet-based courses in order to make the courses responsive to the needs of students with disabilities. In addition, the study explored perceptions of students with disabilities in terms of Internet-based courses offered at their institutions.

It is a timely topic, as the information age continues to introduce technology into people’s everyday lives, including those in the educational arena. In addition, the legal implications of accessibility to all will become more prevalent. The dynamic nature of information technology will make this study relevant to students and educators alike. The literature review revealed many types of hardware and software that would enhance the learning ability of students taking online courses, yet it failed to produce any substantive information about the subject matter under investigation.

The sampling method used was purposeful and not random. Gall, Borg, and Gall (1996) described an emergent process as one in which the researcher does not begin a study with a research design specified. Instead, it emerges during the data gathering process as the evaluator “gains new insights into the concerns and issues of stakeholders” (Gall et al, p. 706). Likewise, Guba and Lincoln (1981) contrasted traditional and emergent research designs with this declaration: “Sampling is almost never representative or random but purposive, intended to exploit competing views and fresh perspectives as fully as possible. Sampling stops when information becomes redundant rather than when subjects are representatively sampled” (Guba & Lincoln, p. 276).

Upon considering an assessment of the methods available to find the answers to this study, it became apparent that a form of research must be decided upon early in the process. Which method would best provide the answers needed to the research questions proposed? It was
necessary to begin by investigating the differences and similarities between quantitative and qualitative research. In distinguishing between quantitative and qualitative research, Goldman and McDonald (1987) supplied the most simplistic yet powerful definitions. They stated, “Quantitative research… concerns itself with counting things to arrive at statistically projectable data” (p. 7) whereas “qualitative research addresses the nature or structure of attitudes and motivations rather than their frequency and distribution” (p. 7). They further explained that the purpose of qualitative research was “to explore in depth the feelings and beliefs people hold, and to learn how these feelings shape overt behavior” (p. 7).

Patton (1990) asserted that qualitative research permitted “ … the evaluator to study selected issues in depth and detail” (p. 13) and that “the lack of constraint by predetermined categories of analysis contribute to the depth, openness, and detail of qualitative inquiry” (p. 13). The demographic data obtained in the participant interviews provided minimal information for review and classification. Indeed, Patton (1990) stated that “qualitative and quantitative data can be collected in the same study” (p. 14); they are not mutually exclusive. Patton also described several instances when qualitative methods of evaluation are more appropriate than quantitative. In *Qualitative Evaluation and Research Methods* (1990), he discussed several evaluation circumstances that would be best performed using qualitative methods. In summarizing, Patton stated:

Practical applications of qualitative methods emerge from the power of observations, openness to what the world had to teach, and inductive analysis to make sense out of the world’s lessons… the practical applications come down to a few very basic and simple ideas: pay attention, listen and watch, be open, think about what you hear and see, document systematically (memory is selective and unreliable), apply what you learn. (Patton, 1990, p. 139).

Creswell (1998) viewed qualitative research as being done “in a natural setting where the researcher is an instrument of data collection who gathers words or pictures, analyzes them
inductively, focuses on the meaning of the participant, and describes a process that is expressive and persuasive in language” (p. 14). Best (1981) said that, “Qualitative studies are those in which the description of observations is not ordinarily expressed in quantitative terms” (p. 156).

Lincoln and Guba (1985) described the differences in conducting quantitative and qualitative research. They began by defining an axiom as “the set of undemonstrated (and undemonstrable) ‘basic beliefs’ accepted by convention or established by practice as the building blocks of some conceptual or theoretical structure or system” (p. 33). The basic beliefs of a naturalist researcher versus those of the traditionalist-positivist are contrasted in their depiction of five axioms (Lincoln & Guba). When considering only Axiom 1 – the nature of reality, the naturalist paradigm proposed that “realities are multiple, constructed, and holistic” (p. 37).

There are multiple constructed realities that can be studied only holistically; inquiry into these multiple realities will inevitably diverge (each inquiry raises more questions than it answers) so that prediction and control are unlikely outcomes although some level of understanding (verstehen) can be achieved (Lincoln & Guba, p. 37).

“Verstehen”, as discussed by Patton (1980) “places emphasis on the human capacity to know and understand others through sympathetic introspection and reflection from detailed description and observation” (Patton, 1980, p. 45). In the acquisition, assimilation, and analyses of the data generated by this study, it was anticipated that a qualitative study based upon naturalist inquiry would be the most appropriate method.

The holistic consideration of these definitions of qualitative research identifies a qualitative analysis as being the most effective method of research for my purposes. Encompassing the definitions of qualitative research by Goldman and McDonald, Lincoln and Guba, and Patton, I concluded that qualitative research should provide the most in-depth, meaningful information for analysis to the purpose of this study. Qualitative interviewing of the faculty and students under consideration was the most effective method for obtaining thick, rich data for analysis.
Population and Sample

Three postsecondary institutions were selected to participate in this study. It was determined that they would all be 4-year public institutions and member institutions of the Tennessee Board of Regents. This eliminated any community colleges, vocational schools, private institutions, and other institutions inside or outside of the Tennessee state boundaries. This represented a purposeful sample of institutions. Patton (1990) stated that, “The logic and power of purposeful sampling lies in selecting information-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research” (p. 169). Purposeful sampling in qualitative research, according to Mason (1996), is “usually considered necessary… because a complete census of the wider population or universe in which you are interested is either impossible, impractical to achieve, or simply not necessary” (p. 84).

There are many different strategies for selecting information-rich cases. For the purpose of this study, criterion sampling was used to select the institutions for participation. Patton (1987) described the point of criterion sampling: “to be sure to understand cases which are likely to be information rich because they may reveal major system weaknesses which become targets of opportunity for program or system improvement” (p. 56). The criteria of importance for institution selection in regard to this study included the following four factors: (a) the institution must offer Internet-based courses as part of the general curriculum open to all students; (b) the institution must participate in the Regents On-Line Degree program (RODP); (c) the institution must be fully accredited by The Commission on Colleges of the Southern Association of Colleges and Schools (SACS); and (d) the institution must have a student headcount of at least 7,000.

There are currently six 4-year universities that are members of the Tennessee Board of Regents. They are Austin Peay State University, East Tennessee State University, Middle Tennessee State University, Tennessee State University, Tennessee Tech University, and the
University of Memphis. The TBR also consists of 13 two-year institutions, and 26 technology centers (Tennessee Board of Regents, June 6, 2002).

The criteria for selection were based on several factors. The first criterion defined, the institution’s offering of Internet-based courses as part of the general curriculum, is crucial. If the institution did not offer Internet-based courses, there would be no study participants and therefore no data for analysis. As this is the crux of the research project, this particular criterion was considered imperative.

The second criterion defined is participation in the RODP. An institution’s participation in the RODP program indicates a movement toward an increased use of technology in offering postsecondary courses in an alternative format. The institutions selected would be participants in the RODP program in order to determine if students with disabilities can or will find this an acceptable alternative to the traditional classroom environment. It was anticipated that this information will be gleaned from probing questions introduced during the interview with the students.

The third criterion, SACS accreditation, is important when considering the quality of the institution’s programs. Receiving SACS accreditation is a strenuous, time-consuming, and important goal for institutions. As stated in the SACS Principles of Accreditation:

- Accreditation evaluates whether an institution maintains clearly specified educational objectives that are consistent with its mission and appropriate to the degrees it offers and whether it is successful in achieving its stated objectives.

- The regulation of accreditation relates to a traditional U.S. philosophy – that a free people can and ought to govern themselves, which is done best through a representative, flexible, and responsive system. … Accreditation enhances educational quality throughout the region by improving the effectiveness of institutions and ensuring to the public that institutions meet standards established by the higher education community. Accreditation is a common denominator of shared values and practices among the diverse range of institutions within the higher education community. (Commission on Colleges Southern Association of Colleges and Schools - Principles of Accreditation, June 7, 2002)
The fourth defined criterion, size of student headcount, was chosen as a value that should be sufficient to allow a minimum number of participants in the study. Any institution with an enrollment smaller than this would possibly not provide the quantity of eligible participants needed to conduct the research.

To determine qualification based on the above criteria, I reviewed the information provided on the SACS and TBR web sites. In order to maintain the highest level of anonymity possible, no particular institution will be named; but it will suffice to state that the selection of the three institutions was based upon convenience, accessibility, focus on technological program offerings, and proportion of students with disabilities to the student body. The institutions will hereafter be referred to simply as Institution X, Institution Y, and Institution Z, with no particular order or meaning to the reference.

Perusal through the RODP, TBR and individual institution web sites of the six institutions proved that they all offered Internet-based courses as part their general curriculum. The RODP site (http://www.tn.regentsdegrees.org/universities.htm) listed all six four-year postsecondary TBR institutions as participants in the program. In addition, the TBR web site listed all three of the chosen institutions as accredited postsecondary schools.

The fall 2001 enrollments for all of the 4-year TBR institutions were as follows: (a) Austin Peay - 7,033, (b) East Tennessee State University - 11,093, (c) Middle Tennessee State University - 20,073, (d) Tennessee State University - 8,664, (e) Tennessee Tech University - 8,653, and (f) University of Memphis - 20,332 (Tennessee Board of Regents - Fall 2001 Headcount and FTE, June 6, 2002).

By the time the faculty focus group was conducted, the fall 2002 semester had begun. Headcounts were once again verified through the TBR website. At the time, enrollments were listed as follows: (a) Austin Peay - 6,809, (b) East Tennessee State University - 11,131, (c) Middle Tennessee State University - 21,163, (d) Tennessee State University – 8,881, (e) Tennessee Tech University - 8,890, and (f) University of Memphis - 19,797 (Tennessee Board of
Regents - Fall 2002 Headcount and FTE, June 6, 2002). Therefore, all six 4-year TBR institutions met the minimum headcount criterion.

Tables 4, 5, and 6 indicate the number of Internet-based courses taught at the three chosen institutions during selected semesters.

Table 4

*Internet-Based Courses Offered at Institution X - Selected Semesters*

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total Internet-Based Courses Taught/Offered</th>
<th>Total Number of Courses that were available through the RODP Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2001</td>
<td>29</td>
<td>*</td>
</tr>
<tr>
<td>Summer 2001</td>
<td>16</td>
<td>*</td>
</tr>
<tr>
<td>Fall 2001</td>
<td>41</td>
<td>**</td>
</tr>
<tr>
<td>Spring 2002</td>
<td>54</td>
<td>**</td>
</tr>
<tr>
<td>Summer 2002</td>
<td>39</td>
<td>**</td>
</tr>
<tr>
<td>Fall 2002</td>
<td>60</td>
<td>**</td>
</tr>
</tbody>
</table>

* - RODP did not begin offering courses until Fall 2001

** - Data not available
Table 5

*Internet-Based Courses Offered at Institution Y - Selected Semesters*

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total Internet-Based Courses Taught/Offered</th>
<th>Total Number of Courses that were available through the RODP Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2001</td>
<td>22</td>
<td>0 *</td>
</tr>
<tr>
<td>Summer 2001</td>
<td>10</td>
<td>0 *</td>
</tr>
<tr>
<td>Fall 2001</td>
<td>29</td>
<td>3</td>
</tr>
<tr>
<td>Spring 2002</td>
<td>41</td>
<td>4</td>
</tr>
<tr>
<td>Summer 2002</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>Fall 2002</td>
<td>54</td>
<td>9</td>
</tr>
</tbody>
</table>

* - RODP did not begin offering courses until Fall 2001

Table 6

*Internet-Based Courses Offered at Institution Z - Selected Semesters*

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total Internet-Based Courses Taught/Offered</th>
<th>Total Number of Courses that were available through the RODP Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2001</td>
<td>41</td>
<td>0 *</td>
</tr>
<tr>
<td>Summer 2001</td>
<td>19</td>
<td>0 *</td>
</tr>
<tr>
<td>Fall 2001</td>
<td>175</td>
<td>33</td>
</tr>
<tr>
<td>Spring 2002</td>
<td>202</td>
<td>62</td>
</tr>
<tr>
<td>Summer 2002</td>
<td>89</td>
<td>63</td>
</tr>
<tr>
<td>Fall 2002</td>
<td>194</td>
<td>103</td>
</tr>
</tbody>
</table>

* - RODP did not begin offering courses until Fall 2001

As previously stated, to maintain strict confidentiality, the three institutions involved in this study will be referred to as Institution X, Institution Y, and Institution Z. Each individual
representing an institution is referred to by a code assigned before the interview was conducted. I am the only person who has the ability to identify the individuals.

**Institutional Review Board Approval**

At all three institutions, it was necessary to contact the director of the Institutional Review Board (IRB) to gain approval for conducting the research. As the first step, on August 13, 2001, I attended and completed the mandated workshop conducted by the IRB at ETSU entitled Responsibility in Human Subject Research: IRB 101. On August 31, 2001, after successful completion of the workshop, its required exam, and the accompanying online modules, I was awarded the Certificate of Human Subjects Research Compliance Training by the East Tennessee State University/James H. Quillen Veterans Affairs Medical Center Institutional Review Board.

I had consulted with the Pat Myrick, Compliance Manager at ETSU’s IRB, and requested information on how to obtain approval for research at the other institutions. She informed me that once approval was obtained to proceed with the research at one of the chosen institutions, a faxed copy of the approval forms to the respective offices at the other campuses would most likely be sufficient. If this procedure failed to provide me with the necessary approval at either of the other two institutions, I would have been required to pursue my research at another institution that meets the criteria defined in the section *Population and Sample*.

On July 10, 2002, I received a letter stating that I was to appear before the full IRB Board at Institution Y on July 11, 2002, for review of the study. After making the necessary corrections, additions, and modifications to the submission, the board approved my request to include human subjects in my research study. It was approved in two parts, one for the faculty and one for the students. Approval for faculty interaction was received on July 17, 2002. Approval for student interaction was received on July 22, 2002.
Upon receipt of full-board approval at Institution Y, I contacted the appropriate personnel at the other two institutions and was told by both that copies of the IRB approval forms, IRB narratives, and Informed Consent Documents should be sent to them for review. After doing so, I gained approval to use human research subjects at Institution X on September 2, 2002, and from Institution Z on September 6, 2002.

Due to the delay in proceeding with the research, two IRB continuances were requested and granted from all three institutions.

Selection of Focus Group - Faculty Members at Institution Y

To identify appropriate faculty members for consideration in the focus group, it was necessary to determine those who were currently teaching or had recently taught Internet-based courses. This was accomplished by reading through the entire course offerings at Institution Y for selected semesters. Course schedule booklets were obtained for five consecutive semesters. Those semesters included in the review were summer 2000, fall 2000, spring 2001, summer 2001, and fall 2001. Each course entry in these particular catalogs was coded with special notes as they apply to the individual classes. Each course marked as being taught on the Internet was appropriately coded, along with the accompanying faculty member’s name. A list was developed of the faculty who had taught Internet-based courses as well as the course numbers they taught. This information was cross-referenced with a campus telephone directory to determine the mailing address for that faculty member. Letters were sent to those qualifying faculty members to request their participation in a focus group, the purpose being to develop an interview guide. The letter is included in Appendix A.

The faculty members chosen for participation were comprised of those who responded affirmatively to the letter requesting participation in the focus group. It was preferable to have the group comprised of a mix of faculty members. According to Templeton (1987), “No absolute heterogeneity or homogeneity exists in groups” (p. 174). Neither a true homogeneous nor a
heterogeneous group would produce the results I desire. Therefore, as moderator, it was my responsibility to set the mood and “infect every member with her ‘intense but respectful curiosity,’ until everyone present becomes a moderator and the climate is active and egalitarian” (Templeton, p. 175). These faculty members were chosen by a method that allowed for maximum variation, to include faculty members from several different colleges/schools within Institution Y, thus eliminating any true homogeneity or heterogeneity.

There were 51 letters requesting participation mailed to faculty at Institution Y. Of those, there were 33 responses, the majority of which were done by sending back the information sheet included with the letter. There were 28 forms returned, three responded by e-mail, and one by telephone. Of those 33 responses, 5 indicated that they could not participate in the focus group or they chose not to participate.

A date, time, and location were determined to conduct the focus group. “Dummy” forms were created for those who responded by e-mail or phone, in order to be included in the selection process. After doing such, the affirmative responses were separated from those that could not participate, and six were randomly selected from the stack of forms to be the primary group invited to participate. At the same time, four alternate forms were selected as backups in the event that any of the original six would be unable to participate. Four of the original six were contacted and confirmed that they would participate in the focus group; two responded that they had conflicts with their schedules and would not be able to attend. At this time, I randomly selected two of the alternate four, who agreed to participate. The focus group was comprised of six individual faculty members, representing four of the nine colleges/schools at Institution Y. Two of those colleges/schools had two representatives each; however, they were both from different departments within their respective college or school.
Development of Faculty Interview Guide

A focus group was conducted at Institution Y on September 5, 2002, for the purpose of developing an interview guide for faculty members. A preliminary guide of the actual questions to be asked during the interview sessions was developed. After the focus group was conducted, that version was refined and is depicted in Appendix C.

According to Marshall and Rossman (1995), most focus groups are comprised of 7 to 10 people, but can have as many as 12 or as few as 5 persons participating. In addition, they stated that the individuals should not be familiar with each other. For this purpose, the selection will consist of about six to eight individuals (Marshall & Rossman). Kreuger (1994) also asserted that a focus group should be composed of 7 to 10 people. He further elaborated upon the description of the group as follows:

[It is] a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, nonthreatening environment. It is conducted with approximately seven to ten people by a skilled interviewer. The discussion is relaxed, comfortable, and often enjoyable for participants as they share their ideas and perceptions. Group members influence each other by responding to ideas and comments in the discussion (p. 18).

It is highly unlikely that all the individuals would be unfamiliar with one another because each member of the group was employed at the same campus. Nevertheless, it was invaluable to gain the insights and perceptions of these individuals. Also, the data gathered were not analyzed in an official capacity nor included as part of the study beyond the original intent of its contribution. The purpose of the faculty focus group was to assist in the development of an interview guide for future faculty interviews. The interview guide, according to Patton (1990), is “prepared in order to make sure that basically the same information is obtained from a number of people by covering the same material” (p. 283). As the situation evolves, the wording of the questions and the order of the topics will be determined (Patton, 1990). There was no predefined list of questions to be answered in any particular order. The format allowed for refinement of the interview technique, as well as the opportunity to draw upon the experience of the participants. It was important that my personal biases were not allowed to infect the focus group session. This
was difficult, as even facial expressions or vocal inflections can contribute toward misleading the participants. The capacity to understand my own biases is a prerequisite for avoiding their exposure during the session (Templeton, 1987).

Those faculty members who elected not to participate in the focus group were not excluded from further mailings regarding this research, as they may have chosen to be interviewed instead. Depending on their response to the letter requesting participation in the focus group, they may have been sent copies of a letter requesting an interview.

Once I identified a requisite number of participants for the focus group, I scheduled to have it conducted in a neutral location. The time limit did not exceed one and a half hours, and did not last less than the recommended 30 minutes. A brief introduction into the research study was given before input from the faculty was recorded. All information deemed appropriate was recorded on paper; no audio recording devices were used during the meeting. A personalized, follow-up thank you note and a small token of appreciation were sent to each of the faculty members participating in the focus group.

The standardized, open-ended interview form included in Appendix C reflects the modifications made based upon input gathered at the focus group meeting and a follow-up meeting with my dissertation chair. The atmosphere of the focus group was relaxed, and the contributions of the faculty members allowed me to gain a perspective that I had not previously considered.

I began the focus group by introducing myself and my study. Then, I went around the room and asked the participants to introduce themselves and give a brief synopsis of their experience in teaching Internet-based courses. I then distributed a copy of the research questions and explained that I needed their help in developing a guide that would elicit the answers to these particular questions. The intentions were to address each research question one at a time. During the course of the group, we sometimes steered off-course while addressing the research questions and ended up discussing the concerns and viewpoints of the faculty members themselves. Often,
they were responding with what their answers would be, should they have been interviewed and
asked to answer the research questions, rather than providing the answers I was seeking.
However, I would gently re-address the research question itself and ask them pointedly, “What
exact question should I ask, and what terminology should I use to get an answer to this
question?”

An excellent example of the varying perspectives that I had not previous considered is the
explanation from one participant, who teaches Music Appreciation as an Internet-based course.
She declared that “reasonable accommodation” could not be met for a deaf or hearing-impaired
student who desired to take her course, as there is no technology that can translate music into a
format that a hearing-impaired person could interpret. One participant declared that she had not
even thought about students with disabilities when developing her courses for online delivery.
Her primary concern at the time was the ease of managing the course.

In addition, another participant stated that it was extremely difficult to prepare a course
for a student with disabilities because she did not even know until the last minute that there
might even be one desiring to participate. Students must present to the faculty member a
document from the disability services office where they have registered and provided the
necessary documentation of their disability. The document presented to the faculty member
states what accommodations must be made in order for the student to participate in the particular
course. This led to the discussion of how difficult it would be to prepare two different online
courses—one who would provide the necessary accommodations for all types of disabilities and
one that would not. All participants agreed that this would take a considerable amount of time.
Also, they indicated their concern of available resources on their campus that would allow them
to learn the technologies and techniques necessary to provide an online course that would meet
the needs of a student with disabilities.

Another interesting topic of conversation led to the fact that many faculty members may
not even know they have ever had a student with disabilities participating in their course. It may
be that the student chose not to disclose the disability and was able to successfully participate in the Internet-based class without any additional accommodations. All six participants stated that they had not had a student disclose a disability when taking one of their Internet-based courses and suggested that the interview guide ask faculty if they knew if they had ever had such students registered in these classes.

One member of the focus group declared that there are minimal skills, abilities, and knowledge that any student must have in order to take her class, whether they are disabled or not. For example, a student must be able to use a computer and have access to one that meets the minimum hardware specifications in order to participate in the class. If a student is homebound and has no method of connecting to the Internet, it would be nonsensical for him or her to register for such a course. Another example would be that of a course that had a prerequisite course. If the student had not successfully completed the prerequisite course, it is unreasonable to assume that they would be allowed to take the Internet-based version of the other. Even a traditional, classroom-based delivery method would not allow a student to participate had he or she not met the prerequisites.

Other concerns vocalized that evolved during the group were those of the faculty member’s obligations to students with disabilities, how the students participating in their Internet-based course are evaluated, the necessity of maintaining consistency in providing content, whether the course delivery method was in a traditional environment or Internet-based, and the legal understandings of the laws governing equal access to the disabled student.

Near the conclusion of the group, I distributed a copy of the original interview guide that had been developed early in this research study as a means of comparing it to what we had finalized upon. The participants made many suggestions, with the majority of changes being the addition of several questions.
In conclusion, the open-ended, standardized interview guide as shown in Appendix C is the resulting product of the focus group and a few minor changes as suggested by my committee chair.

Selection of Focus Group - Students

It was important to conduct a focus group with the students as well as with the faculty members. However, their classification as members of a vulnerable group demanded that IRB standards be satisfied and IRB approval was obtained before any contact whatsoever occurred with the students.

To identify students with disabilities for consideration in the focus group, it was necessary to begin by procuring the assistance of the disability services at Institution Y. I contacted the office for the number of students with disabilities who were registered with them. Surprisingly, the number was much higher than I would have expected. Just before the beginning of the fall 2002 semester, the disability services office reported 493 registered students. Upon calculating the costs of mailing a request to participate in the focus group, and including a self-addressed, stamped envelope (SASE) for the convenience of responding, as well as considering that letters requesting interviews, also including a SASE for a response, I realized that it would be financially impossible to recruit students by sending letters to every student registered at all three institutions. To send focus group and interview letters to those registered only at Institution Y, it would have cost almost $730.00 in postage alone. I consulted the local post office regarding a bulk mailing permit and a business reply envelope. I was told that bulk mail would only reduce the cost to about $.34 per item. A request for the use of a business reply envelope would have required an application to the local postmaster and approval from the regional office. In the interest of time and cost, I concluded that neither of these methods was acceptable.

In consultation with my committee chair, it was suggested that I define the criteria that I would need to use in order to recruit acceptable participants. These data were supplied to the
disability services officer, who then selected participants randomly from those meeting the criteria. Initial letters to any students had to be sent from the office, as confidentiality prohibited the office from releasing any information about their registered students without the student’s consent.

I consulted with the disability services office to procure a neutral location to conduct the focus group. The time and date were pre-established and indicated in the letters that were sent to the students. The letter in Appendix D reflects what the students received with the exception of having the location removed to provide confidentiality at the institutional level.

In conducting a focus group at Institution Y with at least six participants, I requested that the disability services office send out 30 request letters. The criteria would include a mix of students with different disabilities (visual impairment, hearing impairment, speech impairment, physical impairment, health-related impairments, and learning disabilities), some who lived in on-campus housing and some who lived off-campus, and a mix of undergraduate and graduate students. The office queried their database of registered students and randomly selected the ones who met the criteria. They then printed the mailing labels provided and mailed the letters for me (the letters included a SASE).

The intentions were to create a focus group comprised of those who responded affirmatively to the letter requesting participation. In the event that numerous positive replies were received, maximum variation sampling would have been imposed to select at least one student from each of the major disability classification categories, if possible. This would have represented a sampling strategy with the purpose being “to maximize the variation in site selection or case selection” (Patton, 1980, p. 102) and “document unique variations that have emerged in adapting to different conditions” (Lincoln & Guba, 1985, p. 102). It should be emphasized that maximum variation sampling does not attempt to generalize findings to all people or to all groups but to identify “significant common patterns within that variation” (Patton, 1990, p. 172).
After the deadline for receiving responses from students had passed, there were only three interested individuals. One returned the form in the SASE I provided. Two others left voice mail messages indicating their potential interest. None of the three was contacted at this time.

During May 2004, I again prepared 30 letters for students requesting their participation in a focus group. The Disability Services office at Institution Y then selected recipients based on the previous criteria and mailed the letters. There were two affirmative responses received via the form letter included, and one who left a voice mail message. That person was contacted by phone that evening and a brief conversation about the study was held.

*Development of Student Interview Guide*

A focus group was planned at Institution Y during a single meeting only for the purpose of refinement of the standardized, open-ended interview guide for students. As discussed above in the section *Development of Faculty Interview Guide*, the purpose was to refine the interview guide before actually conducting any interview sessions with the students.

Ultimately, no focus group was conducted with the student participants. The standardized, open-ended interview form for students included in the appendices was modified based upon input from my committee chair and used during the interview process for the students with disabilities.

*Selection of Faculty Members within Institutions*

As defined in the section *Selection of Focus Group - Faculty Members at Institution Y*, faculty selected to receive a letter requesting an interview must have met certain criteria. They must have been currently teaching or had taught an Internet-based course in the recent past. Determination of who these particular faculty members were was derived in the same fashion as those selected for invitation to participate in the focus group, although those that participated in the focus group were not eligible to participate in the study as an interviewee. Faculty members
meeting the criteria were sent letters requesting to be interviewed (Appendix B). The letter requested confirmation within 10 days of receipt. Upon receiving confirmation of willingness to be interviewed, a combination of random selection and maximum variation sampling was employed to select the faculty members to interview. According to Patton (1987), maximum variation “aims at capturing and describing the central themes or principal outcomes that cut across a great deal of participant or program variation” (p. 53). The primary purpose of this selection method was to select faculty representing the broadest range possible across the various schools or colleges located at their respective institution.

Interviews with willing faculty were scheduled at this time. Each faculty member was notified beforehand that the interview is to be audio-recorded and transcribed by a paid transcriptionist, and he or she be given the option to remove himself or herself from the study at that time. A copy of the Informed Consent Document (ICD) (see Appendix H) was sent via email to the majority of the faculty days or weeks before the scheduled interview. This allowed them to review the document, ask any pertinent questions, and decide whether continued participation was acceptable to them. It was explained in the ICD that the tapes are to be coded in a manner known only to me. The audio tapes were destroyed as soon as they were transcribed and accuracy was verified by performing a member checking process. This was accomplished by mailing a copy of the transcription of their interview to each of the participants and requesting they initial each page and make any clarifying comments on the document. In all, 12 of the 17 faculty interviewed returned the transcript with corrections, deletions, and modifications.

Selection of Students within Institutions

The segment of the student population under consideration in this study was deemed to be a “vulnerable group.” Prior approval by the Institutional Review Board was mandatory before any contact whatsoever was attempted with any members of the group.
To solicit students to interview, initial contact was made via the director of the disability services offices at each of the institutions. A copy of the letter that was sent to the directors for distribution to the students is included in the appendices (Appendix F). Prior consultation with the director allowed for assurance that all IRB approval had been made and that the director was willing to assist in the study. There were several email and postal mail correspondences sent to the director of this office at Institution Z, with no acknowledgment for any of them. Consequently, I mailed a package to this individual containing an explanatory letter, letters for the students, and pre-stamped, addressed envelopes for their response. It was returned in a few days with a letter stating that no students at that institution matched the criteria. This was considered a major problem in gaining access to study participants. That batch of letters was subsequently dispensed to students through the Disability Services office at Institution Y.

In the letter, the student had the opportunity to choose a method of contact. When a sufficient number of students had responded positively, an attempt was made to select at least one student from each of the categories of disability. This would follow Patton’s (1987) description of maximum variation sampling. In doing so, this strategy “aims at capturing and describing the central themes or principal outcomes that cut across a great deal of participant or program variation” (p. 53). Should there be no students in any one or more categories wishing to participate in the study, a decision was made as to which students to interview and still attain the highest level of maximum variation possible. Interviews were then arranged and scheduled. No accommodations were requested from any of the students except for the availability of a room with air conditioning.

The students were notified beforehand that the interviews are to be audio-recorded, and they were given the option to remove themselves from the study at that time. It was explained that the tapes are to be coded in a manner known only to me, transcribed by a paid transcriptionist, and that the audio tapes are to be destroyed after accurate transcription and
auditing was complete. In conducting member checking, only four of the seven transcripts were returned by the students.

_procedures for conducting faculty interviews_

The procedure for conducting the faculty interviews began after approval from Institution Y’s IRB had been granted. In addition, an 18-month hiatus was instituted for personal reasons.

At the appropriate time (May 2004), I sent out the letters to eligible faculty requesting interviews (see Appendix B). At the end of the 10 days after they had been given ample time to receive the letter, I separated all the response forms returned to me that indicated a willingness to be interviewed from the others and randomly selected five from those.

Using Patton’s maximum variation technique for sampling (1987), I selected those five individuals to interview based upon their availability at the time to meet during my scheduled visits, as well as randomness across colleges/schools within that institution. Contact was made and a time scheduled to conduct the interview. It was preferable to do this in each faculty member’s office, should privacy and confidentiality be afforded. All faculty members agreed to have the interview in their offices.

Qualitative interviewing is a process that demands a format be pre-defined, based on the constraints of the study itself. I have selected to use the standardized open-ended format for interviewing faculty. In doing so, each person was asked basically the same questions. This is “because it is desirable to have the same information from each person interviewed” and to “minimize interviewer effects by asking the same question of each respondent” (Patton, 1980, p. 202). The format of the questions asked is presented in its final stage in Appendix C and was modified based upon the focus group held with selected faculty from Institution Y. The standardized open-ended format allowed me to make efficient use of the time available for interviewing as well as to make the data analysis easier (Patton, 1990). Probing questions, those meant to “deepen the response to a question, to increase the richness of the data being obtained,
and to give cues to the interviewee about the level of response that is desired” (Patton, 1980, p. 238) can be placed in the interview at appropriate places. In addition, I allowed each interviewee time at the end of the session to speak of anything else related to the study that she or he felt might be pertinent or relevant. They were required to sign the informed consent document prior to any interview that took place.

Each interview was anticipated to take approximately one hour; some took longer; some took less time. The interviews began with a short description of the research study. I took notes during the course of the interview as an enhancement and auxiliary aid to the recorded data. Facial expressions, body language, and other descriptive data that cannot be recorded audibly were noted.

At the end of each interview, I thanked the faculty member and informed her or him that a transcribed copy of the interview would be made available as soon as the transcription was completed. I related that this would allow him or her to make any modifications, corrections, or additions. It also served as a member checking procedure, which will lend credibility to the research.

A written thank-you letter was sent to each faculty member after the interview was conducted, along with a small token of appreciation for his or her valuable time. As a courtesy, once the study is published at the ETSU Electronic Theses and Dissertations web site, I will send the source link or the Adobe PDF file to the faculty members for their perusal.

Procedures for Conducting Student Interviews

As with the faculty, conducting the interviews with the students with disabilities began after approval from Institution Y’s IRB has been granted. At this time, I provided the disability services office at each institution with the letter requesting interviews (see Appendix F) for disbursement to their registered students. Students were asked to return their response form within 10 days. Only affirmative responses were returned.
Using Patton’s maximum variation technique for sampling (1987), I had wanted to select at least five students to interview. Contact was to be made and a time scheduled to conduct the interview. It was preferable to do this in a neutral location, preferably an area provided by the disability services office. Arrangements were made through the disability services office for an acceptable location.

Qualitative interviewing is a process that demands a format be pre-defined, based on the constraints of the study itself. For justification of the chosen method, the standardized open-ended format see the section *Procedures for Interviewing Faculty*.

The student was notified prior to the interview that it was to be audio taped and that the tapes will be destroyed after accurate transcription and auditing had taken place. Should the student choose to withdraw from the study at any time, he or she may do so without any repercussion. Each student was required to sign the informed consent document prior to any interview that took place.

Each interview was anticipated to take approximately one hour; as with the faculty interviews. The interviews began with a short description of the research study. I took notes during the course of the interview as an enhancement and auxiliary aid to the recorded data.

At the end of the interview, I thanked the student and informed her or him that a transcribed copy of the interview will be made available as soon as the transcription is completed. This allowed the student to make any modifications, corrections, or additions. It also served as member checking, which lends credibility to the research.

A signed thank-you letter and a small token of appreciation was sent to each student after the interview had been conducted. As a courtesy, once the study is published at the ETSU Electronic Theses and Dissertations web site, I will send this source to the participants for their perusal.
Study Limitations and Delimitations

As an emergent, qualitative study, I have faced many obstacles from the beginning. Initially, access to the students with disabilities was a primary concern. This sensitive group required methods of access that contributed to significant time delays, multiple attempts to contact the “gateway keepers”, and much frustration at the lack of accessibility. The intended method of acquiring the minimum number of students to conduct a focus group and the interviews did not occur as hoped. The focus group to refine the interview guide was eliminated at my chair’s suggestion, and the students who had responded positively were contacted about an interview instead. In addition, referrals to other students were made via those I spoke with, the transcriptionist, and various faculty members. Without these additional methods, it is highly unlikely that the small number interviewed would have been as high as it was.

The sample group is not representative of any larger population and cannot be classified as such. Therefore, it is not proper to generalize the findings of this research beyond the participants in this study.

This research project initially required me to conduct interviews at a minimum of three TBR institutions. It was imperative that I conduct the interviews with the individuals personally. Telephone interview, surveys, and questionnaires would not have elicited the range and depth of information necessary for a thorough analysis.

The IRB at Institution Y granted approval for the audio tapes made during the interview sessions to be transcribed by a paid transcriptionist. This entailed an additional, and very expensive, financial obligation. Had approval not been given, it would have resulted in massive amounts of time by me to transcribe the audio tapes. The interviews ranged in length from about 25 minutes to about 60 minutes. A limitation, in the form of a financial resource, was imposed. There were additional expenses for travel, meals, and lodging in order to visit the institutions. In addition, there were expenses for postage, supplies, and token thank-you items.
Another limitation of the study involved the age of consent. Interviewing any of the students required that they be at least 18 years of age. Those who agreed to be interviewed were required to sign the informed consent document that states that the participant is at least 18 years old.

Establishing Trustworthiness

Traditional positivist researchers depend upon four primary means to establish the trustworthiness of their studies: internal validity, external validity, reliability, and objectivity (Guba & Lincoln, 1981). In a similar fashion, the qualitative researcher, particularly from the naturalist’s point of view, will employ four criteria that are analogous to that of the quantitative researcher in order to support trustworthiness. These methods are credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). These terms have been altered since the 1981 publication by Guba and Lincoln, who at that time referred to them as credibility, fittingness, auditability, and confirmability.

Credibility

Credibility can be established using any or all of the five major techniques described by Lincoln and Guba (1985): (a) “activities increasing the probability that credible findings will be produced” (p. 301), (b) peer debriefing, (c) negative case analysis, (d) referential adequacy, and (e) member checks. These techniques are “activities that make it more likely that credible findings and interpretations will be produced” (Lincoln & Guba, 1985, p. 301).

Given the restrictions of this study, there are particular efforts that can be made to establish its credibility. First, “persistent observation” should be employed. Whereas prolonged engagement requires an investment of time not affordable to this study, persistent observation is accomplishable. The purpose of persistent observation is “to identify those characteristics and elements in the situation that are most relevant to the problem or issue being pursued and focusing on them in detail. If prolonged engagement provides scope, persistent observation
provides depth” (Lincoln & Guba, 1985, p. 304). The individualistic interviews conducted as part of this study allowed me to focus on the details of the issue under consideration.

Secondly, peer debriefing was used to lend credibility to the study. Peer debriefing is “a process of exposing oneself to a disinterested peer in a manner paralleling an analytic session and for the purpose of exploring aspects of the inquiry that might otherwise remain only implicit within the inquirer’s mind” (Lincoln & Guba, 1985, p. 308). Karen King, director of the Academic Technology Support group at a 4-year public institution, performed the duties of the peer debriefer for this study. Her letter can be read in Appendix I.

Thirdly, member checks were used to add credibility. According to Lincoln and Guba (1985), this is “the most crucial technique for establishing credibility” (p. 314). Member checking, occurring continuously, involves allowing the stakeholders of the research to test the “data, analytic categories, interpretations and conclusions” (Lincoln & Guba, 1985, p. 314). Member checks with the participants were conducted by supplying the transcripts of their interviews to them. This allowed the participants to review their statements for verification, modification, additions, and clarification. They were requested to initial each page after making any necessary notations and return the printed copy to me.

**Transferability**

Transferability in the naturalistic paradigm, in relation to the external validity of a qualitative study, “is, in a strict sense, impossible” (Lincoln & Guba, 1985, p. 316). Instead, the rich data and thick description derived from the interviews were employed to establish transferability. As quoted by Lincoln and Guba (1985), “he or she can provide only the thick description necessary to enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility” (p. 316). Purposeful sampling permitted me to provide the “widest possible range of information for inclusion in the thick description” (Lincoln & Guba, 1985, p. 316).
Dependability

Dependability may be the most difficult of means to accomplish in establishing trustworthiness in a naturalistic inquiry. Guba and Lincoln (1981) proposed several methods and provided reasoning as to why they were not strong enough solutions to the dilemma. Instead, they suggested a technique based on auditing. Essentially, the auditor was required to complete two tasks: (a) examine the process by which the data were acquired and (b) examine “the product – the records – from the point of view of their accuracy” (Lincoln & Guba, 1985, p. 318). These records may include the “data, findings, interpretations, and recommendations” (Lincoln & Guba, 1985, p. 318).

I identified an auditor for this research project who was qualified and able to contribute the time necessary to perform a thorough and complete audit of my material and data. The letter of attestation is included in Appendix J. An auditor’s responsibility is to listen to the tapes of the interviews, review field notes, logs, and other documentation in order to verify that the researcher has developed the appropriate themes and phenomena. The auditor for this study was Dr. Nancy Dillon. Dr. Dillon has experience in conducting qualitative research by virtue of her dissertation.

Confirmability

In addition to attesting to the dependability of a research project, a single audit can also be used to determine confirmability. This is assuming it was properly managed (Lincoln & Guba, 1985). The audit trail, as described by Lincoln and Guba (1985), should include the six categories as defined by Halpern’s algorithm. They are: (a) raw data, (b) data reduction and analysis products, (c) data reconstruction and synthesis products, (d) process notes, (e) materials relating to intentions and dispositions, and (f) instrument development information (Lincoln & Guba, 1985). They noted that the researcher who “keeps such records, suitably coded according to Halpern’s notational system, will have greatly eased his or her own reporting problem.”
(Lincoln & Guba, 1985, p. 319), and in doing so, will make it easier for the auditor to conduct a thorough analysis for attesting to confirmability.

In regard to the selection of an auditor for the process, Lincoln and Guba (1985) stated that, “there may be some utility in waiting until the end to avoid the possibility that the auditor might be coopted” (p. 321). This method could have involved a risk, as deficiencies may not have been recoverable, to the extent that an audit may not have been possible at all (Lincoln & Guba, 1985). Deficiencies could include but would not be limited to inadequate or insufficient data, poor interviewing techniques that do not elicit the type of information sought, inaccurate transcription of interviews, and lack of note taking during interviews.

Analysis of Data

According to Creswell (1998), the phenomenological tradition of qualitative researching “describes the meaning of the lived experiences for several individuals about a concept or the phenomenon” (p. 51), it “[explores] the structures of consciousness in human experiences” (p. 51). In the attempt to answer my research questions, this approach met the needs to answer the proposed research questions. Data analyses for a phenomenological study “proceeds through the methodology of reduction, the analysis of specific statements and themes, and a search for all possible meanings” (Creswell, p. 52). Grounded theory, as defined by Creswell, has the intent of generating or discovering a theory. To conduct grounded theory, the researcher “collects primarily interview data, makes multiple visits to the field, develops and interrelates categories of information, and writes theoretical propositions or hypotheses or presents a visual picture of the theory” (Creswell, p. 56). The best data analysis methodology for this particular research study incorporates the components of both a phenomenological study and, to some extent, a grounded theory study.

The challenges posed by this type of study required an intense effort on my part to place aside all preconceived notions of the two primary participant groups. Having a father who was
disabled for many years before death and being the widow of a disabled person could have been
detrimental to the study had I not succeeded in strenuous efforts to leave any personal bias out of
the research process. The concept of “epoché,” as it is called by Husserl, requires suspension of
“… all judgments about what is real – the ‘natural attitude’ – until they are founded on a more
certain basis” (Cresswell, p. 52). Husserl (1931), in regards to ἐποχή (epoché), said one must be
able to set aside preconceived ideas, biases, or notions about the subject matter and seek the truth
as it emerges from the world of the participants’ themselves. Therefore, it was necessary to be
aware and conscious of my own experiences to avoid clouding or contaminating the data.

Ethical considerations were made when conducting the interviews. My personal
knowledge and life experiences with disabled persons could have been a problem when
conducting the interviews. As stated in The Handbook of Qualitative Research in Education,
“Ethical dilemmas arise with regard to the amount of information that researchers feel they can
or should give out without unduly biasing the information provided by informants” (Deyhle,
Hess, & LeCompte, 1992, pp. 624-625). In practicing to achieve epoché, I had to be inclined
toward receptiveness (Moustakas, 1994). According to Moustakas, the epoché process allowed
me to be:

more readily able to meet something or someone and to listen and hear whatever is being
presented, without coloring the other’s communication with my own habits of thinking,
feeling, and seeing, removing the usual ways of labeling or judging, or comparing. I am
ready to perceive and know a phenomenon from its appearance and presence. (p. 89)

Data analysis of a phenomenological study proceeded as follows:

a) Divide protocols into statements or horizontalization

b) Transform the units into clusters of meaning

c) Create a textural description of what was experienced and a structural description of
 how it was experienced (Creswell, p. 148)
These steps were possible to conduct using the software application Qualitative Solutions and Research Non-numerical Unstructured Data Indexing Searching and Theorizing (QSR NUD*IST) version 4.0, also referred to as NUDIST.

NUDIST is an analytical software application marketed by QSR International PTY Ltd. that is designed to assist the researcher in conducting qualitative analysis. It gives “answers” to the “questions” asked of the data. For this study, the data were comprised of text that was imported from transcribed documents. The process began by coding the data, which in essence is classifying a word, phrase, sentence, paragraph, or more into one or more categories, termed “nodes”. Coding in NUDIST allows the researcher to define the nodes, or elements, which comprise a “tree” of data. Most of the coding was performed on printed copies of the transcripts. However, there were times when I coded directly into the software application.

After an interview was coded into NUDIST, I began on the next. It is at this time that additional themes or categories would emerge. At that point, it was important to review any prior coded transcripts to verify that all nodes were applied properly in the context in which they were meant. Sometimes this would result in re-coding an element of text or adding additional codes. Much repetition was involved in reading and re-reading all transcripts, and oftentimes, adding coding or recoding what had already been defined.

Before any analysis began, I reviewed all the defined nodes and systematically developed a “tree”. Each “limb” of the tree was a major theme or category, and the “branches” it contained were the elements that defined or described the theme or category.

When all the data were coded, the researcher using NUDIST then begins to “ask questions” of the software. This process primarily employed “index searches”. For example, when I was attempting to determine the characteristics of a successful online student as defined by the faculty, I would perform an index search on the nodes “faculty” and each of the other limbs branching off from the category “successful student”. The results of any analysis within
NUDIST are dependant on the researcher being able to correctly and properly identify and code all relevant portions of the data available.

An index search would produce results that include the actual coded text of all items in the database of transcripts, as well as minimal statistics such on how many database items contained that particular combination of index search items and the percentage of occurrences among all database items. At this time, I would reflect upon the results and determine if they appropriately “answered” my question or if more reviewing and recoding of the data were necessary. It is a very iterative and time-consuming process if done correctly.

The intent was for this study to conclude with the reader having a better understanding of the “essential, invariant structure (or essence) of the experience, recognizing that a single unifying meaning of the experience exists” (Creswell, 1998, p. 55). Polkinghorne (1988) said the end experience for the reader should be to come away with the feeling that “I understand better what it is like for someone to experience that” (p. 46). Should this research project have accomplished that, I will feel as though a service has been supplied to the faculty who develop the Internet-based courses, and to the students with disabilities.

Data analysis of a grounded theory study would proceed as follows:

a) Collect interview data until all categories are discovered. A category is defined as “…a unit of information composed of events, happenings, and instances” (Creswell, 1998, p. 56)

b) Analyze the data, return for more, and allow emerging categories to arise

c) Proceed with constant comparison of the data for analysis

The constant-comparative data analysis method allowed for “continuous and simultaneous collection and processing of data” (Lincoln & Guba, 1985, p. 335). In Naturalistic Inquiry (1985), Lincoln and Guba expounded upon this particular method, as defined by Glaser and Strauss. In essence, there are four primary stages involved in the constant-comparative
method, with the purpose being to derive a theory, not just process data. The four stages, which are further defined and explained as implemented in Chapter 4, are: (a) compare the incidences applicable to each category, (b) integrate the categories defined in stage 1, (c) delimit the theory, and (d) write the theory (Lincoln & Guba, 1985). The end result of grounded theory research should be a substantive-level theory, “written by the researchers close to a specific problem or population of people” (Creswell, 1998, pp. 58-59).

Constant-comparative analysis is intended to reveal a structure (or essence or form) regarding the phenomena. Valle and King (1978), from their psychological perspective, explained the structure as “a basic foundational concept…. Phenomena, as they are present to us, seem to reveal themselves in different ways depending on how we look at them or ‘take them up’ in our many, varied perspectives and life situations” (p. 15). They further expounded: “Regardless of which of the phenomenon’s particular variations is revealed at any given time, this phenomenon is seen as having the same essential meaning when it is perceived over time in many different situations” (p.15). It was my desire to discover that essential meaning from the perspectives of the faculty members and the students with disabilities.

Data analysis included the ability to code it for applicable usage with the NUDIST software application.
CHAPTER 4
PRESENTATION AND ANALYSIS OF THE DATA

The purpose of this emergent, qualitative study was to discover the important factors, as defined by the perceptions of faculty, as they plan, design, develop, implement, and evaluate Internet-based courses that are appropriate and accessible for students with disabilities. In addition, it was necessary to define the perceptions of students with disabilities regarding Internet-based courses. The study proved to be so emergent that refinement of one of the original research questions was necessary during the course of data analysis.

All interviews were transcribed by a professional transcriptionist. A signed confidentiality contract is included in Appendix L.

Presentation of the Data

All the data were gathered via personal, audio-taped interviews using standardized, open-ended interview guides for the faculty as well as the students. The gathering of the faculty data proceeded as follows.

After obtaining IRB approval, I used the course catalogs from Institution Y to determine all Internet-based courses that were taught during the spring 2001 through fall 2002 semesters including the summer session. In doing so, a list of the faculty who taught those particular courses was developed. A total of fifty individuals were contacted by mail. Of the total 33 persons responding, 28 answered positively with a willingness to be interviewed or participate in the focus group, and 5 declined for a variety of reasons. After the focus group was conducted, a letter requesting an interview was sent to all these qualifying persons who had not participated in the focus group session. From the original list of persons, six participated in the focus group, leaving 44 individuals who received the request to interview letter. These letters were sent out in
fall 2003. Twenty-five faculty responded. Twenty-three of those agreed to be interviewed for the study and two declined.

During April 2004, each individual who had previously responded positively was categorized based on the college or school of which he or she was a member. I purposely selected one each from five different colleges/schools and made contact once again via email. Four of those persons agreed to be interviewed and schedules were arranged. One individual declined at the time and referred me to another person within his department who had extensive experience teaching Internet-based courses. Attempts to contact this individual were unsuccessful. However, one person interviewed referred me to a colleague who did accept my invitation. Ultimately, there were five faculty members interviewed at Institution Y. Of those, three were males and two were females. The two males each had fewer than 10 years of total teaching experience, and the remaining three each had over 25 years teaching experience, for a total of 102 years! The longest any of the subjects had been teaching Internet-based courses was five years, and the least amount of time any had been teaching the courses was 1½ years. Two of the faculty members had taught both undergraduate and graduate-level Internet-based courses. Two of them had had one registered student with disabilities in one Internet-based course. These responses were based on the student practicing self-disclosure. The individuals represented four different colleges/schools within the institution: College of Public and Allied Health, College of Nursing, College of Arts & Sciences, and College of Business and Technology. All faculty members interviewed were of the Caucasian ethnicity.

The list of qualifying faculty at Institution X was developed with the assistance of their Director of Institutional Research. It was sent to me in October 2003 in the form of an Excel Spreadsheet. In April 2004, letters were prepared and sent to all faculty on the list. There were a total of 16 letters mailed, representing five colleges/schools at that institution. Eight individuals responded to the request. Positive responses were received by six individuals; however, one indicated that his availability for being interviewed would not be within the time frame in which
I would be able to conduct interviews. Another individual indicated that she was not sure if she would be around on those dates, and that I should call her when I arrived on campus. Affirmations for interview dates and times were confirmed via email with four faculty members at Institution X. Upon arrival, the fifth interviewee was contacted and a scheduled time was arranged. Those chosen and agreeing to the interview represented two colleges/schools at the institution. They are the College of Arts and Sciences and the School of Nursing. There were three different departments within the College of Arts and Sciences represented.

Ultimately, there were five faculty members interviewed at Institution X, also. Of those, two were males and three were females. Only one faculty member had fewer than 10 years of total teaching experience, and the remaining four had 10 or more years of teaching experience, for a total of 124 years. The longest any of the subjects had been teaching Internet-based courses was four years, and the least amount of time any had been teaching the courses was one year. Two of the faculty members had taught both undergraduate and graduate-level Internet-based courses. Only one of them had had any known registered student with disabilities in one of their Internet-based courses. This was based on student self-disclosure. Four of the faculty members interviewed were of the Caucasian ethnicity, one was of Asian descent.

A list of qualifying faculty members at Institution Z was developed with the assistance of their Assistant Vice-President for Information Technology and Chief Information Officer and one of the staff members of the Information Technology Division. The same criteria were used to derive the data. The file I received in January 2004 contained a listing of all Internet-based courses taught during the spring 2001 through fall 2002 semesters summers inclusive. The file contained 239 records. The list contained the faculty member’s name and the originating department of the course. There were many duplicate entries of names because several faculty members had taught more than one course during the specified time frame. I manipulated the data to have unique entries based on each individual’s name. This resulted in 69 unique records. In addition, I researched the faculty members on the institution’s web site in order to determine
the appropriate title of each. During the time period that had elapsed since receiving the data, five persons had left the employment of the institution. The remaining 64 individuals were sent letters requesting an interview during a specified time period. A total of twenty-nine persons responded. Of those, six declined to participate for various reasons, six persons agreed to be interviewed but returned the forms too late to be included in the selection, and 17 agreed to be interviewed and returned the forms within the requested time frame. After sorting out the affirmative responses, I randomly selected five entries to begin. After choosing one from a college/school within the institution, I would relegate the next entry from that same college/school to a different section and not use that entry. The purpose was to maximize the variation of individuals selected to the extent possible. A few others selected had noted that they would not be able to meet with me during the time period I had scheduled to be on their campus. Ultimately, I drew 11 forms in order to identify seven individuals to contact. After this process was complete, all the faculty were contacted via email. Interviews were scheduled using email and phone calls with the seven selected persons. They represent six colleges/schools: Office of the Provost, College of Education and Behavioral Science, College of Liberal Arts, the School of Journalism, the School of Nursing, and the College of Business.

Getting the students with disabilities to interview was quite a challenge. To begin with, a group of letters was sent out to attempt to hold a focus group. Thirty letters were distributed via the disability services office at Institution Y. There were only three positive responses. The focus group was eventually eliminated, and those three were reviewed as potential interviewees. In the interim time period, two had graduated. I then distributed 30 more letters via the same office. Again, only three individuals responded affirmatively. Interviews were conducted with these students after much effort. I had to meet on their schedule so that no classes were missed, I had to reserve a room that would insure confidentiality, and I had to take vacation leave from work to hold the interviews. One student canceled the first two times we had arranged to meet, the third
time there was some confusion in the time we had arranged and it had to be rescheduled. Finally, on the fourth attempt, we were able to get together to conduct the interview.

Shortly after sending the letters to Institution Y students, I mailed a package of 30 more to the disability services office at Institution X. Again, there were some positive responses. Two of the five would not be able to meet me during the allotted time frame. The other three were contacted and arrangements were made. There was travel involved to this institution, I wanted to be sure everything went smoothly. However, the first student scheduled never showed up for the interview, and I was unable to reach this person by phone. The next student met me at the correct time and day and an interview was conducted. The third student was about 20 minutes late but again, the interview was conducted as planned.

A similar package of materials was sent to the director of the disability services office at Institution Z shortly before leaving town for the trip to Institution X. A few days later, the package was returned accompanied by a letter from the director. I was informed that there were no students at that school who met the criteria I was using. However, the criteria were the same for all the institutions. This package of 30 letters was subsequently distributed by the disability services office at Institution Y. It produced only 3 more positive responses. On one, the student had indicated that she preferred to be contacted by postal mail. I developed a letter requesting an interview, suggesting a time and place, and included all my contact information. I never received a response from that individual. The other two students were contacted and agreed to an interview. We arranged a meeting time and place and those two interviews concluded the seven that I was able to conduct with students with disabilities.

After receipt of the transcriptions, I listened to each audio-recording at least two times. The first was an attempt to fill in any gaps in the transcription of the interview that were not understood by the transcriptionist. The second was to record the total length of the interview. The faculty interviews ranged from 21 minutes to 59 minutes in length, with the average time
being 40 minutes. Interviews with the students ranged from 20 minutes to 47 minutes in length, with an average time of 36.5 minutes.

Table 7 depicts the basic demographic data of the faculty members interviewed. Maximum variation was attempted, but selection prohibited a wide variation of ethnicity because no data on this fact were requested before the interview. Table 8 depicts the basic demographic data of the students interviewed.
## Table 7

### Demographics of Faculty Participants

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Race*</th>
<th>Gender</th>
<th>YT**</th>
<th>YTI*</th>
<th>Type of Course**</th>
<th>Internet SWD*</th>
<th>Traditional SWD**</th>
<th>Institution</th>
<th>Discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aileen</td>
<td>C</td>
<td>F</td>
<td>37</td>
<td>5</td>
<td>B</td>
<td>0</td>
<td>Y</td>
<td>Y</td>
<td>Nursing</td>
</tr>
<tr>
<td>Ann</td>
<td>C</td>
<td>F</td>
<td>7</td>
<td>4</td>
<td>U</td>
<td>1</td>
<td>Y</td>
<td>Z</td>
<td>Nursing</td>
</tr>
<tr>
<td>Ben</td>
<td>C</td>
<td>M</td>
<td>3</td>
<td>3</td>
<td>U</td>
<td>1</td>
<td>Y</td>
<td>Y</td>
<td>Health Related Professions</td>
</tr>
<tr>
<td>Betty</td>
<td>C</td>
<td>F</td>
<td>44</td>
<td>3</td>
<td>U</td>
<td>0</td>
<td>N</td>
<td>X</td>
<td>Nursing</td>
</tr>
<tr>
<td>Cary</td>
<td>C</td>
<td>M</td>
<td>5</td>
<td>1.5</td>
<td>B</td>
<td>1</td>
<td>?</td>
<td>Y</td>
<td>Technology and Geomatics</td>
</tr>
<tr>
<td>Don</td>
<td>C</td>
<td>M</td>
<td>38</td>
<td>3</td>
<td>U</td>
<td>0</td>
<td>Y</td>
<td>Y</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Justin</td>
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<td>M</td>
<td>29</td>
<td>3</td>
<td>U</td>
<td>0</td>
<td>Y</td>
<td>Z</td>
<td>Business Education</td>
</tr>
<tr>
<td>Kenny</td>
<td>C</td>
<td>M</td>
<td>10</td>
<td>3</td>
<td>U</td>
<td>0</td>
<td>Y</td>
<td>Z</td>
<td>Developmental Studies</td>
</tr>
<tr>
<td>Lance</td>
<td>I</td>
<td>M</td>
<td>10</td>
<td>2</td>
<td>U</td>
<td>2</td>
<td>Y</td>
<td>X</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Larry</td>
<td>C</td>
<td>M</td>
<td>30</td>
<td>2</td>
<td>B</td>
<td>0</td>
<td>Y</td>
<td>X</td>
<td>Sociology</td>
</tr>
<tr>
<td>Lee</td>
<td>C</td>
<td>M</td>
<td>25</td>
<td>8</td>
<td>U</td>
<td>0</td>
<td>Y</td>
<td>Z</td>
<td>Journalism</td>
</tr>
<tr>
<td>Lynette</td>
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<td>32</td>
<td>3</td>
<td>B</td>
<td>0</td>
<td>Y</td>
<td>X</td>
<td>English</td>
</tr>
<tr>
<td>Nancy</td>
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<td>F</td>
<td>13</td>
<td>1</td>
<td>U</td>
<td>0</td>
<td>Y</td>
<td>Z</td>
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</tr>
<tr>
<td>Rachel</td>
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<td>F</td>
<td>14</td>
<td>3</td>
<td>G</td>
<td>0</td>
<td>Y</td>
<td>Z</td>
<td>Elem. and Special Education</td>
</tr>
<tr>
<td>Sheila</td>
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<td>F</td>
<td>27</td>
<td>4</td>
<td>U</td>
<td>0</td>
<td>Y</td>
<td>Y</td>
<td>Technology and Geomatics</td>
</tr>
<tr>
<td>Sylvia</td>
<td>C</td>
<td>F</td>
<td>&gt;20</td>
<td>?</td>
<td>U</td>
<td>?</td>
<td>?</td>
<td>Z</td>
<td>English</td>
</tr>
<tr>
<td>Tammy</td>
<td>C</td>
<td>F</td>
<td>8</td>
<td>1</td>
<td>U</td>
<td>0</td>
<td>Y</td>
<td>X</td>
<td>English</td>
</tr>
</tbody>
</table>

* Race: C-Caucasian, A-African-American, I-Indian/Middle Eastern
** Total number of years teaching
* Race: C-Caucasian, A-African-American, I-Indian/Middle Eastern
** Total number of years teaching Internet courses
** Total number of years teaching Internet courses
** Type of Internet courses taught: U-Undergraduate, G-Graduate, B-Both
** Total number of students with disabilities in Internet courses
** Faculty had a student with disabilities in a traditional course
Table 8

Demographics of Student Participants

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Race</th>
<th>Gender</th>
<th>Status</th>
<th>Type of Course</th>
<th>Internet Courses</th>
<th>Institution</th>
<th>Nature of Disability</th>
<th>Discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice</td>
<td>C</td>
<td>F</td>
<td>U</td>
<td>U</td>
<td>2</td>
<td>Y</td>
<td>Visually Impaired</td>
<td></td>
</tr>
<tr>
<td>Andy</td>
<td>C</td>
<td>M</td>
<td>U</td>
<td>N/A</td>
<td>0</td>
<td>X</td>
<td>Speech Impediment, Learning Disability</td>
<td>Pre-Physical Therapy</td>
</tr>
<tr>
<td>David</td>
<td>C</td>
<td>M</td>
<td>U</td>
<td>N/A</td>
<td>0</td>
<td>Y</td>
<td>Dyslexia</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Dharma</td>
<td>C</td>
<td>F</td>
<td>U</td>
<td>U</td>
<td>5</td>
<td>Y</td>
<td>Dyslexia</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Gina</td>
<td>C</td>
<td>F</td>
<td>U</td>
<td>N/A</td>
<td>0</td>
<td>Y</td>
<td>Medical Disability</td>
<td>Social Work</td>
</tr>
<tr>
<td>Greg</td>
<td>C</td>
<td>M</td>
<td>U</td>
<td>N/A</td>
<td>0</td>
<td>Y</td>
<td>Medical Disability</td>
<td>Psychology</td>
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<tr>
<td>Rosa</td>
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<td>F</td>
<td>G</td>
<td>N/A</td>
<td>0</td>
<td>X</td>
<td>Medical Disability</td>
<td>Elementary Education</td>
</tr>
</tbody>
</table>

* Race: C-Caucasian, A-African-American
  * Status: U-Undergraduate, G-Graduate
  * Type of Internet courses taken: U-Undergraduate, G-Graduate, N/A-Not Applicable
  * Total number of Internet courses taken
Analysis of the Data

An analysis of the data presented below focuses on the various topics, ideas, themes, and phenomena that emerged during the interviews. In addition to answering the research questions proposed in the study, many other valuable pieces of information were gleaned. It is my opinion that the majority ranked high enough in importance or relevance to mention in this chapter. Analysis was conducted with the assistance of the NUDIST 4.0 software package.

All interview transcripts were originally coded, either on paper first or within the software application, with selected text being defined as Free Nodes. There were originally 163 Free Nodes developed. These were then analyzed and re-categorized into an Index Tree containing 17 primary nodes. At the time, these were not finite, as themes and categories emerged during the analysis and re-reading of the transcripts. Eventually, I concluded the analysis with 15 primary nodes in the Index Tree, with four of those focusing on the research questions presented in this study. These 15 nodes had a total of 170 sub-nodes associated with them. The remainder related to important themes and topics that emerged during continual analysis.

During analysis, NUDIST reports would generate data that appeared to be unrelated to the query. This involved re-reading the interview to validate the context in which the coding was developed, and often times, re-coding it to the applicable node. This was a very iterative process and consumed many hours of rearranging nodes, re-coding data, and re-reading many parts of the interviews. This was a necessary activity that represents the constant comparative method of data analysis. Approximately 100 intersecting Index searches were conducted during the analysis.

In the ensuing discussions, all participants have been given first name pseudonyms in order to preserve their confidentiality.
Extent of Student Participation

To what extent are students with disabilities participating in Internet-based courses?

Being Research Question #1, this query was an integral part of the study. In order to determine this, I asked questions of both the faculty and students.

Faculty Members’ Awareness of Students with Disabilities in Online Courses

Less than one fourth of the faculty interviewed stated that they had ever had a student with disabilities in any of their online courses. Out of 17, only 4 mentioned having had a student with disabilities in at least one of their online courses.

As shared by one faculty member, “…but in the online nobody has ever notified me and no student in advance has ever said anything.” Many other faculty members stated basically the same information, as shown by these responses: “In my Internet courses? None.”, “On campus, yes, but not online.”, “Not that identified themselves.”, “…if the Internet guys had challenges, they never let me know.”, “No. The class was only offered one time online, and if they had some type of handicap, it was not something that I was aware of or that could be seen physically.”, “… in fact I never have had a student with a disability taking any of my courses because of the fact that they are nurses.”, “I haven't had an online student with special needs.”, “I have never had anyone in the online classes do that… But, as I say, I have not run into anyone like that on my online class.” If this small sample were truly indicative of the student participation, it appears that there is very little of it occurring at this time.

The majority of faculty members who did have students with disabilities in their classes spoke of the accommodations requested. For example, Ben told me,

As far as declared students, in other words, I’ll define that as a person who has gone to Disability Services and has declared a disability and I get a formal letter back from the service stating that they need reasonable accommodation under the ADA 504, IDEA. I’ve only really had one person in that, in a class. And her need for accommodation was more regarding testing anxiety, and so, I did not get much feedback from that student. But, I did have at least one.
Others stated that, though not presenting a letter of accommodation, they were informed by students that accommodations were needed. One professor, when asked, said, “I know I had a couple. …they just told me”. Cary shared,

I have had students with disabilities, that have declared disabilities anyway, take the course. Most of them were some form of a learning disability, so what we do for testing purposes is arrange for a proctor to give them the extra time necessary to take the test.

Ann spoke of also having a student with a learning disability in her online class. Her response was,

I’ve had students with documented learning disabilities in the fact that they needed extra time to do things. That was their official accommodation that was done, and that with the learning management system that we use, with WebCT, that’s easy to accomplish because you can create mirrored exams and give it to those students, giving them more time to take that.

The last faculty member to say there was a student with disabilities in his class provided accommodations without having been presented a letter. I asked Lance how he knew they had disabilities. Our conversation was,

Lance: I know I had a couple.
JK: Did they have the registered letter, or did they just inform you?
Lance: No, they just told me.

A few of the faculty, without prompting, attempted to answer the question “Why?” In other words, they were trying to provide a reason why students with disabilities are not signing up for their online courses. One of the responses I received was from Ann, a faculty member teaching a nursing course. Ann said,

There are some physical requirements for a nursing student in the first place. You can’t, unfortunately, you can’t be a blind nurse, because you don’t have those basic necessities of being able to do the skills in that particular area.

Similarly, another nursing faculty member, Betty, explained that certain disabilities would prohibit a student from obtaining a nursing license; therefore, the chances of those students taking nursing courses were relatively slim. She elaborated,
Well, let me say first that, you know, I have not had a student who has had visual impairment or hearing impairment, that would preclude them from, you know, taking an on-the-ground course or taking an online course. It would be very difficult to communicate with the patient if you had real hearing kind of dysfunction. Without hearing, well, now you could because of all the technology, but up until just, I’d say in the last four or five years, no you couldn’t. Before you had the digital. But, you know, so much of nursing and medicine is observation of the patient’s condition. Well, if you can’t see, you can’t do that.

Another explanation I heard was from a developmental studies math teacher, Kenny, who actually told me before I could ask why he thought it was so. What he told me was, And let me tell you why I think that’s the case. Um, our online students are screened. We, they go through a survey. It’s where they, we kind of ask them certain questions, are you a self motivator, are you—we ask them so… it kind of weeds out students that are a little maybe a little afraid of math or have that, they know that they have that barrier. And, I think a lot of students are cognitive of their abilities, and the student that has those disabilities, many times, they feel that they need that teacher in the classroom in order to get through the class.

One business professor, Justin, shared his thoughts with me. They are very much in line with what this research is all about. He stated, “Perhaps students don’t, who have those types of disabilities would not sign up for the class. I don’t know what the explanation would be, but I have not run into that.”

Most of the faculty members, 14 of the 17 interviewed, stated they were aware of students with disabilities in their traditional classrooms. Some were cognizant of the fact because they were presented with a letter of accommodation by the student. Others talked about being able to see the physical disability of a student, but that many of the students had not requested any accommodations at all. In probing beyond the standard research questions and asking about students with disabilities in traditional classes, the majority of accommodation requests were for extra time, specifically for students with documented learning disabilities. For example, Larry told me,

I would say most, most of them have been students who probably I would say, not so much physical. I mean, there’s such a line between physical and other. But, the people who, who just need more time. That seems to be what I get most often are students who just need more time with their exams.
This explanation was given by Betty. She said,

We had one student who… as being dyslexic but just in reading struggled and so what we did with him was that he could take his computer to the clinical area because he had a terrible time with spelling and grammar and this sort of thing, so which made charting very difficult. So, the faculty used, he was able to do his work on the computer where he had some assistance in spelling…

Other faculty members made very short responses regarding the traditional students. Some of the descriptions I received were, “One individual needed to be up front because of hearing problems.”, “It was mostly learning-disabled students that needed extra time on their tests.”, “The impaired students I’ve had in the last, say, four years, and I haven’t had many, probably three or four at the most.”, “… you just very, very rarely, if ever, will see a disabled student, nursing student with some type of a physical disability. Now, again, learning disabilities are certainly a possibility.”, and “But, all I get is just a letter that says this person needs double time or needs a reader or needs somebody, and I just sign off on it.”

Some faculty were more descriptive in their interactions with the students in the traditional environment. Nancy shared this,

I’ve had some with some sight impairments, not necessarily totally blind, but just some impairments as far as sight. Those are basically the ones, some that are just a little bit slower and so they may need a little more time when notes are being given and so forth.

Kenny described a blind student and how he dealt with teaching graphs,

But, I have had a blind student in a calculus class I taught several years ago. Fortunately he was a very bright student, but I did learn ways to, at that time I don’t think I even knew what the Internet was. But, I, I did make—I would—I’m just going to show you this. What I would do is I would take a stack of paper and I would draw the graph, and I would mash in a little bit tougher and I would draw a mirror image of the graph. And, so if I knew the parabola was supposed to be over here I would draw over here and then I would turn it over and then he could feel, he could feel it.

A singular experience that was shared with me involved a medical disability. This is what I was told by Lynette,
Another student, however, was somewhat of a problem. He had Turrette’s Disease. If I’m pronouncing it right. And, he would yell out things in class. At first the students did find them funny, because some of the things he yelled out were funny. After a while, several students came to me individually and complained. That became a problem, because I was not at liberty to tell them that he had Turrette’s Disease.

**Student Responses to Participation in Online Courses**

There were seven students interviewed. Five of those attended Institution Y, the other two were enrolled at Institution X. As stated in the interview guide, one of the questions asked of them was, “Have you ever taken an Internet course?” Two of the students had actually taken more than one, one student had been enrolled in classes that had a web-based component but were not wholly online. The other four students stated they had not participated in any online courses.

The two students who had taken Internet courses supplied me with wide and varied explanations of why they had done so. Interestingly enough, none of their reasons had to do with their particular disability.

One of those two, Alice, was blind. She had taken two courses via the Internet. Underlying her basic reasoning, she did state that it could be a “pain” to get to campus because she didn’t drive. However, that was not the primary reason she enrolled, nor the reason she enjoyed them so much. Alice’s comments were,

I liked doing the Internet classes, especially if I’ve got a lot of other hours because they’re not as time consuming as actually going to the class, and being a senior I was just ready to try something new, so I took the Intro to Public Relations. That’s what it was. And, it was interesting. I liked it.

The other online course she had taken was Introduction to Mass Communications. When asked why she decided to take it by that delivery method, she stated, “I did that one online because I had just had my little girl and didn’t want to go to class all the time.”

Dharma has had the most experience with online courses. She has taken at least five, ranging in topics from Astronomy to JAVA Programming. Dharma expressed a real interest in
the online courses, regardless of the dyslexia that makes reading and writing difficult for her. The disability services office at her home institution often prepared the material on CD, which she then used with her “reading software” at home to listen to the short stories in British Literature and other such topics. Many of the classes she had provided the text books on CD, also. Her courses were a mixture of campus-based and RODP classes. Dharma’s desire to take more classes is evident in her hopes to obtain a master’s degree. She said,

I’m wanting to get my own Master’s degree, and I have really been thinking about online Master’s degrees. I don’t want to go into one that I have to write a dissertation or anything because that’s something that I can’t do. I don’t know if there is [anything]… But, I would like it, yeah.

One young man interviewed, Andy, a pre-physical therapy major, had not taken any Internet courses. However, he had participated in some that contained a web-based component. His disabilities were a speech impediment and a learning disability. When asked why he had never taken an online course, he explained, “I, let’s see. Personally I would like at some level a student to the teacher interaction cause I like things to be in the physical most of the time”. We discussed learning styles at that time, then he was asked whether his preference for traditional classes had anything to do with his disability. His response was an emphatic, “No”. Later in the interview, he discussed his chosen career field. This also had some bearing on his decision not to take Internet courses, given the choice. Andy said,

… because if you choose to—if you choose to continue with that field and go on to graduate school and have that as a job, then you’re going to be dealing with other individuals in person and not like, like be new to technology with like doctors and surgeons …”

The socialization afforded in a traditional class environment would allow him to interact with others, thus providing him with the skills that would be necessary in that profession. In addition, this student also shared that a traditional environment would be beneficial to him in relation to his speech impediment. He said, “… it allows me to interact and to help on my
speaking to other people. And, I like that.” This young man preferred to take the traditional courses, risking being made fun of or ostracized, in order to improve his speaking ability.

Greg had enrolled at his institution as a transfer student. He is majoring in psychology. Diagnosed with multiple sclerosis, Greg often had difficulty with balance, vision, hearing, and manual dexterity. He expressed a real desire to be able to take classes online. When questioned about why he had not registered for any, his response was, “Well, because Vocational Rehab told me they wouldn’t pay for Internet courses. But, it’s Veterans’ Vocational Rehab, so… That’s what I was told.”

In an effort to determine the reasoning behind this, I contacted the Director of Veterans’ Affairs at his institution. I was informed that each case manager makes the decision on an individual basis, and that he was aware of several students who were currently enrolled in online classes. There were some stipulations involved in each case that the manager would have to take into consideration. I relayed this information to Greg in the hopes that he would work with his case manager to reach an informed decision.

I asked Greg if he would take an online course, if his tuition was covered by Veteran’s Vocational Rehabilitation. Emphatically, he told me that he probably would, because,

Most likely. Most likely. It would give me a chance not to have to walk around up here… Sometimes it gets to be a hassle. I’ve been—now, they bought me a computer so that I wouldn’t have to come up here and use the computer lab, but…

David, a computer science major, has not taken any online courses, either. His explanation, however, was much different from Greg’s. Like Dharma, he also has dyslexia. The problems he has with reading and writing have kept him away from this delivery method. He shared,

Because I’m dyslexic, and I don’t always understand everything that I read. And, I misunderstand a lot of things that I read. An intensive course like an online course would be very difficult for me… There are different types of dyslexia, and different degrees. And, actually mine, sometimes I read just fine and understand, but by the end of the day when I’m tired and stuff it’s almost impossible for me to
read.

David has methods that he uses in order to learn in spite of his dyslexia. He often tapes the lectures, listens to them multiple times later at home, and takes notes while he listens to the tapes. His disability affords him certain accommodations from the faculty that he will occasionally employ. These will be discussed in more detail in later sections.

Rosa also was functioning with multiple sclerosis. She was the only graduate student interviewed and an education major. Having explained before the interview began that she had taken no Internet courses, she talked to me about how much easier it could be on her physically and offered the following,

Well, I would like to because it would benefit me. It would help me out so much if I didn’t have to, you know, get dressed and deal with the heat and come [to campus], and confront the heat and so forth. Because at night—well, excuse me, during the—before the class begins I have to lug all my books and everything and my purse and it would just cause me to become more energetic in the classroom setting… That can really wear me out… And that’s why I really want to have an online class, where I can control my temperature in the room.

Later, we discussed the possibility of taking some of her graduate education courses online. She was interested for the sake of her physical well-being but at the same time had some reservations because of the nature of the discipline. Rosa explained further,

But, now courses where—in education they have courses where you, it’s very important for you to interact with the people… Now, in that case you, it’s important for you to, um— it’s very essential for you to work with other people, you know. And, so, in that case, I’ll go to class for that. And, in fact, that’s what I’m in—I’m in one class right now at middle school, with Dr. Thistle, and, we do a lot of work where we work with each other and so forth.

Rosa did allow during the interview that the seminar-type of course would be most appropriate in her field for the Internet environment. It does not require the kind of personal interaction needed between classmates or between the students and those in the field schools. It would provide her with a means to meet that requirement from the comfort of her own home where she would be able to control the ambient environment and not cause undo exertion by traveling to and from the traditional classroom environment.
Gina is a social work major who had suffered a traumatic brain injury about nine years before. She has not taken any online courses, either. Her reason has nothing to do with her disability, though. When asked why she had not participated in any, she told me simply, “I don’t have the self-discipline”. Gina recognized in herself the lack of a characteristic that was almost unanimously listed during this study as a requirement for successfully completing an online course. Gina further explained, “I need to be in—I know I need to be in class to get it, because if it’s left up to me to do on my own, it’d be a disaster. I wouldn’t ever get it done.”

I probed more and asked her where she found out this might be important, perhaps from other students? She told me, “It’s just something that I think.”

To summarize, the extent of participation in online courses by students with disabilities appears to be almost non-existent. When one considers that one of the institutions involved in this study had over 500 registered students, but only a handful of the faculty had ever been presented a letter, lack of participation is evident. Unfortunately, the nature of this sensitive group of students does not allow perusal of registration records. There is no scientific method available to a student like myself to obtain the quantitative data. However, interviews with the students illuminated a few of the reasons why participation appears to be so low. In fact, many of the faculty admitted that they may have had a disabled student in an Internet-based course but just were not made aware of it. A few of the answers I received from faculty when I asked if this was a possibility were, “I may have had a student in a class that had disability but I didn’t know it.”, and “I wouldn’t know one way or the other.”

*Faculty Responses: Minimal Skills: Abilities, and Knowledge Needed*

During the course of the interviews, I attempted to determine the minimum skills, abilities, and knowledge that a student with disabilities would need in order to successfully complete the course(s) taught by the faculty members. This is proposed as Research Question #2 of the study.
There was little variation, and I was somewhat surprised by the number of faculty members who informed me they would be no different for any student taking the class. The two students who had taken online courses basically agreed with the faculty.

Rachel and Lee were married, unbeknown to me until I interviewed the first of the two. Rachel, uniquely qualified as a faculty member to discuss this subject, has a severe vision problem and uses a screen reader in her office. She has been teaching Internet courses for about three years. Husband Lee has been teaching them for almost eight years, longer than any of the other faculty members I interviewed. When I quizzed Rachel about the skills, abilities, and knowledge her online courses required, she told me,

I used a listserv. Basically, all my students would have to do is know how to use e-mail and the one direction to enter and leave a listserv. Now, teaching as I did with the RODP and following my university’s guideline, I need to use WebCT. That’s what the state’s adopted. That involves other skills in terms of how to access it through the university. There’s discussion boards. There’s threads. There, it’s, just following that whole—it’s more complicated. WebCT is much more complicated. There are advantages, but in terms of … their skill level has to be higher.

I can only speak from personal experience, and that’s and that’s fine in the transcript, that would be the visual… with visual disabilities if you had those minimal skills you can do an online course. However, with the WebCT that’s an additional learning curve that is significant. I didn’t say you couldn’t do it, but you, there’s just a lot—when you can’t see the screen and you’re not mousing through it, there’s additional skills you have to know to find things. And, I still have trouble with WebCT. In fact, I don’t do a lot of it.

Rachel’s courses were designed primarily for the content, not the “bells and whistles” that modern media technology can supply. She included no fancy graphics or sound clips and no streaming video. In fact, she iterated the importance of the content more than once during our conversation. She elaborated,

Because I’m–you know, again, I–they’re simple. They’re straightforward. One thing I’ve learned through others who are more tech savvy than myself is I don’t have a lot–there’s not a lot of fancy stuff in mine. It’s straightforward. The purpose of my courses are content. It’s about becoming an early childhood teacher, so I’m not there to teach tech. And, so, since I’m not… the GTW, the girl tech wizard, my courses are very straightforward. I mean, “here’s the question, here’s where we go for our responses”.

… I try those strategies, but there’s no fancy stuff. I’m not into, a lot of, I think they’re called frames. I don’t use frames. I’ve learned, there’s not a lot of fancy graphics.
If there are pictures, they are only there to promote the content. There is no decorations, which I understand, although I can’t see them, a lot of people jazz them up a lot. And, while it may be entertaining, that adds complexity. For example, for the visually impaired person, you don’t put graphics on unless you have provided a description of the graphics. And, from what I hear, that doesn’t always occur. You know, it’s difficult when you’re using a speech software program to navigate a screen. And, so, you wouldn’t have to do that in my class. You just go right through. … if I can do it, anybody can do it.

Rachel exemplifies the mind-set of a successful online teacher. Her understanding of the importance of the students’ ability to grasp the material is simple yet solid. She had a very easy-going manner, was calm, knowledgeable, and expressed concern that her students learn from her courses.

Lee teaches a Media Law class on the Internet. Many years ago, he approached the administration in his department and stated they needed to make this available to students via the Internet. Upon developing his class, Lee also followed Rachel’s philosophy that content is the prime target, not looks of the course. In essence, he states that the minimal skills, abilities, and knowledge require for the course would be the same for a student with disabilities as it would for any other student. Lee told me,

We try to make the courses ADA compatible, so a disabled student would need the same skills as anybody else. They need something beyond basic Internet familiarity. They need to be comfortable using e-mail, the Internet, World Wide Web. We don’t expect them to be programmers, but we expect them to be very comfortable using e-mail for my course in particular… But, the way I teach the course it’s all e-mail-based, well, a syllabus is there. Blind students have readers that can pick that up. The course, the law course is conducted all via e-mail, so a student doesn’t need to figure out how to get into WebCT or any other program. Their standard e-mail program will work… The content is what counts, so it was basically the syllabus. Then, since I wouldn’t be lecturing to a brick and mortars class I found readings, law cases, law review articles that talked about what I would have talked about in class, and merely linked to those. So, it was automatically ADA compliant.

Many of the other faculty members stated that basic computer skills would be required of any student taking their courses. In addition, there were some prerequisites for a few of the courses. Reading, comprehension, and assessment of materials are some of the other skills and
abilities necessary. Tammy teaches an English Comprehension class online. Her description of what is necessary in a student was very thorough. For example, she said,

Well, first of all, the student should have taken English 1010 or 1020, meaning that they should have basic writing skills. And, this may sound kind of weird, but I’ve noticed that a lot of students don’t seem able to follow directions very well. And, I’m not sure if I need to be doing something differently or whether the students need to be doing it differently. But, they need to be able to read the information that I post online, assess it, and then be able to follow directions and meet deadlines. In other words, they have to be able to have good judgment and time management skills. They also need to be able to interact with their peers in the class, mainly online. Some might choose to call or meet in person, but mainly exchanging drafts online and commenting on their peers’ writing. They need to have effective grammar skills and punctuation and spelling, which should have been addressed in the earlier classes. And, they need to have good organization skills as far as being able to draft an introduction to a paper or a thesis statement and then have details and main points to support the thesis. Let's see, they need to be able to integrate my comments to improve future assignments and drafts that they write. And they need to be disciplined, which kind of goes along with the time management. They, it’s really easy to just ignore the fact that the class is continuing. Another thing that they have to do is participate actively in online discussions. So, they need to be able to read my responses and students’ responses to questions and then interact in a dialog with those responses. And, they, at the end of the course, they need to be able to assess the information that we covered over the course of the semester and write a coherent essay. And, another thing is that they need to, and I’m kind of struggling with this now, too, but they need to understand how to avoid plagiarism with using the Internet for research. I’ve had a little bit of a hard time with that, maybe assuming that students were aware of some of the issues and things that they should not do. But, they do them anyway, and I find that I’ve had to rephrase assignments and requirements and things like that. So, I would say those are the main things that are required.

The students would obviously need to know how to use a word processor, Power Point, being able to type something into a text box and format it and submit it, using attachments and receiving, sending and receiving attachments and using the Internet, because I include a lot of links in my course modules. So, that would be another—navigation...

In stating the question to Tammy, I then expounded and asked if a student with disabilities would need to possess the same set of skills, abilities, and knowledge. Tammy informed me that,

I was thinking about that some, and one assignment I think may be a little bit different is I require an oral presentation. And, the students videotape themselves and then send me the videotape. And, only once did I have a student that seemed to be partially deaf, and I could tell by her voice, and I, she didn’t tell me that, and I didn’t know that beforehand. I’m not sure if, if I would know if some students had disabilities otherwise until I actually
saw them through this videotape, which is in the middle of the semester. So, some students with disabilities may have a hard time with that assignment. I’m not really sure how text readers work. I’m hoping that all of my text that I have on there would be able to be read by a text reader. But, I don’t use—my, my course isn’t as technologically advanced as some that have the use of a voice board or video or audio files. I don’t use those on my class. So, I’m hoping that that would be the major difference would be just the oral presentation.

Some of the other comments offered by the faculty include the following.

Larry: Well, they, they obviously need familiarity with the Internet. They need to be able to do Microsoft Word because that is what WebCT recognizes while returning assignments. It helps if there is some familiarity with PowerPoint because I do put PowerPoint slide shows in my courses. … In general, if they’re not too computer phobic, because I think one of the biggest problems with teaching online courses is students panicking when something goes awry … I would say they need the same skills as anybody else.

Lance: Skills such as basic programming skills are a real problem. And designing skills. Those are the kinds of skills that they don’t seem to possess a lot. In either case, their ability to work with other people, their social skills, ability to socialize…that would preclude them from, you know, taking an on the ground course or taking an online course. But, online, I think the student needs, the way I’ve taught the course and the fact that I’ve not had a visually impaired student, I mean, they need to be able to read. They need to be able to, they need to have verbal, written skills. Everything is, obviously, done in writing.

Betty: The easiest way for a student to succeed in this course is to, you know, have hearing, sight, sense of touch because they have to be able to type. They need to have written skills, you know, have ability to communicate in writing.

Ben: I do a test of all my students called the VARK, visually, auditory, and reading/writing, and kinesthetic, and what it does is essentially scores their capability. Reading is a really critical one for me.

Aileen: Let’s see, they don’t have to be able to see because I’ve got words on it so they can do both the reading and the pictures. They have to be able to type. They probably would need to read Braille or have a Braille converter for their own convenience. Just like any other student they’d have to have the time, the talent, and the capability, the brainpower to take the course.

Don: Well, they’re best prepared and they’re more comfortable and they seem to be more successful if they’ve had some sort of experience on the Internet. In other words, they receive e-mail, they send e-mail, the Internet is a comfortable environment for them, they can go searching for this, go searching for that. Those students I have no problems with,
and not even in content. I mean, they are at a level of comfort with technology that that’s not a hindrance to them.

Nancy: They needed just basic computer operation skills. They also need to be familiar with the shell that we use. Those are technical skills they would need. Other skills that they would need would be discipline and self discipline and being able to manage their time and being consistent and not be a procrastinator, following through with each assignment, keeping up with, not getting behind and so forth.

Justin: Well, computer literate enough to be able to access the Internet and get on the Institution Z website to actually access assignments that are given. And, for this particular class, the English grammar skills are rather important because you do a great deal of writing, and the English grammar skills are something that you just don’t have time to do in this course. So, if the student does not come prepared with those skills, then they wouldn’t be very successful. But, computer literacy and then writing. They are required to submit their writing assignments in Word. They do letters. They do memos. They do reports. And, they’re required to submit them in Word.

With the exception of the nursing faculty, most informed me that the skills, abilities, and knowledge required to successfully take their courses would be no different for students with disabilities than it would for students with no disabilities. The nursing faculty members emphasized that in order to be a licensed nurse, certain physical attributes are necessary. If a student is blind, she or he will not be able to visually assess a patient’s condition, which is critical to carrying out the function of the position. They are in a somewhat unique position. One faculty member expressed concern that, even though her course would be accessible to a blind person who employed the appropriate technology, she would be afraid of giving “false hope” to that student. Enrolling and accommodating such a student could give him or her the impression that he or she could potentially obtain a registered nursing license in the future.

What Makes these Courses Appealing to Students with Disabilities?

For Research Question #3, I attempted to define the appealing or attractive characteristics of Internet-based courses. This was done by questioning both the faculty members and the students with disabilities. To elicit answers to the question, I formed it in the manner of asking the interviewees to cite advantages of online courses. Unequivocally, this particular sub-tree in
the NUDIST software had more nodes attributed to it than any other. To separate out the responses, I used an Index Search within NUDIST to find the intersection of two defined nodes – “Faculty” or “Student” and each sub-node of “Advantages of online classes”.

**Appealing Characteristics as Defined by the Faculty**

*Flexibility.* Of all the advantages mentioned, flexibility was the most common, 9 of the 17 faculty members talking about it. In some respects, they talked about the flexibility for the students, in others they were referring to themselves. For example, Betty told me,

> Well, I think one of the biggest advantages of the course, first of all the students can do it at their own pace. They can do it when it is most effective and efficient for them just to study, because some people study better in the middle of the night than they do in the middle of the day. So, if you, if that’s true then, you can do it at your time. And most of the time there’s no time limit. Now, I do have some time limited tests. And, that’s a lot of us around here. … you have the flexibility, but you’ve also got to meet the responsibilities of the course.

Similarly, Tammy said that,

> The time schedule is flexible, so students could work on it only at night if they wanted to. They can think about their responses before talking with students on the online discussion board so that, I guess what I’m saying is there’s a lot more time flexibility, and all of the information is right there.

Tammy also talked of how the flexibility was a benefit to her, as well,

> But, on the other hand, I just, I love the, the time flexibility, and I can, for example, I am teaching this class this summer. I can go on vacation. As long as I have my computer, it doesn’t–they don’t know where I am.

In contrast to some of the other faculty, Don didn’t have benchmarks for his homework, quizzes, and exams. Many spoke of how they would require their students to wait until a certain date before submitting a particular item for grading. When speaking of the flexibility, Don mentions,

> You’re saying “here’s the starting line and here’s the finish line. How you get there is pretty much up to you.” I don’t have a lot of timetables that say if you’re not here by this time you’re out of the course or you’re going to get an F. I just try and tell them where
they should be. If they get behind, I’m hoping that they will catch up. Some instructors, though, if they’re not, they have deadlines for quizzes being turned in. I don’t because that’s supposedly the strength of Internet courses is flexibility for the… Self-paced, I mean, I tell them. I say if you want to take the final exam four weeks into the semester, I’m cool with that, okay.

Ann spoke of the flexibility afforded to students by an online course. She also added a caveat of benchmarking the progress through the course. She stated,

I believe, too, that you need to have a pretty defined structure for an online course that you’ve got to build, you’ve got to be able to provide the students with flexibility, because I mean that’s why they’re taking it online often times in the first place. But, you also have to build in benchmarks and structure or they flounder.

Sylvia added a caveat to her feelings of course flexibility, too. She declared, “And, so, yes, accessibility, flexibility of the schedule—although I make it clear to them that because this is completely, you know, flexible for them they can’t assume that I’m on their schedule.” She also added that there is a trade-off to having this flexibility: “The trade-off for convenience and flexibility against the loss of the face to face.”

When Justin spoke of his business course, he added,

Scheduling would be much easier for the students, since the assignments are given to them at the beginning of the semester, and then they’re asked not to load me up by sending in three weeks’ assignments at one time. But, any time within that week, they could schedule the assignments whenever they want to, so with working, that would be a big advantage for them as well.

Convenience. Mentioned almost as frequently as an attracting factor is the concept of convenience. Even more than that, there are times when students chose to take an Internet course because they would not have been able to attend a traditional course. The convenience of being able to participate in an online course had other benefits. For example, some faculty members pointed out that students with physical disabilities would find it much easier to take a class from home rather than travel to and from a campus. Lance, the professor of a software design class, often had adult students in his online class. Many had family obligations and full-time occupations. He stated, “… it’s easy for students who are working. … It’s basically convenience,
and for students who are self-motivated it makes it easier on them.” Lynette was more descriptive when she shared this,

Yes, being near someone who can help the person, having your medication if you need it right then, accessibility to bathrooms, just many things that you can’t have in a regular classroom... I tend to feel in today’s world that that option of online is a definite plus for people with disabilities, simply because they didn’t have it before. And, once again, I guess I’m seeing it through my point of view that, hey, it’s nice to be just running around in my nightgown and taking an online course. Let’s face it, I had most of my students say that it was so convenient for them, period, that they didn’t have to get dressed up to go to class, they didn’t have to find a baby-sitter, so I would think someone with disabilities would have pretty much the same ideas.

Nancy was an ardent believer that convenience was the primary reason for students who enrolled in online courses. Many times during our conversation, she would mention the topic in both a positive manner and when discussing the disadvantages. She said,

And, like I say, generally—and, I can’t keep saying this enough, but generally the way I see the way online classes are operating now is not based on my learning style or my personality or whatever, it’s based on convenience. I need to have these credits and I can take this class online and that’s one less time I have to drive to Institution Z or that’s one less time I have to drive to UT or one less time I’ve got to drive across campus or get out of bed or whatever. So, I think that’s why it’s catching on, it's the convenience. I don’t mean this negatively, but right now I think our younger students they don’t really get into the educational experience like we do.

Ann provided a unique perspective to the study. Not only had she been teaching course in the nursing school as an adjunct for 17 years, she also served in a full-time position at her institution within the Information Technology department. She taught courses in IT to faculty and staff as well as promoted awareness of ADA compliance to the faculty. Her idea of convenience related not only to her students but to her situation as well. Ann clarified,

I think the biggest advantage of an online course is the time convenience. That, you know, for a student, especially the students that I’m interacting with, are mostly working R.N.s, so they may be working every shift, they may be working really weird hours, so that an online course really gives the student the chance to manage their time as they need to with all their other responsibilities... For my sake, again, the convenience is totally wide, totally the advantage. I have a full-time job over here, and I do my nursing class as adjunct, so that’s over and above my time, you know, the time I’m supposed to put in here in my, in my main job. That’s what I like about teaching an online course, because rather than having to—when I taught this face to face, it was three hours on a Monday
night, and now, I do 15 minutes here, 15 minutes there. I get up on Sunday mornings in my pajamas and do it before I get ready for church. So, the convenience of it is my, one of my, main draws. Plus, at least again, in the course that I’m teaching these students would not be in school probably if it weren’t for being able to do it online, because of the fact that they are working R.N.s working all kinds of hours.

Anonymity. As an attracting factor, anonymity on the students’ behalf was a popular topic of the faculty. However, not one of the seven students mentioned that anonymity would be a reason to choose to take an online course. This possibly indicates that non-disabled persons believe a disabled person would prefer to keep his or her disability from becoming known when the opposite is true.

When Larry expounded, he had been talking about a young lady in a wheelchair who had not practiced self-disclosure in one of his online classes. He became aware of a problem when her assignments were turned in with many typing errors. Larry offered help to the student, and she then told him about her confinement to the chair and lack of fine motor skills. He shared,

But, I think the up side is people like that who have any kind of, they’re just like everybody else unless they want people to know. You know, as far as anybody else knows, they’re, they’re no different than anybody else.

He also referred to the general anonymity afforded in many online classes when he said, “I think students–when they’re anonymous in discussion groups, I think often they’re more willing to express opinions, beliefs, than sometimes they are in the classroom where there’s 20 to 100 people around them.” Lance also had ideas about anonymity. When discussing his online discrete mathematics course he told me,

Sometimes for people with disability, they don’t probably like to tell other students that they have a disability, or if they say they have a disability probably other students don’t want them, want to work with them… But, since it was a very much more structured environment, I think that may be an easier class for students to take online even if you’re disabled because you didn’t have to know who else was in the class.

Other notable comments on anonymity included the following.

Lynette: For some students, having a disability they would rather not share with other people. It’s something that they’re very private about, and I did have one situation when I was teaching off campus. A girl had an epileptic seizure. The fact that it would be
embarrassing to me, for instance, to have everyone else around me know that I had
something wrong, but at the same time I haven’t been in that situation so… but anyway,
we all tend to want people to accept us as we are and some people can't do that.

Nancy: I think that the learning environment online, the learning community that the
faculty members are responsible for creating online, get a disabled student more involved
because nobody can see their disability. So, they’re like every other student when they’re
online, and every other student is like them, …

Aileen: … somebody with the worst, horrible-looking burn on their face or anywhere on
their body. That’s a disability, too, you know. When they’re online nobody can see them,
so they’re fine. A shy person, shyness is often a disability if it’s to the point where a
faculty member expects everybody to participate. A shy person participates way more
online than they do in a classroom because they can’t be identified and they’re not
putting a hand up over themselves.

_Lack of Mobility Problems._ As with other issues regarding students with disabilities,
many faculty members’ first perceptions is of their being physically disabled. The concept of a
medical disability or a learning disability is not the first mental image many people have. It is
likely for this reason that mobility was mentioned several times as being an advantage to online
courses for the student with disabilities. Larry and I were discussing the topic when a colleague,
Tad, entered the room. He had completed his dissertation a few years earlier in a related area and
felt that online courses were not “all they were cracked up to be.” After Tom left, Larry said,

… and I think that some of the things that online can do is help disabled students. I think
it’s one of the things they can, for two reasons. One is, I think it is hard for lots of
disabled, particularly those with mobility problems, to get around campus. Even when
there’s accommodations made, it’s so hard to get from building to building, get in and out
of cars, and things like that. I think online courses that they can do from their home, I
think that actually it’s a very positive thing for students. Now, again, that’s for that kind.

Tammy also pointed out that online classes could benefit those with physical disabilities
when she stated, “Because some of the students that I have had with disabilities, it’s physically
difficult for them to get to class and move around campus, and so that would help with that.” Ben
has expertise in the area of physical disabilities and rehabilitation. He was very passionate about
the opportunity that online classes could afford to some of his most severely impaired patients. In
fact, he viewed it as a chance for education that these people would not have otherwise. Ben told me,

… in my experience with individuals’ physical disability, and I’ll state that I have some expertise in that area, they cannot get places or they feel funny going into groups. So, that literally brings the, the modus of learning into their home and the comfort of their own PC… So, just right there it brings the classroom to their physical environment. They’re comfortable, they’re in a place where they feel at home, and so if it wasn’t for that, they wouldn’t have any options in learning other than traditional classroom.

Ben further discussed this area and related,

Just in discussion, because I do, because I see folks regularly, I have asked about that. And, because of the mobility issues and the amount of preparation, actually some safety issues because, they are on complex medical equipment, they like the Internet classes because they can stay home. They don’t have to get into their wheelchair and then get into the lift truck and then be transported by a driver to a facility where, in some cases, they feel sort of on display is the terms that I’ll use, the term that was told to me. Cary informed me that mobility problems could make an online course appealing, but at the same time, he cautioned about the type of course that was being taught online. He shared,

…but I would think that in some cases some people with disabilities, it might be of advantage, especially if they were homebound or something where they could not get out to an educational classroom, where it was more difficult. I think that would be a great advantage to somebody in that situation. But, what we’re learning is not every course lends itself to an online situation.

Ann, one of the nursing professors, also mentioned mobility. Again, a caveat was included. Ann said,

A person with a physical disability, to me, this is a wonderful opportunity for them as long as they have the ability to manipulate through the screens. If they don’t have to physically come to campus or don’t have to physically get out, in terms of a mobility type of disability, to me this seems perfect. Other types of disability, again, it would just have to depend on what their disability was and kind of what they were trying to accomplish.

Sylvia did make reference to the many different types of recognized disabilities when she said,

There are so many different types of disabilities that it’s difficult to get just one kind of picture, because you’ve got people that are just physically disabled and the problem is getting to the traditional classroom. So, for them, this is just a lifesaver.
Kenny also advocated online courses for those with physical disabilities. He stated, “It seems to me like for many of them it could be a great match. Students with physical disabilities that maybe have a hard time getting out would be able to take the class at home on the computer.”

**Comfort.** Many of the factors that contribute to the attraction of online courses for students with disabilities concerned their physical environment. Similar to the mobility issue, several faculty discussed the ability to be comfortable in their own homes. None of the faculty interviews referred to comfort from their perspective. The ones who discussed it were all referring to the comfort of the students. Nancy said that,

If I was a student that had a physical handicap, I would prefer to actually probably stay in my own comfort zone and be able to do the class online versus having to come--because most students with a handicap are not only having to deal with trying to do what has to be done in the classroom, but all of the elements of getting to the classroom.

**Equality.** When a student with disabilities enrolls in an online course, there may be the protection of anonymity. In those instances, students may find themselves on a equal basis with all the others in the class. Several faculty offered this as an attractive factor to online courses. For example, Tammy spoke of a student with a hearing impairment who had enrolled in one of her courses. The student did not practice self-disclosure. Tammy was only made aware of it by an assignment that required a videotape that the student had to make of herself. She related, “But, I think the up side is people like that who have any kind of [discernible disability], they’re just like everybody else unless they want people to know. You know, as far as anybody else knows, they’re, they’re no different than anybody else.” Ben, the faculty member who treats persons with disabilities, also agrees that online courses can offer equality to the student with disabilities. He declared,

But, you know--and if a person wasn’t able to speak I think there’s a stereotype as to their intellectual level whereas in Blackboard you’d be getting feedback on the system. You didn’t ever have any idea at all that the person had any type of problem with their capabilities or their facilities. So, I think it really levels the playing field… It’s kind of a
neat device to give people who have disabilities per se to, you know, they can go for it and be just as good or better than anybody else.

As Kenny was discussing the practice of self-disclosure, he mentioned that students desire equality when he said, “Some of the students, they feel that they’re not doing it on their own if they have that piece of paper. They feel like that they’re being—I think that most students, they want to be like everybody else.

Other Appealing/Attractive Characteristics. Many more factors were given by faculty as attractive points to online courses. Some related to the students, some were related to the nature of online courses. For example, a few faculty referred to the methods by which they offered their quizzes and exams online. The software would score or grade the students’ submission immediately and provide feedback right then. This is usually not possible in a traditional environment, when grading is done by hand or by scanners. Kenny told me, “They get instant feedback, immediate feedback. When they take a quiz all of a sudden, boom, their grade is right there.” Sylvia, who teaches English Composition classes, felt this was an important attraction to her online students. She said, “I do give them immediate feedback. I have the web site up at home the whole day and check the e-mail constantly, check the discussion boards constantly. Their homework, I give them one-day turn around…I give immediate feedback.”

Accessibility to education was another topic discussed. For some students, if they had not been able to take the course online, they would not have been able to take it all. In addition, there were instances where the student lived one, two, or more hours away from the campus. With familial and work obligations, the additional time it would take to travel to campus was not an option. Aileen, with enthusiasm, advocates online courses with her statement, “… more and more disabled people, it gives them access to education that they didn’t have before.”

The remaining factors contributing to the allure of online classes were not spoken of as often as the ones discussed above. However, they are worth mentioning at this time. They include: a better organized “lesson plan” for the course, the creativity the students can show
when using the discussion boards, the ability for reflection (reviewing archived discussions, in particular), a method for shy persons to become involved in a discussion, the cost savings of not having to drive to campus, the security of taking a class from the safety of the student’s home, the “better” discussions that can evolve from a discussion online instead of in the class, virtual guest speakers that could not have attended a traditional class, and the “excitement” that surrounds the opportunity to take an online class.

Appealing Characteristics as Defined by the Students

Flexibility. The students interviewed, similar to the faculty, discussed the flexibility of online courses as a primary attracting factor. Proportionately, the students did not mention flexibility as often as did the faculty members. Rosa shared her feelings about them: “… it allows you as a student to control everything. Of course, I know there’s some things that you cannot control. But, I mean I think there’s more of … just at your own pace kind of stuff.” With her multiple sclerosis, she elaborated that an online course would allow her to work when her physical symptoms were not as aggressive. David stated that the flexibility of an online course might be an appealing factor to him. With his dyslexia, it tends to be more difficult to read and write while suffering from fatigue or stress. He explained, “When I get tired and when I started having a lot of trouble understanding the reading and writing, I could stop and start it again later.” Dharma spoke to me of the flexibility of online courses, specifically that she was able to complete most of her work early in the morning before going to her full-time job. She is a “morning person”, and having the ability to do the work on her schedule was a benefit. She said, “I can do them at my leisure.”

Convenience. The factor of convenience of an online course to a student with disabilities was not as common as it was with faculty. Andy had only taken web-enhanced courses, and when queried about what he would consider an advantage to the classes, he thought for a
moment. Then he briefly stated, “Not having to take the time to drive back and forth from class and just do it at home.” I asked if this would be classified as a convenience. He then responded, “Yes.” Also responding with a brief answer to the same question was Alice, who said, “… not having to come to campus and all that.” Interestingly, none of the other five students interviewed ever used the word in our conversations.

**Lack of Mobility Problems.** Rosa and Greg both have been diagnosed with multiple sclerosis. On the day Rosa and I met, it was warm and sunny and promising to heat up to the high 80s. She was using a walking cane that day. Rosa is a young woman, only 29 at the time. Her disease had progressed since her initial diagnosis some eight years before. A dancer, athlete, and gymnast in her younger years, the acceptance of her disease was not an easy one. However, her resilience gave her fortitude to continue with her education. Rosa has more difficulty in warm weather. She talked to me about going to class in the summer months, how fatigued she would become by early afternoon, and how working on classes from her home would have been nice. She told me, “It would help me out so much if I didn’t have to, you know, get dressed and deal with the heat and come, and confront the heat and so forth.” She continued, “[It affects] how I think and talk and speak and walk. I mean, everything, how I move. I move very slowly. I become very tired, and it hurts me so very badly.” She also summarized some of the effects of MS, “…it depends on—I mean, me, personally, with MS, is that I cannot take extreme temperatures, no matter what, cold or hot.” Rosa described herself as “sluggish” on hot days. The ability to stay at home where she could control the ambient temperature was a definite advantage for Rosa.

Greg also had days when getting around could pose a problem for him. MS affects different people in different ways. One of those ways is a lack of balance and coordination. An online course, as described by Greg, would have the advantage of allowing him to work from home and not have to traverse the campus. He said, “It would give me a chance not to have to
walk around up here.” The physical layout of the auditoriums where Greg had classes made it difficult for him at times. Taking an online course would eliminate all those obstacles. Greg clarified,

Well, I think it’s actually good for a lot of students with disabilities. You see some people struggling to, people who have problems with hearing coupled with another disability who have to sit at the big desk way in the back but can’t hear anything up at the front or, you know, like for me, sometimes I have problems with my vision and I’ll sit at the back of the classroom with my big old thing (desk) and can barely see what they’re putting up on the board sometimes.

These particular rooms that Greg is referring to seat approximately 160 people. They are of the “auditorium” style, with sloping floors leading down to a stage where the professor lectures. Greg described to me the problems he had in those rooms. The professors don’t wear the wireless microphones. The desk for students with disabilities is located in the back of the auditorium, which makes it difficult for him to hear. In addition, the screen up front, and even the chalkboard or whiteboard, are too hard to see from the back because often the professors cannot or will not write large enough for him to see on those days that his vision is affected by MS. Greg informed me that MS can affect any part of the body. He also stated,

Well, the reason I have to sit in the back is because of accessibility and the chairs. You know, those auditorium seats and what, there’s no room to work with, there’s no room to sit, and it’s just, navigating your way through… With multiple sclerosis you also have problems with your balance and walking and such, and it makes it difficult to–it would be impossible to work from those small desks. So, I suppose if they were, more accommodating in the seat–I’ve never seen one that’s actually full. I’ve never been in an auditorium class when it was actually full. I think they could maybe… [take out] two of those seats and put in some larger with a bigger desk working space, maybe a little more room between the aisles.

As mentioned previously, at the time of our interview, Greg was under the impression that it was impossible for him to take a course online because of the type of student financial aid he was receiving. Not having to deal with mobility problems was the only advantage Greg discussed.

The other students, even those who had not participated in online classes, spoke much less about the appeal of online classes than did the faculty. Actually, none of the seven
mentioned the words, “Comfort”, “Anonymity”, “Equality”, “Accessibility”, or “Feedback”. All of these were common themes that emerged from conversations with the faculty.

Other Appealing/Attractive Characteristics. There were only three other advantages to online courses listed by the students, both those who had taken online courses, and one who had not. One of the more interesting ones was provided by Alice, a senior. She said, when discussing the two online courses she had taken, “I didn’t want to fool with freshmen and they were both freshman level classes.” On further probing, I discovered she meant that freshmen ask a lot of questions unrelated to the course, and she had been in so many of those classes that she didn’t want to “deal” with it again. Further in the interview she declared, “I mean, there are some classes that I wouldn’t mind having on the Internet just for the fact that I don’t want to go to school.” When I asked her, “What kind of classes would those be?”, she replied succinctly, “Freshman classes again, like I said.”

Andy had experience in web-enhanced courses. It should be noted that he registered for those particular courses because, “… that’s the only way they were offered.” Other than convenience, the only advantage he could define was the additional experience in using a computer. He stated, “I would say they can get more, they would be able to learn more about the applications on a computer as opposed to just doing it like, at times.”

Gina was questioned about the likelihood of ever taking an online course. Not having experienced one yet, her reason was placed in a different context. She explained, “Well, possibly later on because if I can, you know, you should never stop learning.”

What Makes Them Non-appealing Compared to Traditional Courses?

For Research Question #3, part 2, I attempted to identify the non-appealing or non-attractive characteristics of Internet-based courses. Once more, this was done by questioning
both the faculty and the students with disabilities. To elicit answers to the question, I asked my interviewees to cite the disadvantages of online courses.

Non-appealing Characteristics as Defined by the Faculty

The faculty members interviewed were overwhelming consensual when they listed a lack of personal interaction with their students as a disadvantage, or non-appealing characteristic of online courses. They also shared several other factors they saw as contributing to the unattractiveness of this type of course, both from their perspectives and from those of the students.

Lack of Interaction with the Students. Several faculty members spoke winsomely when they told of missing the “face-to-face” interaction with their students. Not only did they see this as a disadvantage to themselves but to their students as well. Nancy was very adamant when she talked of the social aspect of the classroom. Online courses remove this from the students and faculty. She shared,

But, for my teaching mode and my teaching style, that really worked as a disadvantage for me, because I like the interaction with the students. I like to be able to see students. You can tell a lot about how much a student is learning just by being able to make that facial contact with them. There were some projects that we tried to do online that didn’t work out as smoothly as they would have if we had been doing them in a traditional classroom. So, if I decided to offer the class online again, I would do some adaptations and so forth with assignments. What I actually, after I evaluated it, what I actually had decided was that it could be a class that could be taught online but there would also have to be some times allocated to actually meet as a group.

Ann has very similar feelings. She told me,

I miss the–you know, I do miss the face-to-face contact and the actual talking. I don’t do anything synchronous. Everything is asynchronous in my course, so I miss that, actually talking with students one on one. Now, I mean, I make up for it. As we have a lot more interaction probably in my online course than I did in the face to face with every single student. But, you know, you still do miss that. And, I miss, you know, that sort of that being able to see the light bulb going on kind of situation. I have an assignment in my class where the students have to tell me what they, what I call my “ah ha” moment, that
after they bring something… Yeah, eureka moment, exactly. So, I tell them, now, this is me seeing the lights going off when you tell me what your ah ha moment was. So, I mean, there are ways to get around it, and I think there are very valuable ways to get around it. But, you still do miss that.

Lynette shared how she missed interacting with the students as well. Not only that, but she missed the physical environment of a traditional setting in a personal manner. Lynnette stated,

However, I’m a very social person, so I would have missed the academic part of it. I would have missed the aura that’s in this room. I mean, this, this room smells like academia. Of course, it’s like 1927 it was built, but this is almost a holy place to me…

Kenny related that this loss of interaction, the “impersonal” nature of an online course is a disadvantage. He said,

… it tends to be impersonal. I meet the first day in person and we kind of go around and introduce ourselves. We know of, know who we are, but beyond that it can be real impersonal. That’s the main disadvantage… But, again, it does tend to be somewhat impersonal, because you’re not there talking to them every day.

*Time to Develop Online Courses.* Most of the faculty were asked which took longer to develop—a traditional course or an Internet course. The vast majority said the initial development of an Internet-based course was, without a doubt, much more time-consuming. However, they were quick to point out that once developed, the course could take less time to actually conduct, or teach. This often depended upon the nature of the discipline and the type of tools they were able to use for that class. For example, Kenny had a database of pre-defined questions or problems. These were presented to the student randomly so that no two students received the exact same set. In addition, they were graded and the scores were presented to the students immediately. Unlike this format, many faculty had to read papers, use some form of technology to grade/correct them, then return them to the students.

Lynette explained some of the difficulties she had in preparing to teach her first online class,
I will say it was the hardest developed, as far as my time, that I’ve ever done because didn’t know the system, because I had 24 students from all over the world who for one reason or another didn’t have it right this time. The revisions had to be done after they wrote a paper. There was constant communication, which was all right, but I didn’t spend one tenth as much time on my college classes in person as I did for RODP.

Don was preparing a new course for the RODP program at the time we interviewed. He told me,

Certainly time is a disadvantage. It takes longer to design the web course. It takes more revision. I used to revise a course maybe every two years, minor revisions all the time, but major revisions every two years. It takes major time to do the revisions in an online course at the end of every semester.

Cary’s description of the communication requirements for his course was evidence of his increased time, not only in development, but also in teaching. He stated,

For an instructor, there is so much time spent trying to, to get those lessons ready, to do the planning, communications, with students. In the classroom the questions are there, you answer them, you move on. If you’ve got to answer questions through the e-mail or even the telephone one-on-one, you may be answering the same question 17 times.

Ann spoke of not only having to be able to prepare the course content but perhaps having to learn the technology necessary to create it. She said,

I think it took, it took me longer to get the online course prepared in the first place than it did for the face-to-face one because, you know, you not only had the knowledge part of what you’re putting together in terms of preparing the class, but you’ve got the technical part as well… So, the online part, online course took longer to put together. The actual teaching part, again, face-to-face probably was more because it was more, it just feels like it was more because it was more concentrated. Every Monday from 4:00 to 8:00 or whatever, so that, being the fact that I’m not lecturing, it doesn’t feel like it takes me as much time to run my class now as it did then.

Kenny shared his belief of the administration’s concept of developing online courses. His particular area, math, does not lend itself to easy development with all the equations and formulas included. Kenny declared,

Because administrators think teaching online is the same as teaching on-ground, but in fact, it takes particularly up front hundreds and hundreds of hours to develop if you’re going to develop a good course. Now, if you’re going, just going to put your notes up there, well, you could spend a weekend and all of your notes are already in Word you can slap them up there in WebCT and let them go to it.
Misconception by Students on Time Required. Over half the faculty interviewed talked of students believing an online course was “a breeze”. There was often a misconception of the time required to successfully complete an Internet class. Many faculty said that students were under the impression that it would be “easy”. When asked if she had experienced this, Tammy said, “I would say so, because I think there’s a stigma that the online courses are easier and so I think we’re encouraged not to, to make that distinction really between the on-ground and online.”

Don said those students without online course experience have the wrong impression. He stated, “Those who think that maybe Internet courses are not nearly as time consuming as on-ground courses, [those who are not familiar with them] probably deceive themselves.”

Using her course as a specific example, Sheila elaborated,

These are junior-level math based courses for the most part. Students don’t realize that if it is a four-credit hour course, if they were on campus they would be in class four hours. They need to study three times four, 12 hours, at home when they’re coming to lecture. If they’re taking the course online, they need to spend more than 16 hours a week studying for this course. They never dreamed in a million years they would have to spend so much time studying for one course. They don’t realize they need to put in the time, even though I tell them this is a 10- to 12-and sometimes 20-hour a week task, for this one class, depending on how good your math skills and background are. And, so, because they don’t realize how much time they need to put in, they get behind… I’m completely convinced that that’s part of the fallacy. “Oh, yeah, well I can get online 24 hours a day, I’ll do it later”, and they put it off.

Cary also reflected Sheila’s thoughts. He said, “There has been very little advantages of taking it online since they–the pass ratio is 50% or less, mainly due to the fact that the students do not realize how much time it takes to do an online course.” He also elaborated about the issues with his course online,

And, that’s, that’s the biggest problem I’ve seen. And, I’ve had people who are working who think that this is an easy way to take the course, and they don’t realize that it’s going to take a time block of 12 to 20 hours a week, depending on what’s, what the assignments are just to get the basics done, not to [mention] the extra work that has to be done for outside projects.

Rachel, the elementary and special education professor, has had similar experiences with some students. She stated,
Now, that I’ve done it a while, and students—they’ve taken other online classes. They know when they take one, the misnomer was it’s going to be easy, I can sit here in my PJs and knock off, they can’t do that. There’s much more—when you read, you really have to know what you’ve read because you can’t hide in a group in a classroom. You need to put yourself out there on the conversational floor.

Sylvia also talked about the misconceptions students have about online courses and the amount of time required. She stated,

> If I could pick something that I think really does students in in this online environment is your expectation of the course is going to be easier than a traditional on-ground course because, my Gosh,… But, in essence it’s a, it’s harder because I have the same expectations of my online students as I do with the regular students. I don’t mince assignments at all, and we do a lot of discussion board.

She also said that she did not believe this to be a unanimous belief on a student’s behalf. Sylvia clarified,

> … The young people who are working or who also have children or, unfortunately, those that think they can take more credit hours if they take an online course. So—now, not all of those—I don’t want to discredit those people. Not all of those have the misconception that it’s going to be easy. So, I don’t want to say that people, all people who want to carry an online course so they can do an overload are under the misconception of it being easier.

Justin dispels this myth when he explains,

> There—there are more assignments, and the students—the students do more work in my online class than they do in the traditional class. There are more assignments they have to complete. And, they’re having to dig it out on their own, so it’s actually going to be tougher for them to get through that class I think than it would be in the traditional one. And, beyond that, it’s more difficult for me, too, because the, the grading process takes longer to go through,…

Limitations to Students with Disabilities. Betty pointed out that certain physical disabilities may prohibit students from performing the job duties of a nurse. In those situations, the same limitations that could cause problems in taking an online course could prevent them from making nursing a career. However, she also wanted to say,

> Well, I don’t think that just because somebody has “a disability” that it precludes them from doing everything. I think there are, depending on what the disability is, will have
limitations on what they will be able to do… You know, as I see we’re becoming more sophisticated and knowing more about medicine and that sort of thing I can see in the future, that there are so many opportunities in nursing that everyone does not do the very same thing. That, there could be a way that what is critical information that everybody has to have in order to be, to be a successful nurse and that how can you accommodate someone who has deficiencies in a certain area.

Ben was conscientious of his students’ ability to handle the technology with their home equipment. He elaborated,

I think Blackboard does have some limitations. Obviously if you put a lot of–I put a lot of interesting videos out there that people can’t receive because they don’t have the right players. So, I think we have to be very cognizant that what we put–when we build these systems, they should be palatable for the hardware and software that is reasonably obtained by the people that are out there consuming these. In particular, if you’re going to go to disabilities. One rehab center for example, they set the computer up so that they can access anything.

Nancy also mentioned this limitation. She stated,

I don’t see any–if a student has gotten to the point where they’re here to take college courses, uh, I don’t see that they would have any problems taking an online course, uh, that is just set up generally as an online course with the exception of their specific limitations. That would probably be the same type of limitations in a traditional setting. … and your student out there may have just the low grade [equipment] from wherever. And, so if you put some kind of fancy PowerPoint they may not be able to pull it up.

Don considered the additional efforts that an online course may impose on students with disabilities. He said, “… with the Internet courses because it is a–I’m not sure it’s a level of difficulty, but it’s a level of another magnitude of overhead that students have to deal with.”

Time to Teach an Online Course. The amount of time it takes to teach an online course can vary. Some of the faculty stated that once it was developed, teaching time was less than that of a traditional environment. Others disagreed and stated that this delivery method still took longer to teach.

Lynette taught an English Composition course online. She declared, “I have to respond to every single paper and tell them exactly every single error, and then I have to respond to the
content. And, it takes almost as much of my time to respond as it did for them to write the paper, literally.”

Don explained earlier that the development is much more time-consuming for an online course. He stated that teaching it involves a lot of communication. Don stated, “It’s mainly communicating with the students, keeping records, encouraging them to keep a time schedule, communicating with them.” There are instances where it could be more time-consuming that a traditional course. He elaborated,

Now, for those, in providing them exams, I had to either fax or e-mail as an attachment exams. I had to make sure that there were proctors that I could agree with, that I could okay. The proctors had to administer an exam on a certain date. It had to be returned by a certain date. When it was returned, it had to be hand scored because it would come back to me as an attachment or a fax—neither of which can be scored electronically. And, I had to do each of those by hand. Well, since those might take 10 or 15 minutes per, and I got three of them, there’s just an extra amount of time that I had to deal with those. Then I turn around and I had to report those grades and the missed scores back to them, and so I purposely limit the number of students taking the internet courses at remote sites. I haven’t had to really do it too much, but when I get to about the five mark I just don’t take any more.

Rachel has also experienced the need for extra time when conducting an online course. She explained,

But, when you’re doing an online, in order to go into my next week’s discussion, I read all my students’ responses. I don’t skim. I’ve got to know what would they have said in class, what are they feeling, and I go back and read all of their e-mails. In fact, when I do my online, I’ve told people here—I’ve said I’ll do it, but I said there’s got to be a day when you don’t see me. I need a day when I can just, you know, stay at home and I’ll stay at home and just go through my readings. I don’t—I can’t have any of the interruptions of the phone, people coming to the door so, when I do an online, it’s like one day at home that I spend that whole morning just doing my reading my stuff and then composing my questions and my thoughts for the students for that week.

Justin verified that it did take him more time to teach his online class, mainly because of grading papers. He explained,

And, beyond that, it’s more difficult for me, too, because the grading process takes longer to go through, checking documents submitted through WebCT or e-mail or however I have them submitted. It just takes longer to go in and mark them that way than it does to take a pen, and mark, mark, mark.
Other Non-appealing Characteristics. Many of the faculty mentioned the fact that they had students who were over-committed when they registered for an online course. Going hand-in-hand with the misconception of this class not requiring as much time as a traditional, students are already overwhelmed when they register and find out later that their other commitments combined make it difficult to supply the time necessary.

For example, Tammy shared,

What I have found is that a lot of students who enroll in the RODP are over-committed. They have a family, they’re working full-time, and I think they feel like this’ll be an easy way to get their degree. They get in there and find out that they can’t do it and they withdraw.

Larry has had issues with students who wanted a break because they were busy with other things in their life. He was understanding but expected the same courtesy from his students. He explained,

You still have to perform at the same level as everybody else. I cannot say, well, because you have more demands on your time that I can give you a better grade for a lower score. And, there are some who want that. They, they want extra break. I mean, if something comes up—if somebody says, you know, my child got sick or something and the assignment was due, Friday, I’ll say, oh, that’s okay let’s give you another few days., I’m not unreasonable about it. But, the people who just kind of like generally want a break just because they’re busy, you know, nothing specific came up…

Lance had a large portion of his online students working full-time. He was sympathetic but at the same time understood that over-commitment can make it very difficult to take an online course. He stated,

Basically, the RODP program and a lot of the online classes that we offer here are usually taken by people who are, they either have families and they’re trying to stay at home and take care of babies and do course work or they have a full-time job and they’re trying to work on a degree or complete a degree.
Plagiarism was mentioned by a few of the faculty. Apparently, the method seems to allow for an easier access of data and information, particularly for those who are familiar and comfortable with using the Internet. Tammy said,

They need to understand how to avoid plagiarism with using the Internet for research. I’ve had a little bit of a hard time with that, maybe assuming that students were aware of some of the issues and things that they should not do. But, they do them anyway…

Kenny agreed. Even though he teaches math courses online, he presented an excellent position when he stated,

It’s so easy to plagiarize online, but teachers can make, they can either by the nature of the assignment itself, they can make them more creative, which has a dual positive effect of having students having a little more fun with what they’re writing and the teacher with the reading a little more fun essays than the standard, safe, cautious essay that most students write. Teachers can assign these, and they could utilize things like www.plagiarism.org where they can send papers through… You know when a student starts using, you know, six-syllable words that they… But, this has happened before in technology. Technology has now made it easier, more attractive, and more tempting to students to copy and paste. And, a lot of times it can, they can appear to college teachers, think they’re not going to do that, they’re in college. But, students, they feel that they’re doing a research paper when they are doing that. They go, well, I researched that, I cited it. Let’s look at what you’re doing.

Lance also spoke of having virtual office hours for his online course. He made himself available for any student who may have needed to contact him. Lance told me, “It was a waste of time. There was nobody, zilch. Zero for the entire semester… But, then they would call you or e-mail you or do those kinds of things. I don’t do that anymore.”

Oral communications should be an integral part of any successful college student. Ann lamented the fact that most online courses do not afford the faculty member the luxury of assessing this. She shared,

And, I think as we really become more sophisticated with WebCT and use the audio components that we’re going to see that being a real adjunct to teaching online. Because right now you don’t have a way, most of us do not use any audio, and so we don’t have a way of really evaluating students in verbal communication.
Non-attractive Characteristics as Defined by the Students

The students interviewed were less thorough in their conversations when we discussed unattractive or non-attractive characteristics of online courses. There were a few areas mentioned by more than one student, and a handful of others that were talked about by only one student. Like the faculty, most that mentioned anything at all spoke of the lack of personal interaction that online courses were believed to exhibit.

Lack of Personal Interaction. As with the faculty, the most common unattractive feature of an online course is the lack of personal interaction, both with the teacher and with other students. For example, Andy was not very talkative, but when asked if the social interaction he experiences in the traditional environment made him feel more comfortable about himself, his straightforward answer was, “Yeah, it does.” Recall that Andy had a speech impediment in addition to a learning disability, and he preferred the traditional environment so that he could “practice” his speaking skills.

Greg provided the most intense description of the most non-attractive characteristic to him. He said,

I think it–think if it got too big where people were just doing their entire degree online–we humans are a social being. Most of our brain capacity is to deal with our intense social network that we have, and when people shut themselves away from all that, well, then they go insane. You know, there’s–actually people go insane from it.

David felt like the most unattractive characteristic was also the lack of social interaction. Primarily, he said that without a teacher or another student available, he could not be sure that he had correctly understood what he had just read. If he were to do the majority of the coursework by reading information from the Internet, there would be no one that could validate his comprehension. For example,

There’s got to be some way that I can check to make sure that I can understand the information that I’m getting to, and an online course doesn’t provide that unless there’s somebody I can directly ask questions to. And, with my dyslexia, since I spell like I do...
Reading is such a laborious act for David that online courses had no appeal for him, unless they were modified with videotaped lectures that could be provided in streaming media format. Streaming media is the rapid transmission of audio and video over the Internet.

Gina implied that staying home would be a disadvantage for her. She told me, “Yeah. Staying home. What would be a really big disadvantage [is] for someone that’s not that computer literate.”

Technology Glitches. The students interviewed determined that issues and problems with the technology involved with an online class could certainly be disadvantages, and some of these most likely not to be overcome by education or awareness. For example, Dharma had experienced it firsthand. She said, “I know when I first started taking them my phone line, my Internet connection went out at home, and that freaked me out because it was out for quite a while. And, the next week I think, I got a cable modem.

Greg was knowledgeable and experienced on computers even though he hasn’t participated in Internet courses. He said,

Sometimes you might have a student who picks up a virus and for the next six months can’t attend this class. Some people might think their old computer will work on some of the Internet courses but it's not a high enough level. They don't have the proper Windows program. You know, so then on top of having to buy books and the people would have to buy software and possibly a new computer and it could run into--there could be some serious disadvantages to it.

Isolation. Greg also talked to me about the isolation that online courses could impose. He explained further,

Once you shut yourself off, it’s the end of you. And, if people start shutting themselves off in that way, then it would, I think, be harmful toward society. However, there are advantages to it like, you know, someone from California could be taking classes here. So, that would be an advantage for our university specifically or that one person that this was the degree they wanted. It just--there’s a lot of goods and bads about it.
Other Non-appealing Characteristics. There were a few other items of interest in this particular theme that should be mentioned. These include laziness, having no alternatives, and a lack of self-discipline.

When Greg spoke of laziness, he was concerned about what effect the easy access could have on society. He stated,

I imagine, though, it would produce a lot of laziness. We’ve started to become a society of people who like to stay in the house and then [get] in the car, get to the store, get back out, back in the car, and back to the house. Nobody interacts with anyone anymore. So, you would lose your socialization in that aspect.

Dharma feels that students lacking in self-discipline may find this to be a difficult endeavor. She told me, “The only drawback is if they don’t do their work when they need to. That’s the only drawback I can think of for even, you know, if you’re not a very good reader, you can always put it in the reading software.”

Finally, some mentioned the situation where the online version is the only alternative to taking a particular course. When I talked with Andy, he had taken web-enhanced courses, not Internet courses. Knowing that he preferred to be in the traditional class environment, I asked why he registered for these. He explained, “That’s the only way they were offered.”

Alice needed accommodations for her visual impairment. When queried about one that did not provide the textbook on CD, she clarified,

That’s what I told them. And, they said, well, you know, that’s just how the class operates. And, you really can’t change this for one or two students. I have always felt like that. I would not ask an instructor, an organization, or the RODP to, hey, you’ve got to change this cause this is not adaptable, this is not easy to do. I wouldn’t do that because I’m one student.

I talked more about what she would have done if this was the only way the class was offered. She explained that she didn’t pursue the matter, “Because there are biology classes in school. If that was my only option, yes.”
What Can Be Done to Make Online Courses More Accessible?

Many faculty spoke of being aware that online courses should meet ADA requirements. In addition, some had even attempted to develop their courses in a manner where any student with disabilities would be able to access them without hindrance. It was mentioned that implementing the necessary changes to accommodate every disability could be an extremely time consuming effort. Rather than spend valuable time on a task that may never be needed, the faculty talked of how they would appreciate students letting them know ahead of time of their intentions, then focusing on making the necessary accommodations to meet that student’s needs. As Research Question #4, the following excerpts portray the observations of the faculty and the students as to what would be more accommodating.

Responses from the Faculty

Larry spoke of the changes he would like to make to his online courses. He pointed out that not only would it benefit visually impaired students, but those with specific learning styles would also have an enhancement to the course. Larry shared,

One thing I definitely will do at some point… is add voice-overs to the PowerPoint presentations… There’s been an advancement with speed, even with cable and DSL and stuff, add actual videotapes and lectures or something like that… there is research, students learn differently. Like some learn better through ear. Some learn better visually. Some learn better through word. Some learn better through graphs, and so I do think sometimes hearing things—again, I’m not specifically talking about disabled, but just some students in general, learn better by hearing than seeing.

Lance also has intentions of making his online courses more compliant. He told me,

There’s a—Compaq developed one kind of software that does some kind of audio translation of your slides for WebCT. So, that’s one thing I am working on. And, the other thing is there is a—there are some lecture notes from the book that is for the course that is on video tapes, and we are going to digitize it and put it on the web for them to get a summary of what each area is about.

Tammy had no specific plans for course modification. However, she is a compassionate person and was honest enough to admit that knowing a student had disabilities may tend to make
her more “hyper-aware”. Like Lynnette, she would be very self-conscious about everything she did or said during the course. Tammy said, “Basically whatever their needs are, I would be willing to help them… I wish that there were a way that I could, I could talk with someone who could let me know if that was something that I should be doing more of cause it would take a lot of effort, I guess, to do.”

Ben spoke of making an extra effort to include various types of media in his courses. Ben’s primary concern was providing for the various learning styles. As a result, he often provided methods for students with disabilities to access the information. For example, he said, “I’ve tried, and I do a lot of stuff with video, audio, and puzzles on my website. And, I think that’s more to complementing styles than it would be relative to disability.”

Aileen was the most progressive of faculty members in her attempts to make her courses most accommodating. With another colleague, she had been addressing the issue for the past several years. She explained,

We met with [the disability services director at her institution], and we talked with her about what things that disabled people had access to at [her institution] so that we knew what we needed to fill in with that they didn’t have, what we needed to do. And, once we found out all the great stuff actually they have access to as a student–if they’re on campus, they have a lot of great stuff that makes the technology easy for them to use. But, if they’re home it’s different.

Aileen further explained that she and her colleague had developed presentations for their campus and others. She talked of the need to develop a web site that would pass the approval and gain certification from an organization. These are not federally-mandated guidelines but ones developed specifically by organizations that desire to help others create ADA-compliant web pages. Bobby is an example. More information on Bobby can be found at http://bobby.watchfire.com/bobby/html/en/index.jsp. Aileen went on to describe more about the certification,

There’s one like Bobby that looks more at do you have the speaking and the words and are the words big enough and are you careful with color. If you think something’s supposed to be green and have a colorblind person, which is a minor disability, but you know, they’re not going to see green as green, so you have to put text under it and say
this is green. So it makes you walk through those kinds of things. And, getting course approval for that I think is just really important cause they think of all the things you don’t think about.

Cary talked of being able to enhance the course with more visual components. He stated, “If they were–just to pick an example, let’s say they were a sight disability, I would make sure to put in extra examples or whatever that I feel would benefit them, more descriptive I guess, if that were possible.” Being able to provide this accommodation would require him to have prior knowledge of the student’s need. The course management software at his university was implementing an audio component soon. I asked if he were aware of it, or had any experience with it yet. He responded, “I haven’t seen it yet or seen the demonstration of it yet, but if that were a possibility then I would not, I would not have a problem with trying to take the courses and put it online for the, for a person with that type of disability. We have always in this program been–tried to be accommodating to everybody.”

Rachel, on the other hand, already had her courses in a text-only format so that any adaptive equipment would be compatible. When asked what she would do to make hers more accommodating, she replied, Nothing. Nothing. And, because that student has a disability on, especially with an online, I mean, I believe they’re still held to due dates. Whatever it is that they’re still held to that in particular with an online class. And, if they don’t have the computer skills then they shouldn’t be on it. And, as I said, for me they’re minimalistic, no fancy stuff. So, in terms of disability, nothing.

Nancy wants to provide the necessary accommodations. She contended that addressing the issue on an individual basis would be more effective. She said, I would consider, again, like I say, working and making sure the font and that the type of material that is presented is presented in a manner that would be easy for them to access. I would also–the way I like to teach is I like to know, individually, what a person can do. So, after developing the class, I would generally just develop the class just in general and then make the adaptations according to that particular student’s needs. Because I–personally I think it would be very hard for me to just adapt it where it would be cut across the board where it would handle any and everybody’s disability.
Like Ben, Ann aimed at the different learning styles as she developed her courses. There wasn’t anything that she would have to do at this time to make them more accommodating. Ann declared,

Now, I try, just on theoretical basis in terms of designing online courses, trying to have a multitude or at least a variety of learning, you know, addressing different learning styles, put it that way. No, I don’t think so, because, I mean, my course is primarily text-based, so as long as they had the ability to navigate and manipulate through the course and to read or have read to them the screen I don’t think there would be a problem with them taking my course.

Sylvia described her courses as also being primarily text-based. She stated, “And, so, what I have done with mine is we have the lowest least-common denominator, so that there are very few fancy things in my course. Mostly it’s text-based. Any images that are in there have the Alt-text tabs on them.”

Lee, the professor with a visually-impaired spouse, spoke of his text-based courses. He said, “So, there really wasn’t a whole lot for me to do in terms of ADA, because there was nothing there that would really need ADA compliance… I don’t know what I could really do different.”

Kenny had a different challenge on his hands. Because he is a math teacher, none of the screen-reading software operates effectively with equations as well as it does with text. Kenny informed me,

They are only as good as the instructor allows them to be, because what math teachers would have to do is go in and make their course ADA-compliant by—for instance, even a fraction as simple as 2/7 is an image, and the screen reader can’t read that unless you put alt-text in there. So, in the alt-text field if you put on the picture 2/7 the screen reader, Jaws, would pick that up… But when you start getting curves in there and you start having multiple graphs, it becomes a little difficult. In fact, I haven’t had to wrestle with that yet.

Kenny has implemented some audio additions to his online course. He described it,

They can hear my magic voice go over, usually between five and 10 examples per section. So, if they happen to be deaf, then they can see the problem being scrolled one step at a time, or if they’re blind they can hear my voice go through the problem. And, I read every single word of the problem. Or, if they have learning disability, it allows them
to see it and they can watch it again and see it again and do it again… For deaf students, I don’t know if there’s much modification that I–I mean, the only modification that I can think of needing to do is on the videos is to put closed captioning on the videos. And I, technologically right at the moment I don’t know how to do that. But, I know it can be done because I’ve seen it in other videos.

Responses from the Students

The students had opinions on what could make the online courses more accommodating. Most suggestions came from those who had not participated in an Internet class before. Rosa told me,

I would also be quasi-lenient on any kind of a breakdown on the computer. I’ll be–the deadline is 6:00 p.m., for example, but if they have a hard time, they can’t get the computer to work right or whatever, I’ll say now well, just explain to me what has happened, simple–I would be very understandable and understanding...

Oh, I would give them also my home number, too. They could call me. I would give it to them so they could call me and explain to me, “Oh, I have it written…” Yes, I would do that. I would tell them that I have an office, office schedule, appointments. They could make an appointment to talk to me directly about the computer problems or any kind of understanding of the text of something. So, in other words, we would be very, very compatible classroom setting. Yeah, I would, I would also say, well, we also will have certain days to meet in person and discuss any kind of problems that they have had in the past or discuss any kind of problem that they have in the text understanding a concept. I would make it optional, but because–and, like, for example, I know for myself if I have allowances in my classes…

Andy was more of a hands-on learner and wanted to be around other people. The seclusion of an online course did not appeal to him at all. His suggestion was geared toward learning more than accommodations. He said, “Probably, maybe have some mental or physical activities that they would do on the side, with the learning on the Net.”

Greg was also inexperienced with online courses. However, he did seem to react with surprise when asked the question but supplied a rapid response. He declared,

Huh! Wow! Well, I suppose that you have to–well, you have to find a way to grab peoples’ interest when they’re sitting in front of it. You know, you’re going to be distracted. You’ve got the TV running behind you and kids running right next to you, so you have to find a way of staying focused. So, would you be able to get someone to stay focused on that, by making it more interesting. Making it more interesting, add more graphics. You probably want to put some graphics and audio in with your stuff. No one
wants to sit there and read. You might as well send a book home and mail in your tests. Do a correspondence course.

David, like Andy, wasn’t interested in online courses as this point. Instead, he desired to see the technology available as an addition to a traditional course. His suggestion to make them more accommodating was,

They could put it under streaming video. Courses like that online would help me tremendously, but where it’s all put online on text that’s, I couldn’t do it. I think that they should put all the courses online that way because then you could go back. Any lectures you missed or anything…

Next to Dharma, Alice had the most experience in taking Internet classes. She was straightforward when she said, “There is nothing really that I would do different… I was going to take biology online but I didn’t do it because the books were not textbooks. They were CD-ROM and DVD. And, it wouldn’t work with my adaptive equipment, so that’s going to play a part in the web-based classes I think. Because several classes I’ve seen do operate without a textbook, and they use mostly DVDs and CDs.”

While Dharma had no suggestions on making the courses more accommodating, she did emphasize that the students had a responsibility to keep up with the material. Without this self-discipline, she said the students would quickly fall behind and find it difficult to catch up. When I asked Gina about this, she replied bluntly, “No, because I know nothing about them.”

Overall Perceptions of Students with Disabilities and Online Courses

As part of the interviews, I asked the individuals about an overall perception they may have of students with disabilities and online courses. Many of the people responded with related answers. Some of the others spoke of seemingly unrelated topics. However, they are worth including in this study because it reflects their particular feelings, thoughts, and beliefs.
Perceptions of the Faculty

Larry was pleased to respond that he thought online courses would be beneficial for students with physical disabilities. For those with learning disabilities, he shared this,

Now, again, the students who—I would say the one problem would be like the students I have in my classes who their problem they need is more time for things. Since quizzes are often timed online, that’s when I think a student should let you know in advance, “I have this, you know, problem, where it takes me longer to process and I’ll need more time for my quizzes.” And, I would be willing to do that, with a verified, not just the student’s word, but verified disabled then I would be willing to reset quizzes to give them more time. But, other than that, I think online is actually a plus for most disabled students.

In contrast, Betty stated pointedly that online teaching should be a tool for a teacher, not a substitute. She said that,

The thing that really bothers me about technology, particularly when something new comes out, is the people see it as a panacea and the answer to everything. And so, even though I really like online, and I think it’s a tremendous teaching strategy, it is not the answer to—it’s not for everyone, and it’s not a panacea for teaching. And, you can’t—if you’re—if you’re not a good teacher and have basic skills in teaching and knowledge and principles and concepts, you are not going to be a good online teacher.

Similarly, Don talked of a teacher making the difference, not the delivery method. He, like Betty, stated that the technological component should be an addition to teaching, not a replacement. Don shared,

I don’t ever—I probably will never believe that an Internet course is better than a properly taught on-ground course. It’s, it’s again a personal thing. Even though I think on-ground courses are better, in general, are better than the Internet courses—I mean my on-ground course in probability and statistics, in a lecture section of 75 or 80 students is better, not necessarily better organized, but it’s better because I’m talking from the heart and the head. They don’t see the heart and they don’t see the views that I bring out in class, okay, so that is without question a better course than the online course, okay. And, students will tell me that.

The best of both worlds is a web-enhanced course. That’s absolutely ideal. The instructor’s there to present the material. You had to prepare it. You had to get the materials ready before the class ever started so they’re organized, your examples are there, your resources are there, you can go to a website that you discovered that you can bring it up in class. You can—it shows students how to, if there are applets there you can show them how to use them. I mean, what’s available to teachers today to make them better teachers is overwhelming. It’s flat overwhelming… But, I think a web-enhanced course is probably the optimal teaching environment.
Sheila also assented that strictly online courses were not the way to promote higher education. With an almost 50% fail rate of one course she taught online, she felt that the nature of the course or discipline did not lend itself to the online delivery method. Sheila said that there was a period of time when someone in the administration at her university wanted all their courses to be offered online. She stated, “If you do that, and then on the flip side here you’re saying, well, every program has to be online, it’s like “I don’t reckon!”

There are situations where some faculty believe students should not attempt an Internet course. For example, Justin specifically mentioned freshmen and students with disabilities. He said,

Well, personally, I think that online classes are, the numbers of online classes are going to grow, because that’s what students are going to demand and that’s what competition among universities will be. But, my personal view is that for most students, including those who might have disabilities, the traditional classroom is better.

Less specifically, Sylvia felt that students with learning disabilities would fare better in a traditional environment. She shared,

Then–you know, then there’s the student like you were talking about, students with learning disabilities and–now, visual and hearing impaired students, I think probably would fare about the same in either format, but the learning disabled student I think would do better with the traditional course.

Nancy also felt that students with learning disabilities would learn more in the traditional environment. Nancy misses the “face-to-face” interaction when teaching an Internet course. She said,

I personally think that a student with a learning disability may have more of a challenge in completing an online class successfully. If they’re one of those type of people that have to do hands-on, they learn best by hands-on, they definitely won’t do well in an online class. …but some time where everybody can come. I think that we shouldn’t let online classes be to a point where they just, totally wipe out that personal contact. And, I think it can be done. I really do think that is an important element as far as learning is concerned.
Like Sheila, Cary taught the same types of courses. He also had an almost 50% fail rate in his online classes. He told me, “But, any time that you run into a lab, we’re finding great difficulty in trying to put those online. It’s sometimes impossible to put them online.”

Finally, Ben was the most vocal advocate of Internet courses for students with disabilities. In comparing them to non-disabled students, he declared,

My perceptions are that they are superior, far superior, to our traditional didactic classroom students, and let me tell you why. When–because I do home visits, and that’s my second passion after teaching, these folks are extremely confined. And, I think perhaps together in conversation I mentioned that their world view is limited by the way that they sit in their wheelchairs or whatever their mobility-type devices, and so the ability to open up, or to participate in a cohort like we have in Blackboard is so marvelous, and it gives them literally a new group of friends, a new life. They’re a hundred and ten percent with you, focused. They get all their stuff done. I mean, it’s–I think–I have absolutely no doubt they’d be far superior to the traditional able-bodied person.

Perceptions of the Students

Much less vocal, but no less passionate about their feelings, are the students with whom I spoke. Rosa had a strong desire to take an online course, primarily because she would not have to cope with the elements that were so detrimental to her health. She said,

I mean, that’s why I really want them to do RODP or an online Internet course, because that way, I can–in case I have to go to the bathroom I won’t have to disrupt who ever it is classroom and just leave… I’ll come back to class. But, I’m trying to take care of my–or deal with my disease…

David was more an advocate for having material online as a reference for later access. He was not interested in participating in an Internet course given the nature of the majority that were online at the time. He explained,

You know, the efforts of people to be here, some of the people who I know from Disability Services have overcome very great obstacles just to be here or are struggling with very great obstacles. Some of them are really intelligent. And, I know people who can read and they just know it from the time they read it. And I’m sure that would be a great asset, a benefit for them to be able to do that. But, unless the provisions are made for me an online course would be useless.
Greg felt like online courses could be helpful for some students with disabilities, particularly those with similar problems as his. He stated,

Well, I think it’s actually good for a lot of students with disabilities. You see some people struggling to—people who have problems with hearing, coupled with another disability, who have to sit at the big desk way in the back but can’t hear anything up at the front…

He also shared the other benefits he deemed worthy of online classes:

I think the Internet courses, it’s not just going to be an advantage for people with disabilities but for single moms who have a hard time paying for the daycare, or single dads. I’m a single dad, and it, sometimes it gets difficult to find a baby sitter so it would be easier to, while the kids are napping, do my class.

Gina had not taken any online courses, but she had ideas about them. She said,

Well, for most—for a lot it would probably be good because, depending on what their disability is. But, it also depends a lot on the home support and the home environment, and organization, because… Well, if they’re more—if it’s more of a physical disability than where they’re like in a wheelchair, it’s harder to get around, then it’s going to be probably more convenient for them to do the online at home.

Alice was very succinct in her response. She stated, “I enjoyed it. It’s actually fun. And, you don’t have to fool with freshmen.”

In contrast, Andy said that having the personal interaction was important to dispel the stereotypes that many people have of students with disabilities. He explained,

I think so, because the more experience that I have with the different people the more that they will see that not everybody is the same. I guess, on the inside, they’re like, “They might have some type of mental disability or something that doesn't come out when doing some things.”

Characteristics of a Successful Online Student

Self-discipline

One theme in particular ran true for the majority of the faculty and students. When discussing online courses and their characteristics, it almost always led to a discussion about what type of student it would take to successfully complete an online course. For most, they did
not and would not distinguish between a student with disabilities and one without disabilities. They spoke of the personality of the student, the characteristics the student possessed, and the attributes necessary to participate in an online class.

One of the most prevalent topics concerned the self-discipline of the student. Tammy said,

I think it’s—well, it sounds kind of judgmental, but I think it’s a lack of discipline or, or in this area it’s, I mean, I have to really discipline myself not to forget about the class, so I can imagine that the students have the same concerns.

Sylvia supplied a detailed example when she spoke of self-discipline by a student. She stated,

You have to discipline yourself and say, okay, you know, the kids kind of go down around 8:30. I need to be online by 9:00, I need to spend two hours five nights a week. That’s 10 hours of my 16 hours, and then I have to find some extra time on the weekend, which leaves zero time for hanging out with the wife or whomever else you have in family responsibilities. But, unless you concentrate and dedicate yourself to that kind of discipline, you will not do well with my courses.

Nancy mentioned more than self-discipline in her description. She told me,

Other skills that they would need would be discipline and self-discipline and being able to manage their time and being consistent and, not be a procrastinator, following through with each assignment, keeping up with, not getting behind and so forth.

She had also taught the course as a correspondence course. She further elaborated the need for self-discipline.

And, there have been times, people have called and said, “Can I get in this correspondence course?”, and you go back and you flip back and look at their track record. They were the ones who were half coming to class and all that, and you know because of the nature of the class they’re not going to do well if you let them in that class. And, generally, even if they get in they usually do not do as well as those students who have that self discipline.

Justin agreed that self-discipline was an important trait for the successful online student. He explained,

They need to be self-disciplined. They need to be well-organized, and well, I think those are the two most important traits to just have the discipline to do the work on your own,
because for the most part, you’re digging out the information on your own when you’re taking an online class.

Lee never actually used the term “self-discipline” but he implied it when he said,

The online, and I’ve taken some online classes, and you really do have to set aside a time to be there or you could get—you’ve got to set aside a “class time.” You really have to do that and not let anything interfere with it. And, it’s way too easy, “Well, I think I’ll go over to the grill this time, I’ll catch up later on this afternoon”, and then your friends come over and it’s time to go get a hamburger downtown. “Well, I’ll do it, tomorrow’s Saturday and I’m free all day”, and then your roommate wants to go to a movie on Saturday, “Yeah, I think I’ll do that, I’ll catch up on Sunday.” Well, sometimes you never catch up.

Several of the students also mentioned self-discipline as a required character trait for the online student even those that had never taken and Internet course. For example, Gina told me that she won’t take them because, “I don’t have the self-discipline.” Also, Greg spoke of it in conjunction with others. He said,

Well, you have to be responsible, for one. You’re definitely going to have to push yourself if there’s not someone else pushing you. You have to have a high level of integrity, because I’m sure that means that the tests would be online, too, right?

Experienced in Internet courses, Alice explained it like this,

But, a student going into it needs to know they're going to have to be self-disciplined. Because it is up to you. The professor’s not there every day. You know, you don’t see the professor, and it’s up to you.

Dharma, also experienced, talks of self-discipline. She stated, “Right, and you have to be really disciplined. Definitely, yeah. To be able to get your homework on time. Because if you get behind it’s really hard to get caught back up.”

Responsibility

Along with Dharma and Greg, several faculty members talked of the successful student being responsible and having responsibilities. Lance referred to it, as did Betty, when she spoke of the dichotomous nature of an online course and said, “You have the flexibility, but you’ve
also got to meet the responsibilities of the course.” Lynette also spoke of a student’s responsibilities and the consequences of not being responsible. She shared,

“May I have another day or two to do my paper?” because, ultimately, though, it has nothing to do with us looking eye to eye but a matter of their self responsibility and really desiring to finish the course. I have had to fail online students because they quit so many papers and did not communicate with me.

Coming to class is as much a difficulty for freshman students that I’ve had as an online person saying, okay, I can’t get this paper in to you, and it’s not always a disabled person. It could happen to any… “Oh, okay, are you disabled? Is this why you don’t have your paper done?” I look at the responsibility of the student. “Is this important enough to you to do this, if not please tell me, can I help you?” So many of the students I get now on campus will not even tell me why the paper is not in, why they need an extension. They just won’t do it, simply won’t respond to me.

Of course, I get freshmen who are suddenly away from home and all the freedom. What they fail to realize until late in the semester, and they really acknowledge it by then, is that I partied, I played around, and I always tell them with freedom comes tremendous responsibility… The best students in the world to have–Never miss class, very responsible, but they’ve seen the other side. They realize their mistakes, and these same students that fail because they were not responsible will someday maybe come back and they will be a different person.

When Aileen discussed responsibility, she also spoke of the faculty member having responsibility to the students. She stated,

If you teach right, you don’t just put your lectures online, I would consider that they allow for creativity for the faculty member and the student. They hold the student responsible for their learning rather than the faculty member. They hold the faculty member responsible for designing an environment in which the student can learn. Now, I like to think I do that in the classroom, too,…

When Cary spoke of responsibility, he referred to the act of self-disclosure. He preferred to know very early in the semester that a student would need accommodations. Cary told me,

The problem I did have, though, was they, they did not get the information to me until about mid-semester, at which point, once they gave that information to me, then I was able to make the accommodations. But, at the beginning of the class they did not have the form sent to me, basically stating what was going on or did not even mention it to me till after the first test, then they came back and complained about it.

Nancy also mentioned the problems that delayed disclosure can present. She, like many other faculty members, spoke of including a statement on each syllabus regarding the need for accommodations. She said,
This is the thing I like about disabled services [is] that they meet with the students and so forth, but they also make sure that the student knows that they have some major responsibilities for themselves. And, I don’t really think, if they disclose it middle ways then the instructor is expected to go back and make those accommodations, which is very unfair to the instructor, and it’s unfair to the student. Generally, all the students I’ve had to work with generally have a letter on the first day. I also include on all of my syllabi a statement at the bottom that states that if you have some type of disability or if you have need for special accommodations, you need to see me immediately after class.

Lee spoke of responsibility in a different manner. Recall that he had been developing ADA-compliant courses for several years. His reference dealt with the students’ denial that they may have a problem. Lee said,

It’s part of the responsibility of you dealing with your problem, and I won’t say that I’m light about it, but I just say, hey, you know, everybody’s got some problems and if you’ve got—since we deal a lot with First Amendment, I say, hey, if you want to tape record this, I’m sure not going to censor your tape recording. So, if you need help with a tape recorder bring it in, so if you need help with extra time let me know, it’s no big deal, we’ll handle this. And, they’ll—sometimes I may not know at all. Others will come up and say, hey, you know, I’m going to need some help here.

Kenny, too, had been frustrated with students who did not present their paper for accommodations early in the semester. He stated,

… and it killed me at the very end of the semester where they see that they have to make an 85 on the final exam to pass and then they give you the piece of paper. I’m like, you know, you’ve been making 60s on every test. If you could have had that extra 15-30 minutes or even knowing you had, that could have made a big difference.

**Time-management Skills**

Most faculty agreed that time-management was also another ability that successful online students would have to possess. Nancy said that there could be extenuating circumstances for a student with disabilities. She explained,

And, for a student who is disabled managing time becomes even more critical because there are on times and off times,… So, I think it is more difficult on disabled students, but the differences are, again, it comes back to whether they are motivated, and if they are, I don’t think it will be a problem.
Tammy referred to this when she said, “They have to be able to have good judgment and time management skills.” Likewise, Lynette would get frustrated when she experienced an apathetic student. She described,

… Not having the self-responsibility—I would never dream of not turning a paper in and going to my instructor and saying I’d like to talk to you and tell you why this paper is not in or may I have an extension. A lot of them just don’t even say anything, and finally I have to confront them and say, “Okay, you’ve got a paper that’s two weeks past due, you haven’t been in class in two weeks, is there a problem, can I help you with something?” And, nine times out of ten it’s, “Well, I just, no, there’s nothing wrong I just haven’t had time or I just haven’t done it.” A lot of them just say I just haven’t done it, no explanation other than that.

When queried about the potential for these types of students to be successful in a traditional environment instead, she responded, “No, because they don’t manage their time well.” Don also believed this to be important. He told me, “An Internet course is for students that—a good work ethic, good time managers, are good independent studiers.”

Ann recognized that this may be a new concept for some students and takes it upon herself to teach them the importance of time-management. She stated,

That, I think, is a skill that a lot of students have to learn when they get in there. They don’t exactly know how to manage their time in that kind of an online environment. So, part of, I think, my responsibility is to help keep them on track.

Ironically, Gina was the only student who mentioned this. And, she has had no experience with online courses. On introspection, she told me when asked if she thought time management was important replied, “Oh, I’m sure. My time management stinks.”

Motivation

Motivation may seem to be an obvious requirement for the successful student. Several of the interviewees discussed it. Lance said, “It requires a lot of motivation, too.” He also shared,

Every week as a group they come meet with me. So, I have forced meetings with them to… and, there was not much of a difference between the kind of bright students because a lot depended on their motivation… It’s easy for students—it’s basically convenience, and for students who are self-motivated it makes it easier on them… The student should
have a lot of motivation, and, and it all comes to two or three things. You have to be motivated enough…

He also stated,

So, I think it is more difficult on disabled students, but the difference are, again, it comes back to whether they are motivated, and if they are, I don’t think it will be a problem. But, you have to have the right background. You have to have the right prerequisites and the motivation to work online. It may be more difficult. It may be a little more difficult than normal students would find it, but as long as they have the same amount of—I think most disabled students have a better sense of motivation than not, but there are some examples of not.

Many others have been quoted already as referring to motivation. Kenny shared this belief. He said, “The students who do well, I think, are more highly motivated.” He also made no distinction on strictly a disability, but referred to the student as a person with a particular characteristic. Kenny shared, “I’ve had disabled students who have been motivated and those who have done poorly because they are not motivated.”

Andy was the only student who specifically mentioned motivation. He stated, “They’d have to have motivation to go to class every day and to do the work that is assigned. You have to be able to study a lot to get the grade that you want.”

Organizational Skills

When discussing organizational skills, the interviewees spoke of this in general terms, and some in more specific terms. For example, Tammy, the English Composition professor said, “… And, they need to have good organization skills, as far as being able to draft an introduction to a paper or a thesis statement and then have details…”

Justin was concise when he described important character traits or abilities for the successful online student. He stated, “They need to be self-disciplined. They need to be well organized, and well, I think those are the two most important…” He then elaborated slightly, “I don’t think it has so much to do with the, with the instructor or with anything other than the fact that you’re just a motivated, a more self-disciplined, better organized student in the online class.”
Again, Gina was the only student interviewed who mentioned this. She pointedly stated, “I mean, a nice organized work area…”

Frustrations and Problems Encountered

As Shared by the Faculty

Some of the faculty had mentioned previously the lack of early self-disclosure from a few of their students with disabilities. This wasn’t so much a benefit to the faculty, but they saw it as detrimental to the students’ success. Lance had shown me a letter he had received from a student. It was supposed to have been a doctor’s excuse. It was faxed to him on a sheet of paper with no letterhead and no contact information. In describing his feelings about it, he said,

… like people should not be told or–you can’t disclose. If you can’t disclose that somebody has a disability, how can you find ways to help them? What can I do unless the student comes out and gives me anything that is solid that I can go back and… If you brought a doctor’s excuse or a friend calls me or a friend e-mails me and says, oh, this person is sick and you have, the person told me to tell you that this person is sick, I’m like, oh. If I can’t call you–I’m willing to call and talk any time they want me to, but if I can’t call and talk to you and explain things to you…

Cary had a student who had registered with the disability services office at his institution. However, the student had not presented the letter of accommodation to Cary. He explained further,

Because, see, normally the tests are timed tests are given–you know, students in the classroom are given two hours. The online students I give a little longer, because of the fact that they’re having to type and not everybody is a wonderful typist. So, I do give them more time. And, with this student, I basically left it as an open-ended, as much time as necessary, once he declared his–he had been registered, but he just didn’t bother declaring it to me.

Lee, more than willing to accommodate any need, has become frustrated by students who wait until it may be too late to ask for help. He stated,

What I say in the brick and mortar class or on-site class, I say to the students if you have a disability you need to let me know. I say don’t fail the first test and then tell me you’re dyslexic. You know, we’ll work with you, but I want to know now what the issues are
and we’ll go from there on it. I don’t want it to be a surprise because it’s not good for me it’s not good for you. You don’t need to be failing a test because you’re embarrassed. You can talk to me in private, whatever you need to do. All I need is a piece of paper from [the disability services director] that says you need this. I don’t need to know your disability.

In addition to the lack of self-disclosure, one of the primary frustrations of the faculty that emerged dealt with the RODP program itself. For example, Lynette had taught an online course the first semester the program began offering classes. She told me about not receiving technical support from the RODP administration,

But, I would see—we would get like e-mail from RODP [sent] from other people saying that I have this problem, I have this situation, how do I handle it. So, they would just send it all on to us. If you have this—in other words, if you have this same situation, this is how we handle it with her. But, as far as communication, that was my biggest complaint with RODP… If I faxed them, if I tried to call them, I never got responses accept inadvertently like hers. And, she wrote a very, very nasty letter to them about their system was not set up right. I think a lot of that has been taken care of from my understanding, but I was one of the first people at [Institution X] to actually do this program.

Rachel talked of her early days with RODP. She stated,

I just think some of the things weren’t thought out. I mean, they wanted to move on it, and I’m glad they did, but I think some of the horror stories I’ve heard could have been worked out if we had of kind of waited. There wasn’t enough personnel. And, I think you had a few people—there was some training, but, I don’t think the training was adequate at the time. So, I think it’s working out now, and I think ultimately on any program, individuals who are committed just kind of endeavor to make it work despite—but, I—infrastructure, there’s the word. I don’t think there was an infrastructure. I think the state said here’s what we’re going to do, and you had people at the state level [who] were good, but they weren’t good enough to carry as many people in things as they expected to. So, it wasn’t their fault… But, I don’t think there was an infrastructure. I think you can set up a program, but then I think you have to take responsibility and have some kind of a support network that goes on as it grows.

Tammy had a class that she described as her worst. Her frustrations were aimed at the students. She said,

I think I would prefer face-to-face because I get so, sometimes, I get really frustrated with the students in the online class. And, I wonder is it, is it me, is it them? I wish I knew.
And, then I try to make some changes to it to make it better and–sometimes I have really, really good classes. It’s like they’re either really, really strong or they’re really horrible. Last semester they were really bad. I’ve never had such a bad class.

The students were supposed to critique another’s papers. That was part of the assignment. However, she said that is not what happened. Tammy stated,

Well, people just don’t respond. It’s like I can’t get so and so, I can’t get anyone to take a look at my paper, I posted it on the online discussion board and no one ever responded. So, I’m not sure what is going on with that.

Don’s comments related to the other faculty members who refused to learn the technology needed to provide students with multiple learning methods. He elaborated,

I’d say, well, would you consider that a greater hurdle or less a hurdle to deal with having no eyesight or having being in a wheelchair. Tell me which is the greater hurdle for you, and so you’re handicapping your students, and this is what I mean. I would say this to the teachers that are here on campus. I said, you know, if that’s a handicap— I mean, if that’s something that they have to overcome to be better, to get educated in the job, technology can’t be that much of a hurdle to you. Now, I’ll ask you the question again, would you rather be without your eyesight, okay, or rather have to overcome this technology barrier to get by. I just think, you’re saying I’m not, I’m not being the best–as a teacher, I’m not being the best that I can because I’m afraid of meeting this challenge or overcoming this hurdle.

I think it’s all a part of lifelong learning. And, here are teachers in arts and sciences, let’s say, who are supposed to be advocates of lifelong learning, when they themselves are not lifelong learners. Why? Technology is part of our culture right now. If they thought that they were going to go out into the real world and get a real job with what they know about technology right now they wouldn’t even get to first base. I’m saying if they expect our students to be lifelong learners they lose some credibility if they’re still doing today what they did 10 years ago. They can’t be life long learners… I think it’s a part–part of it maybe is a resistance but deep down, Janet, deep down a little bit of laziness. That’s all there is to it, laziness.

A few of the faculty told me about instances in which students had experienced frustrations. In one case, it was related to the course site for an online class. Rachel said, in reference to links for other resources from her course web page,

Students saw them, but many of them weren’t working. So, that, that caused some problems last semester cause it’s got–and, I kept saying people there are other links; these were only put there for your convenience. But, they became frustrated because they saw them there and they wanted to use them.
Nancy was telling me that she thought online courses were great for students with disabilities, particularly those with mobility problems. Her example from a traditional class involved a student who had to travel in the rain to get to class one day. She said,

And, at some point, they are so frustrated by the time they get to class they’re not very in tune to what’s going on in class. I’ve seen that happen, particularly when I had the young lady that was in a wheelchair.

As Shared by the Students

Three of the students had experienced frustrating and confusing treatment by some of their faculty members. One was not directly related to the disability, but the other two were. Dharma shared that the teacher of one online class failed to give proper and thorough instructions for a paper, which led to points off for each infraction. As a result, she and many others were given a score of 0 on the assignment. She explained, “But, he finally, because he had done it to so many people, came back and gave us 70 if we rewrote the paper without the passive language. But, the communication, his communication skills weren’t that great.”

The other two incidences were not related to an online course, but there was a direct connection to the teacher’s behavior and the students’ disabilities. The description as told by Rosa is,

I have one professor here that she did, she didn’t quite understand it. She signed off on the form. She didn’t quite get it I think, because… I don’t know. To me–I thought she–I didn’t tell her I had MS. I don’t know. She may have talked to another student. I don’t know. I just don’t know, but the point is that she–I came to class late one day, and because the medication affects me, … the whole thing and she said that she didn’t know how I was going to make it. And, I was like, that really did hurt me a lot and it made me very sad how she was saying that cause, I mean–cause the fact that I am here at this point at this level it’s like–I’ve had this disease since I was a junior as an undergraduate. And, that was like six years ago. And, and I don’t know why she would say that, so I thought that’s very, very, very candid and very, very insensitive that she would say that she didn’t know how I was going to make it. I’m thinking, you know… It’s almost like–yeah, it was very discouraging, but, of course, I got over it eventually. I’ve been here–if she were my teacher again I would have to drop the course. I couldn’t deal with that.

In Greg’s case, he didn’t have the teacher approach him initially. He told me,
Well, plus it eliminated another problem I had with one of my instructors who I think he just didn’t like me. I had to give him my disabilities paperwork three times because he—I don’t know, I think he just didn’t like me. He would go by me with—every week we would have one writing assignment to do. At the beginning of class, we were supposed to take 10 minutes and do a writing assignment, he’d give it to you, you would have your 10 minutes. Well, he would start giving them to the people up front and then start the 10 minutes, come up to me, and give me mine at the end. I would be the last one, even though the paperwork said that I was supposed to get extra time to do the work. Any writing assignments I was required to get extra time.

I can remember three times specifically, three times, where he would, he started on one side and worked his way up, walked past me, didn’t give me anything, started walking down the other side and giving them their stuff, and the person who would sit next to me, sometimes there would be someone there. He just looked at me like he was in awe and got up and went and got me one and brought it back for me. But, it was, it was truly amazing.

I asked Greg what he did about this situation. He explained,

I gave him another copy of my sheet and I said “I’m required to get extra time for the writing assignments, because my disability doesn’t allow me to write very quickly.” And, it continued to go on for almost the entire semester. See, I’m a new student here. I didn’t want to make too many waves and whatnot, so I just wrote stuff on my evaluation report… I can struggle to listen, but with the books right there, I can just read what’s in the book instead, you know. It’s—that one thing just because we had just a specified amount of time and I would get mine last which instead of 15 minutes I would get eight minutes.

Probing further, I asked Greg how this made him feel. He said,

Pretty horrible. It was quite disheartening after the first two or three times, and I ended up trying to focus on being able to get as many things written as I could. I would—you know, the night before and up a couple of days before, I would study for what I wanted to write for any questions he would come up with. Well, that cost me out of studying for the test, and I ended up getting a B-minus in the class. But, those papers were 40 percent of the grade, so I couldn’t let those suffer either. … I just kind of went along with it. Just worked harder and harder and harder and its only B I’ve ever gotten while I’ve been here. Everything else has been an A.

When asked what he would do if the situation ever occurred again, Greg stated,

Well, yeah, I would definitely go up and say something to the instructor. That was actually ridiculous. And, looking back, I should have went and said something, but like I said, I didn’t want to make too many waves in the first year. The last thing I need is to get him for another course and end up with a D. I would never take him again. I will never take his class ever again no matter what he’s teaching.
Before finalizing the topic, I asked Greg if he thought he knew why the instructor had acted in this manner. He told me,

I don’t know. I have no clue. I just don’t know. The, the other student that was sitting next to me he didn’t understand either. He was in awe. He just couldn’t believe it. But, I did talk to the grad student, and he told me, well, come in early. So, I started coming in early hoping that he would hand me mine before he handed everyone else theirs, but it didn’t work out that way either.

In a non-college environment, Andy had also had bad experiences—not with faculty but with other students. He described it to me, “The people here are accepting, because when I was in, in middle school and high school I did get mistreated somewhat. Really the only thing that they could do was just, move me to a different side of the classroom.”

Greg had experienced frustrations with a particular type of classroom—the auditorium style. He told me, when explaining about the faculty members who taught in the rooms but would not wear the lapel microphones,

Well, the reason I have to sit in the back is because of accessibility and the chairs. You know, those auditorium seats and what, there’s no room to work with, there’s no room to sit, and it’s just, navigating your way through. With multiple sclerosis you also have problems with your balance and walking and such, and it makes it difficult to—it would be impossible to work from those small desks. So, I suppose if they were more accommodating in the seat—I’ve never seen one that’s actually full. …I think they could maybe [take out] two of those seats and put in some larger with a bigger desk working space, maybe a little more room between the aisles.

David has experienced many frustrations related to his dyslexia. He told of one instance,

Uh, you know, she knew I couldn’t do the next level work, and instead of letting me go on, she held me back. And, I really wish that, that I hadn’t had to do it three times. And, it was really aggravating when I was doing it, but the fact was, was I knew I couldn’t do the next level work.
Additional Issues to Consider

Single Parents

In consideration of online courses, many of those interviewed talked of how they would define being a single parent a type of disability. Among them were faculty and students alike. Online courses could better fit the hectic lifestyle of the single parent, whether disabled or not.

Lance was the second person interviewed, and the first, without any prompting on the subject, to talk of single parents. He said,

And, I would consider that as a disability if you had a family situation where you had to manage the kids. That’s almost like a disability. You don’t have the same time that other students do have. You’ve got to feed the kids, you have to work jobs, that’s like a disability. You have to put food on the table. And, still you have to go to class.

Betty talked specifically of one of her students. She stated,

I’ve got one lady who has three children, and two of them are special-needs kids. And, she’s—I mean, you know, she’s trying to succeed. So, you know, she’s “disabled”, and she’s disadvantaged.

Lynette was in college at the same time she was raising her children. However, online courses were not offered at that time. She clarified,

I do firmly believe that RODP studies, online studies, are excellent for students of particular needs, whether, as I said, it might be a woman with four children returning to school. She has a form of a disability, because within her, and I know what it cost to pay baby-sitting and having no one in a family who can help. That’s ideal for her in not having to worry about paying $500 a month for someone to take care of the children. She has—and, usually these type of students have a goal that your freshmen don’t. She wants to do something with her life after the children get grown or even as the children are growing.

David, describing how online courses could help him if it were not for the dyslexia, told me, “I’m also a single parent, and that would make it until—after I put my kids to bed is when I do most of my studying.”

In addition, Greg and Gina, both students, were single parents.
Situations to Discourage Participation

Many of the interviewees, both faculty and staff, were questioned about situations where they think it would be applicable to discourage a student with disabilities from enrolling in an online course. Some could think of no reason under any circumstance. For example, Tammy said, “I don’t think so, not that I can think of.”

Larry stated, “What I would say to the student was only if you have extreme doubts.” Lance, in referring to his difficult software engineering course explained,

I guess there’s the same kinds of problems they have on campus so they try to come online and try to get a free grade, I guess. I don’t know. I’ve even clearly suggested to this student that this may not be the right environment for you.

Betty was more restricted in her student population. She had doubts about “leading the student on.” She told me,

Because the whole intent to that very first course is to let people know what nursing is about. It’s an orientation to college. It’s an orientation to nursing, and what if–I mean, if the person is successful and they think they really want to be a nurse, you know, I feel like maybe I haven’t been fair to that person, because if they can’t do certain things they’re not going to be successful–I mean, they won’t be able to get into the program.

Ben was adamant in his response, after supplying a descriptive, factual analogy. He elaborated,

In my particular area of medical expertise there now is circulating a picture of a hands-on health care provider, who just happens to be a person with a neuromuscular disease, in her wheelchair. She has a speaking valve on her tracheostomy, and she’s treating a patient. I think that the hands-on, for those who can indeed move their hands, that is, that they could be admitted into many new levels of care. I think that they have a very unique perspective. Therein, I see absolutely no physical boundaries or any limits to a person who can–if they can access the education, I don’t see any limit to anything they can do. And, that would be right up to being a physician.

Nancy preferred to know of needed accommodations ahead of time. If it was something she would not able to provide, she would perhaps discourage the student. She explained,
I would ask them what they need—what extra thing do I have to do that will help them take this course online. And, if I can’t do it, then I would recommend they not take it online.

Sheila took the pragmatic approach when she responded. She declared,

Whatever their other disabilities may be, if they can handle the math, they can handle my classes. If they need a lot of hand holding to have the insights into mathematics and they just can’t just read, what I post is, I post kind of lecture note skeletal outline online. I post example problems worked with the answers and all the steps spelled out online. And, I offer e-mail or telephone or face-to-face discussions, as needed, whatever. The students who pester me to death with e-mail are the ones who at least survive the course.

Rachel said it should have nothing to do with the disability but with the individuals’ maturity level. She explained,

I think I would discourage some students with disability from coming to college. Not because of their disability, but they’re not ready to do it. But, that has nothing to do with their disability. And, some people are not mature enough to separate them.

Similarly, Justin spoke of “average” students being better off in the traditional environment. He had also mentioned that freshmen should not attempt any online courses. He stated,

They would be better—they would be better because of the interaction. I think a great deal is learned where questions are asked and answered in a class where all students are involved, not just the student asking the question. I think for everyone involved, even though I don’t think we can avoid taking more and more courses online. I don’t think that is better than the traditional classroom for average students.

Lee’s examples dealt with the personality needs of the student, learning styles, and learning disabilities. He said,

If a student—and, I wouldn’t know what the disability is, if a student needs lots of social interaction, that would be, online would really be a problem. And, I don’t know what the name of that problem would be, but if it’s just somebody who needs a lot of stimulation, who needs to interact a lot with, with people, probably wouldn’t do as well in the online class. But, that would be a problem maybe. For learning styles, if a student is aural, needs that aural stimulation, then this obviously wouldn’t work at all cause it’s all reading. If the student doesn’t read well they might have a problem with it. Some students I guess learn better by lecture, having it spoken to them. So, that—you’re not going to get the
lecture material that way. It’s going to be all reading, so if there’s a reading issue that might be my concern. Somebody who’s dyslexic might have a problem.

Alice decided to drop an online biology course after discovering that the textbook did not come on CD or DVD so that her screen reading software could handle it. She used that as an example of when a student should be discouraged from taking an Internet course—if the adaptable format were not available. She said, “I don’t know of a situation, but… yeah, that biology class. It would have been more hassle than it was worth for me to take it.”

Awareness of Faculty

In discussions with the faculty, references were made to some not being totally aware of the ADA requirements in providing reasonable accommodations for students. They spoke of their colleagues or peers and the need for awareness educational programs or presentations at their campus. In addition, one faculty member talked about the lack of participation in events that were offered.

Aileen had been active in the technology needs of students with disabilities for the past several years. She told me,

So, you know, the non-recognition of need, but it’s also a time when we don’t have every faculty online yet and we still have faculty who are very hesitant to do that. And, so, you talk to them about disabled people being online in their classroom, what do they do. Well, they don’t even know what to do yet for their ordinary everyday students… that the Disabilities Act applies to computers. I bet they think if you build a ramp or you put in an elevator you’ve got the problem solved. So, it’s truly a lack of knowledge.

When discussing the lack of participation when a presentation for faculty on how to provide accommodations with their online classes was made, Aileen said,

… and [name withheld] did a presentation to the faculty on how to help disabled students and how to design websites to help and I attended that and two other people attended it.
Sheila, in a very honest answer, responded to the question. “What can or did you do to make those more accommodating to our students with disabilities?” She stated, “I don’t think I thought about your students with disabilities. I just was thinking of the traditional professional [course name withheld] students.”

Faculty taking online courses

Often, I would ask a faculty member if he or she had participated in an online course. Some of them offered the information on their own. Tammy succinctly replied, “No, I’m not sure I would want to.” Cary offered this explanation of his first time as an online student,

It was a waste of time, and that was my first experience at it. And, of course, I tried to take some of the things I learned in that and bring them back with some improvements, but it’s just–there’s–for an instructor, there is so much time spent trying to get those lessons ready, to do the planning, communications with students.

Nancy’s experience as a graduate student piqued her interest to the point that she began developing them. She related, “Yeah. Actually, I did, and that’s why I got really interested in developing online courses. I took two online courses when I was working on my graduate degree at [university name withheld].”

Lee’s online courses emphasized to him the need for discipline and time management. He stated,

I’ve taken some online classes, and you really do have to set aside a time to be there or you could get–you’ve got to set aside a “class time.” You really have to do that and not let anything interfere with it.

I asked Alice if she thought taking an online course would help faculty to become better developers and teachers of their own online courses. She said, “Not really, no.

Pass/Fail Comparison

Of the 17 faculty I spoke to, 13 talked of the pass/fail comparison when considering their online course and the same course they have taught in the traditional environment. One of the
underlying perplexities that emerged was the fact that many of the faculty didn’t know what happened to those who had withdrawn or failed. Often, they suspected the same student may have re-registered for the same course in a later semester. Larry explained that his pass/fail comparison was relatively equal—meaning the proportion of an online class that failed was roughly equivalent to the proportion in the traditional environment that failed. He elaborated,

Most of them who fail, I don’t—in general I don’t fail a lot of students. I don’t give a real lot of A’s, but I don’t fail a lot of students either. Generally, students who fail are students who do not complete the work. They actually don’t do things, and I would say that is maybe—and, there are students who drop out. I don’t really know—to be honest I don’t really know what happens to those. … And, I would say back to your answer to that I would say the grading is fairly comparable on the online versus the in-class.

Betty expressed a similar situation. She told me,

Let’s see,—oh yeah it’s comparable. In the R.N., this course here, I had one student who just absolutely could not—I mean, she just wasn’t disciplined enough and got an F in the course. She just couldn’t do it… But, she never came back, so I don’t know what happened to her.

Like Larry, Lynette spoke of the students that quit attending and/or doing the work. She explained,

The ones who fail my class pretty much are the ones who quit attending, because it’s very important in an English class that you be there daily, because of not just my instruction but the daily work counts a whole lot in my class, because that person is evolving as a writer. And, to evolve, the steps are there. The sequences are there. A person who misses a class is literally out in left field somewhere because he or she—and, this is a hundred percent. He or she who does not have good attendance just about always does not make a good grade because they’ve missed the little components…

Unfortunately, Tammy’s pass/fail ratio wasn’t as high as some of the others. She clarified,

Oh, they’re a lot worse online. I’d say most people in the face-to-face class pass, but I think last semester two-thirds of the online students failed, and I’d say half of, maybe a little bit more than half, were students who just dropped out. Now, those students may have withdrawn officially; it just wasn’t showing up in my online grade book. But, yeah, the failure rate has been high.
Sheila and Cary taught the same type of courses, those of a discipline which they said did not lend itself to easily teaching online. Sheila responded, “Passing rate is less than 50% over the Internet students.” Cary was more specific when he said,

The pass ratio is 50% or less, mainly due to the fact that the students do not realize how much time it takes to do an online course. The ones who access it more often and longer are doing a much better job. Yeah, I did look at that just to see because it started worrying me when I first started teaching these courses and so many people were failing. I still believe that they need the face-to-face. Many students do not learn on their own. They need a face-to-face contact. It takes a very special student to be able to do it completely online with little or no contact with the professor.

Sylvia had even done some comparisons of her courses. She described the method she used,

About the same. For the first four or five years that I taught it, and I was keeping track, running a constant study keeping track of retention. Yeah, retention, course outcomes. I even kept track of outcomes on each exam and, and compared it, the traditional classroom with the online classroom. And, one semester I was teaching one as an online course, one as a telecourse, and one traditional. So, I did a comparison of the three. The telecourse people had the worst outcomes with, and then the traditional and the onlines had about the same.

Justin said that his pass/fail ratio showed no significant difference between the types of classes. He stated, “About the same. If there’s any difference, grades might be slightly better in the online class. I have a theory; I have no explanation.” Lee also had a theory that the collaboration of his online students produced a slightly higher passing rate than those in the traditional environment. He explained,

The grades tend to be a little higher, I think, because of that. It’s a little bit higher. I don’t think it’s significantly different. The pass rate is a little bit higher but not significantly so. There are students who still do very badly on the exams, and one thing [is] they just aren’t trying. So, I think statistically the low grades are just as low. The high grades tend to be a little higher.

Lee discussed the reason why those who failed did so. He said,

They are the ones who don’t participate very well. Their e-mail discussions are real short, a couple, 300 words. And, they’re supposed to be 500 words minimum, not very in-depth. They haven’t thought about the answer a whole lot.
Kenny had a somewhat different view of why his online passing rate was relatively high. He said,

My retention in on-ground hovers around 70%, 70-75%. And, the online, I could start with 15 students, so any one student is a big hit if they happen to leave. And, so, I usually end up with between 55 and 65 percent. But, of those that finish, almost all of them will pass. Only—if my memory serves, only two students have failed the online class that have actually finished, that took the final exam. Academically, they may be the same. I think they—we typically attract the, the more nontraditional student, ones that are more sure and confident of their ability, their ability to learn, their ability to reason, their ability to read and figure out and read directions. A lot of times, students that are younger than that, they, whether they can or cannot, they’re not as confident. So, that may have something to do with the fact that almost all students that finish and take the final exam end up passing.

Final Comments by Interviewees

Before wrapping up the interviews, I asked the participants if they had anything else they would like to share regarding students with disabilities and online courses. Some of them did, some of them did not. Some were the longest dialogue the faculty shared during the interview. The interesting and relevant pieces that were not already discussed are presented in the section.

Final Comments from the Faculty

Humanitarian Responses. At least two of the faculty talked of how knowing they had a disabled student may prompt them to treat that person differently. Tammy had mentioned being “hyper-aware”, always concerned about whether her actions or words were appropriate. Ann emphasized the need to create more awareness. Lynette admitted,

Okay. I guess probably in finality I’d like to say that it doesn’t matter to me if an individual has a disability or not on an online course. That’s not the emphasis or the essence of my teaching. I actually prefer not to know, because I tend to be a very compassionate, caring person, and I could see myself leaning toward giving an individual with disabilities maybe a little bit more, you know, things to get by with than I would the average person. But, it shouldn’t be that way, and I realize that. And, I really give no—I really make no difference with the students I have on campus with disabilities and the ones who don’t.
Tammy expressed a real desire to learn more on the topic so she could apply it in her online courses. She stated,

Well, I would like to learn more about ways that I might be able to make my online class more friendly for students with disabilities, and I think it would be beneficial for people, for instructors, to know if there are people with disabilities in their class that might affect their, their work in the class, I guess. I mean, if it’s something that wouldn’t affect their work, then of course we don’t need to know. Sometimes I think it’s, it makes teachers and it would make me a little bit apprehensive to know that there’s someone in there just because I, I try really hard to make the class accessible to everyone. And so, I’d be always wondering is this working and so I would like to be able to have a good working relationship with the student so they could let me know if something isn’t working because I feel kind of naïve in that area. And, I think it’s, it seems to be an area that needs to be explored further and probably should be addressed in training more. It was very minorly when I underwent my training. I would like to see more about it.

I really think it’s important that faculty be made aware of. If you are a faculty member and you’ve never had a disabled student, it doesn’t even cross your mind. And, those of us that don’t have disabilities are so used to the visual aspects, like a web site and everything, and you get—especially faculty who are not as aware get very caught up with the look of things, the colors and the graphics and all of this kind of stuff because that’s fun. And, you know, it is fun to go out and find all of this kind of stuff, so it really is important that faculty who have never had a disabled student get exposed to that. At least made aware of it so that if it does happen they kind of think, okay, I can, I need to rethink what I’m doing.

Lee is concerned with appearing too patronizing to students with disabilities. He declared,

I think this may be an ADA issue, rather than a technology issue, but sometimes I’m really not sure what to do with an ADA student. In other words, what I mean by that is how much help do you give before you’re really interfering? The students are adults; how much help do they want and need. That can be a concern sometimes. When Rachel and I were dating, it was a learning situation for me as well. You know, how much help does she need, what do I do with her, do I need to guide her everywhere or does she strike out on her own. So, we, in the course of dating and marriage we’ve worked those sorts of things out. I think as with a regular student or an ADA student as well, you need to kind of figure out how much help do they need, and the student needs to help you do that.

Finally, Kenny talks of the need for faculty to have increased awareness of ADA compliance.

If involved with training, there are some steps that’s involved I think in faculty. The first step is faculty need to be aware that there are issues involving ADA compliance. That when you put an image of an equation or of a something happening that a student—
blind student is not going to be able to read that. Teachers need to at least be aware that there are different learning styles, not everybody learns like you do by reading. You can’t put a mile’s worth of notes up on one web page and expect students to go read through that. I mean, I like reading about some particular topics, but I have a hard time reading on the screen like that.

Personal Interaction. Cary talked about an alternative to Internet courses—an alternative that would allow a student to have human interaction without having to attend a scheduled class on campus. He described this,

Well, I think with the online courses there are ways that things can be done. I just read an article two days ago on Virginia Tech and how they were teaching advanced math courses through computers. But, they did it in a different manner than the students just at home. They set up a lab in a mall, a shopping mall. There are banks of computers and they were divided into areas such as pre-calculus, Linear algebra, and those. And, then that center was manned 24 hours a day by faculty and graduate students who were there—the students were taking the course online but if they had problems, there was somebody there, a mentor, who could—they could raise their hand or they had a way of saying—I was thinking they said they turned a cup upside down on top of the computer indicating they needed help and then somebody would come by and they had a face-to-face interchange for that help they needed. And, then they were able to move on. According to the article, Virginia Tech found it to be somewhat successful. I think they’ve been doing it since ’99. I would like to see if any further studies have been done by Virginia Tech on that. But, it was through their math department. It was interesting. That’s the first time I had seen that approach, and I think if we look at other approaches to online, even for people with disabilities, there might be a higher success rate, but they still need some form of face-to-face contact, confronting of an instructor or somebody who can help when they have those difficult questions.

Nancy also felt that personal interaction was a crucial component. She said,

My personal opinion I think it’s fine to have an online class but I do think you need to, within that class period, you need to develop some time into that time line where you can actually physically meet, either at the beginning or the end or both,…

Miscellaneous. Larry spoke with a high degree of enthusiasm about his online courses. He declared,

I say in general, while I still have doubts about it for, this is for the disabled or other students, and I still think face-to-face teaching is superior. It’s going better than I thought it would when I first got into it. I think the students are in general more serious about it than I thought they’d be, and while there are constant problems, none of them are insurmountable.
Justin’s response was of a predictive nature. He stated,

Well, nothing other than, than the fact that I think certainly the numbers of courses, numbers of students that we serve with online classes it is going to increase probably.

Cautions. Betty and Sheila were in agreement with their sentiments. Sheila states that not all courses were suitable for adaptation to an online environment. Betty said that it was not the ultimate answer to teaching. Betty shared,

Well, one thing I’d just like to say that online courses, whether it’s for disabled students or any student, the–I have always enjoyed in life the use of technology. The thing that really bothers me about technology, particularly when something new comes out is the people see it as a panacea and the answer to everything. And, so, even though I really like online, and I think it’s a tremendous teaching strategy, it is not the answer to–it’s not for everyone, and it’s not a panacea for teaching.

Sheila declared,

I don’t know how anybody could teach lab-oriented type courses online. I’m thinking of biology lab, where you have to do dissections. I’m thinking of chemistry lab, where you have to mix stuff together and then do a titration to figure out what it was that you had in there to start with, assay analyses. I’m thinking of physics. I mean, yeah, you can watch the video of the little elephant rolling down the sandbar and say, okay, we’ve got friction on his backside, but how on earth do you do a lot of the kinds of lab-practical kind of hands-on exercises via distance ed or the web? And, I don’t think anybody else does, either, because when I look at other schools who do engineering and engineering type focuses, and [program name withheld] is as close to engineering as you’re ever going to get, nobody’s teaching that stuff online. And, to have to think about what could I do to teach my entire B.S. degree online just blows my mind. It’s like who’s crazy here?

Cheating. Larry mentioned that many people thought cheating might be a common element of online courses. However, he felt that he would be able to recognize a problem if it arose. He said,

My perception is that there is not much cheating. Yeah, I would be–if somebody had poor written things and poor discussion posts and did a really well on a quiz it would make me suspicious, which is why I don’t think I’ve had any, because I think it would have stood out to me.

Kenny also shared with me his thoughts on cheating in an online course. He stated,
Yeah. And, the same thing with cheating. I mean, they still tend to cheat. There was a documentary on Date Line about a month or two ago where students were using their cell phones to text message people, and they were—and, it’s typically something in large lecture, lecture halls. Where our classes are limited to 25, we can easily tell if somebody is doing that.

**Final Comments from the Students**

Again, the students were not as vocal as the faculty, but a few did have some closing comments that are worth relating. Some of the students made observations while others offered suggestions.

_Suggestions_. Greg had several comments about the state of his campus in regards to being handicap-accessible, among other things. He stated,

> There’s so many things that could go seriously wrong. I don’t know. I don’t know if Internet courses are what they would need to accommodate for people with disabilities. I think they need to revamp this entire campus. This campus is not disability friendly.

> Say you were in a wheelchair. Try to go around this campus pretending you’re in a wheelchair one time. You’re not going to be able to do it. Trying to find a wheelchair-accessible door is hard enough. The elevator over at [building name withheld] was out for like two months last semester. Now, how is anybody supposed to have been able to—if they were in a wheelchair, how were they supposed to get above the first floor? It was impossible.

> … and they did it on the sidewalk in front of the administration building, and yet it’s still the same old elevators and yet there’s still only a limited amount of wheelchair access to any of the buildings. And, there’s, I believe, one accessible entrance to every building. It takes you an extra two or three minutes to get around to it. And, it’s just…

> I know a girl who has a service dog. She has multiple sclerosis, too. She has a very large service dog, and the instructor tried to tell her she couldn’t bring that dog into the classroom. This is—well, and he said, well, you’re not blind. Some people believe, though, that if you have a dog, you have to be blind to be able to have that dog be around, it has to be a seeing eye dog. And, that’s not true.

Alice had suggestions on how to increase awareness among peer institutions. She explained,

> The more students with disabilities who take online courses, the more adapted they’re going to become. And, I would recommend that disabilities directors from, say, the Tennessee regents would—they need to like have a meeting about online classes.

> Yeah [they should recruit students]. And—cause not every class online, disability or not, is going to be a good idea. Like the language classes. I just don’t think it’s a good
idea unless you’re proficient already. And, like the bookstore. I had to hassle, hassle, hassle to find out that that book was not a book it was on CD, you know. And, even letting you know who your teachers are, because a lot of times they’ll say, well, we don’t let that information out. But, for a disabled student it’s good to discuss with your teacher before class starts, because me and my teachers spent like, in the Spanish class, a week and a half or so or two weeks just getting all the problems sorted out, which could have been done earlier. But, I think blind people— I say blind people, cause I mean other disabilities, except people who can’t use their hands, they have no problems with the computer. You know, a person in a wheelchair who can use their hands, they really wouldn’t have a problem with the computer, or a deaf person really wouldn’t have a problem with the computer.

*Personal Observations.* Rosa said,
I know there are a thousand and two I have. I think about all the time how, I mean more just I guess—I know for me personally, I feel very pressured to think too fast. If a professor—if everyone is on the same level and but see I am at the point now I’m not, and so I really want to be able to like think or to operate on how I know what works for me.

David expounded on the fact that he was under the impression for many years that he was “stupid”. He only had a learning disability but it has taken him many years to learn how to adapt to it. He said,

I really thought that I was stupid all my life until I found out through vocational rehabilitation that my IQ had to be higher than normal before they could classify me as dyslexic. See, I always thought that the reason I couldn’t do school work is I was stupid. I thought that the reason I was a mechanic and I built houses and things with my hands was because I was stupid and that’s what stupid people had to do.

… and she helped me with math and stuff. And, we sat around and talked a lot. And, she said it kind of scares me to teach you to read, and I said, “Why is that?” And, she said, “Because there’s an awful lot of idiots that know how to write.” She said, “When I teach you to read I want you to remember that you’re going to have to weigh everything with your intelligence that just because it’s on paper doesn’t make it true.” And I’ve run into an awful lot of teachers that I have to remind to myself that the nonsense they’re teaching I need to learn to get through that class. I don’t have a choice but to get through college. I’m going to have to do something else.

*Summary*

Much rich, thick data were obtained from the interviews. There were discrepant viewpoints in certain areas between the faculty members and the students. While the students
tended to be less verbose, there were more emotional moments when some spoke of the discrimination they received because of their disabilities.

During the conversations, the emergent method was followed, primarily after the responses to the research questions were elicited. The same questions were asked of each group, in the hopes of producing answers to the four research questions. In addition to these, I asked questions that were not on the interview guide for the purpose of obtaining additional information that could reveal more of the respondents’ feelings and beliefs.

Analysis was done using a constant-comparative method. Reiterative coding within the NUDIST software allowed me to compare responses from the two different groups. It also allowed for re-classification of the interview text if needed, and assignment to multiple sub-nodes when appropriate. Manipulation of the data was constant, including re-coding after earlier interviews as more appropriate themes or categories began to emerge.

Further consideration of the research questions will be conducted in Chapter 5. Data from this chapter resulted in developing findings, conclusions, and recommendations.

The sample group is not representative of any larger population and cannot be classified as such. Therefore, it is not proper to generalize the findings of this research beyond the participants in this study.
Chapter 5

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to identify important factors that should be considered by faculty members at selected public institutions of higher education as they plan, design, develop, implement, and evaluate Internet-based courses, in order to make the courses responsive to the needs of students with disabilities. In addition, the study will explore perceptions of students with disabilities in terms of Internet-based courses offered at their institutions. A qualitative method of research was employed to obtain thick, rich, descriptive data.

A total of twenty-four individuals were interviewed and audiotaped. Seventeen were faculty and seven were students with disabilities. The tapes were then transcribed by a professional transcriptionist and imported into the NUDIST software program. Data were analyzed by a constant-comparative method, which employed the inductive process. Several categories emerged, many of those with sub-categories attributed. Often, a piece of data was re-categorized after reading and re-reading comparable sections of text from other interviews.

Analysis of the interview data resulted in the findings, conclusions, and recommendations discussed in this chapter.

Findings

Extent of Participation

The effort to answer multi-part research question #1, “To what extent are students with disabilities participating in Internet-based courses? Why have they chosen to enroll in such courses? If they have not done so, what are the reasons why they have not?”, was strenuous. The faculty members often said they had not had any students with disabilities in their online classes. Because there is little or no personal interaction involved with an Internet course, I was persistent in trying to determine how they knew this to be true. Many admitted, after more questioning, that
it was possible they may have had one and just were not aware of that. Self-disclosure of a student’s disability is strictly voluntary. Because of this, it was impossible to determine an exact participation rate. Because this was a qualitative study, statistics were not reviewed. It was the awareness of participation that I deemed relevant to the study. With the confidentiality afforded to students with disabilities, it is not possible for a researcher such as myself to obtain statistics or review student records to determine this.

Much of the quoted material in Chapter 4 revealed what these particular faculty members shared with me when responding to this question. There was everything from a lengthy explanation, to short and simple “No” responses. A few even offered explanations voluntarily about why they thought this was so.

Several of the faculty informed me that participation in their traditional classrooms by students with disabilities was not uncommon. The majority of these students have been afforded extra time on in-class reading and writing assignments, quizzes, and exams. However, because of the nature of Internet courses, this was often not a necessity. Students were possibly less likely to practice self-disclosure; and, therefore the faculty were less likely to know whether they had ever had a student with disabilities.

The two students with disabilities I interviewed who had taken online classes, Alice and Sharma, both practiced self-disclosure. The definitive answer from them as to why they chose to take the class online was basically the convenience and flexibility.

Because this was such a small sample, it is not representative of any population. However, it may be assumed that most students would use the accommodations allowed if they needed them, based on the responses of the two students with disabilities I interviewed. Often, online courses have timed quizzes and tests. The course management software at all three institutions allowed for special accounts and/or passwords that would extend the time for a quiz or test. By the responses of the faculty and students, it can be concluded that students with
disabilities are not taking online courses in the same proportions as students that have no disability.

A presumptive explanation for this can be found in the data supplied by the five students who had never taken online courses. All five gave different reasons, and two of them were directly related to the students’ disabilities. Andy, who has a speech impediment, did not take online courses for the simple fact that he wanted the personal interaction and practice to talk that the traditional environment provides. David has dyslexia and the massive amounts of reading would be a hindrance to his learning. The other three had non-disability-related reasons, and two of those expressed a sincere desire to be able to take online classes. Greg, in what was hopefully a misunderstanding, said that his Veteran’s Vocational Rehabilitation would not pay for online courses. Rosa had not taken any online courses because her graduate study program had not offered any that she needed for her degree. Gina had determined that a part of her personality, specifically a lack of self-discipline, would not lend well to this type of course.

Most of the faculty agreed that a successful online student must possess certain personal characteristics. It matters not whether the student has a disability, it is the ability to perform time-management skills, having self-discipline, and being motivated that determines the success of an online student. Faculty members were adamant that the personality and character make-up of the student was what was important. Disabilities are secondary and should not be the focus of a faculty member’s intent to provide a hospitable learning environment. Many faculty members also spoke of learning styles and how it was relevant to focus on those in the attempt to provide different learning methods for the variety of students who would enroll in an online course.

In summary, the participation rate in online courses by students with disabilities was likely to be much lower than the rate for non-disabled students. This conclusion is based on a very small number of interviewees, and the results cannot be deemed representative of any population.
Minimal Skills, Abilities, and Knowledge

The most varied responses to any of the research questions would be research question #2: “What are the minimal skills, abilities, and knowledge needed to successfully complete an online course?” The interpretations of the faculty as they were asked the question defined the type of response I received. Often, they would ask for clarification first, “Do you mean for students with disabilities or any student?” Once I asked the original question, if they had not clarified their answer, I would then ask if it would be any different for those students with disabilities than it was for students without any disabilities. In addition to asking this research question verbatim, I asked all participants to define what they thought would be the characteristics of a successful online student. Responses to both questions provide the answer to this research question.

With the exception of the two of the three nursing professors, the majority of the faculty said that these skills, abilities, and knowledge would be the same for any student. Sometimes, the faculty would elaborate with statements that the student would have to be using some type of text reader or screen reader. At least two of the faculty stated that their courses were already ADA compliant for anyone using adaptive technology; therefore, the skills, abilities, and knowledge needed by any of their students would be the exact same, regardless of a disability.

The rich, thick data obtained by interviewing is quoted heavily in chapter 4. Rather than repeat it here, I will provide a summary of their responses as they relate to this particular research question.

Self-discipline – This ability was mentioned most often as necessary for success in an online course by the faculty. Procrastination as a result of a lack of self-discipline was cited as a downfall for many students.

Time-management – This skill was also mentioned often by the faculty. Any student not able or willing to contribute the time needed to the course, in addition to all their other responsibilities, would most likely not be able to pass the class.
Motivation – Most study participants said that the students must be motivated in order to complete online courses successfully. They had to have the desire, as well as the knowledge, to do so.

Reading – Students must have an acceptable level of reading and comprehension, suitable for their levels of classification in college.

Writing – Many of the disciplines require an ability to coherently write an essay or paper based upon a short story, case study, or other piece of literature.

Internet/computer knowledge – Most study participants mentioned that students needed to have the knowledge of basic computer skills, Internet usage, email usage, and word processing and spreadsheet experience. Most often mentioned were Word and Excel.

To summarize, the discipline-specific skills, abilities, and knowledge are not stated. Instead, the items mentioned above were almost unanimously identified as necessary for the successful completion of an online course. The faculty members and students interviewed were in agreement with these skills and characteristics.

Appealing Characteristics of Online Courses

There were some conflicting answers to research question #3 when considering the responses of the faculty and the students with disabilities. The multi-part question was, “What would make these Internet-based courses more appealing or attractive to the population of students with disabilities? What is it about them in their current state that makes them non-appealing or less attractive than traditional courses?”

By far, the faculty mentioned flexibility and convenience as strong attractants to the courses more than any other appealing characteristic. Similarly, of the students who had taken online courses, both cited these two factors.

In addition, many of the faculty members said they thought that students with physical disabilities would find online courses attractive because they could participate from home and
not have to travel to campus while experiencing mobility problems. Conversely, only two of the students mentioned this. Each of those two had a medical disability that resulted in mobility problems. Neither one of them had participated in online classes, but both had expressed a strong desire to do so.

Interestingly, the faculty members often mentioned the anonymity afforded by an online course as an appealing characteristic. Quite the opposite, not one of the students considered this as an attractive feature. It could be that faculty members perceive students as desiring to be anonymous more often than the students do. The two students interviewed who had taken online courses submitted their letters of accommodations, usually before the classes even began. The “stigma” of being a student with disabilities seemed not to have been a stigma to the students I interviewed.

In a similar vein, many faculty members talked of how an online course could provide a student with disabilities the sense of “being like everybody else”. Equality in an online course by virtue of not allowing others to become aware of a disability was not cited by any of the students as an attractive characteristic.

In summary, the most appealing characteristics of an online course from the faculty’s point of view were convenience, flexibility, lack of mobility problems, anonymity, and equality. The students found the most appealing characteristics of online courses to be flexibility and convenience. Problems involving their disability, anonymity, and equality were not mentioned by the students.

Non-appealing Characteristics

The interviews verified one theme relating to the non-appealing characteristics of online courses. Both faculty and students were in agreement that the lack of personal interaction could be a definite disadvantage to the online delivery method. The faculty spoke of this as a disadvantage to the students as well as to themselves. Many stated they had missed having the
face-to-face contact that traditional classrooms offered. They also suggested that some students would be disadvantaged in online classes, typically because their particular learning styles would not be suitable for Internet courses.

In conjunction with the lack of personal interaction, Greg was most blunt when he stated that the isolation that could come about from taking only Internet courses could literally drive a person insane.

Another popular response from the faculty involved time—time to develop the courses and time to teach them. There was a large preponderance of faculty members who stated it took a much longer time to develop this type of course than it did a traditional-environment course. In addition, the methods they used for conducting their classes and grading assignments and tests also took much longer because they were using technology to do it and not the old-school version of marking up a paper.

One other oft-listed non-appealing characteristic was the misconception that students had about the time needed to devote to the class. Popular belief from the faculty’s viewpoint was that many students did not realize the classes would be as hard, if not harder, than the classroom versions. As a result, many would not practice good time-management or did not have the self-discipline to devote the time needed, and would end up either dropping the class or failing due to not turning in assignments in a timely manner.

Finally, the problem of technology glitches was mentioned by no fewer than three of the students and by some of the faculty members. These are problems that are sometimes surmountable, and sometimes they are not. When at the mercy of something one has no control over, most people would consider this a non-appealing factor. It is the “nature of the beast”, and those who take online courses are aware of it and assume it as an acceptable risk.

To summarize, the faculty members and students with disabilities agreed on one paramount factor of online classes as being a non-appealing characteristic – the lack of personal interaction. This, according to the faculty, works both ways. The students may need it, and many
of them missed interacting with students on a personal level. Most of the students interviewed also expressed this belief. The faculty also listed as non-attractive characteristics: the lengthy time to develop online courses, the lengthy time to teach online courses, and the misconception many students had that it would not take as much time as a traditional class. Both groups of participants agreed that technology glitches can be a disadvantage to taking an online course.

More Accessibility for Online Courses

When considering the final research question, #4, “What can faculty do to make Internet-based courses more accessible to students with disabilities?”, I often asked the question outright. The students were also queried on what they thought could be done.

Recall Lee and Rachel—the married couple who both taught Internet courses. Rachel has a visual impairment, and all her courses were already ADA compliant. Lee had also created his originally to be ADA compliant simply because, to him, it was “second nature”. These two individuals shared that they would not need to change anything to make their courses more accessible—they were already in that state. However, other faculty and students did have suggestions on ways the classes can be made more accessible to students with disabilities.

The largest percentage of registered students are those with learning disabilities, such as the dyslexia that David is diagnosed as having. He had a suggestion, albeit perhaps not a feasible one, that the faculty add more audio components to their online courses. It would benefit many students like him by allowing them to take advantage of their particular learning style. Those students more aurally geared than visually geared would be able to listen to the lectures or notes many times, rather than just the once in a classroom setting. Many of the faculty, Larry, Betty, and Lance among others, mentioned adding audio components or “voice-overs” to their courses. Some faculty had plans to do so, others merely suggested it as a way to provide additional accessibility. This was offered much more often than any other type of action that would provide more accessibility.
The students had few suggestions, primarily because the majority I had spoken to had never participated in an online course and did not feel as though they knew enough about them to make specific suggestions. However, Alice had a recommendation. She suggested that faculty attempt to use a textbook for the course that also was available on CD or DVD for the visually impaired student. This would also benefit students like David and Dharma, who both had dyslexia. Dharma often had the text of her book imported into reading software, so that she was able to listen to the material instead of having to read it. This particular method would be advantageous for many types of disabilities.

Other than the two activities mentioned above, adding an audio component to the course and selecting text books with a companion CD or DVD, there were no other ideas that the students mentioned.

Conclusions

Faculty Awareness

Several conclusions arose out the data analysis from this study. A few of the faculty readily and honestly admitted that they had not considered students with disabilities when developing their courses, or were not aware of a way to make their course accessible to all students with disabilities. Faculty awareness should be a mandatory portion of any new faculty orientation at the institutions. A remedial training session offered by the offices of human resources should be offered for those expressing an interest. A few of the faculty expressed an interest in learning how to better support the students with disabilities. If the institution can not provide this type of development and training, monies should be available to procure them–be it from an outside vendor who visits the campus or a travel opportunity for the faculty member to attend specialized training. Faculty with more experience in the area, like Aileen, could become campus peer instructors for other faculty that have either been reported by a student to the disabilities services office, or those just expressing a desire to develop more accessible courses.
If the faculty have expressed an interest in better helping the students, it should be a responsibility of the campus to provide such training and development.

Faculty Members Participating in Online Courses

The academic administration at the institution should offer the opportunity for faculty to teach fewer hours for at least one semester so that they may take an online course themselves. Perhaps this could even be stated as a requirement before the faculty member is allowed to conduct an online course. Cary provided an excellent example when he explained that he took the “bad” parts of the online course in which he participated and made them into something good for the one he developed. Some of the faculty I spoke with, like Cary, had participated in Internet courses, others had not and weren’t sure they wanted to. It is my belief that voluntary participation in this type of delivery method could provide valuable insight for faculty members when developing their own courses. It should also be noted that faculty willing to devote extra time to online courses should be compensated in an equitable manner. Either monetary compensation or a reduction in required hours taught that semester could enhance the faculty member’s enthusiasm and dedication towards online teaching.

Student Personality

When considering the type of student one needs to be to successfully complete an online course, learning styles was emphasized but more importantly, it was often pointed out by the faculty that they believe success depends more on the student themselves than any other factor. Earlier, the characteristics of a successful online student were discussed. The faculty believed that the student exhibiting behavior that was likely to result in withdrawals or failures—laziness, tardiness, and absence, would be the same type of student if they took an online course. The type of delivery method was irrelevant, it depended upon the student’s motivation, self-discipline, and time management skills.
In essence, faculty do not believe that there is a marked difference between the students with disabilities and students without disabilities. The bottom line is that a student’s inherent character traits will define if they are successful or not, be it in the traditional classroom or in an Internet course. As Nancy stated, “We haven’t done any type of official study, but just on general observations those students who do well in class in a physical setting are generally those who will do well online.” Also, Lance verified this when I asked him, “So, success in your class is up to the individual?” He responded,

Yes. I think—I think it is true in every class. If you are in the first grade or you are in a PhD program. I think it’s true. It depends on the individual a lot more than it depends on the teacher.

*Concerns with RODP*

Most of the faculty that had taught RODP courses had comments about problems they had experienced with the system. Some of them have been quoted in Chapter 4. Given time, the program seems to have ironed a few of the wrinkles since its inception. However, with at least two of the faculty choosing not to place their course materials in WebCT, the course management system chosen by the Regents, there is some indication of ongoing issues that should be investigated.

Some talked of the lack of infrastructure in the beginning. Because they have either not had to teach an RODP course or have chosen not to use their software, they are unsure whether this problem has been addressed yet. In addition, there was little technical support, the communications were lacking, and the initial training they received was inadequate. Many of them advanced in their course delivery with the assistance of colleagues at their home institution and not support from the program.

Rachel chooses to use WebCT only as a link to her own web page, where all her course materials are stored. When I spoke with her, she explained to me that WebCT was not user-
friendly for those required to use a screen or text reader. If it is difficult for her, it would likely be difficult for a visually impaired student, also. She said,

You—with visual disabilities if you had those minimal skills you can do an online course. However, with the WebCT that’s an additional learning curve that is significant. I didn’t say you couldn’t do it, there’s just a lot—when you can’t see the screen and you’re not mousing through it, there’s additional skills, you have to know to find things. And, I still have trouble with WebCT. In fact, I don’t do a lot of it. I use the WebCT because that’s the template that I’m told students are expecting,…

Lee also felt that he could provide better content for students with disabilities by not using the WebCT software. He explained,

I have taught the course via RODP. And I didn’t do it with WebCT. Well, it was (mandatory). What I did with WebCT, I provided a link back to my, we’ll call it the home syllabus. I was teaching the RODP section and the Institution Z online section at the same time. And, so I just provided a link from WebCT back to the regular law course, and then said to the students you never need to go to WebCT again.

We have the same content, so that’s how I got around WebCT in RODP. Well, I don’t know if they wanted me to do it (that way) or not, but once the course was going it was too late for them to stop it. And it works.

Certification of Online Courses

During the interviews, it became apparent that there is no one method or style for creating online web courses. The software packages used included straight HTML code, FrontPage, DreamWeaverMX, and the course management package itself.

In order to provide the level of accommodation required by law, the TBR institutions should require all courses to meet ADA compliance. This does not have to be a financial burden on any university. There are free tools available, and some will offer a “certification” attesting that the course meets the guidelines as defined by federal law. Aileen told me about the certification that she and a colleague attained for their courses. She elaborated,

So, then we—from that point on, we designed some presentations that we did at other campuses because they had no idea how to handle people with disabilities using computers. They just did everything the regular way, and so we talked about how important it is to get the course certified by a disabled approver. There’s one kind of like Bobby. There’s one like Bobby that looks more at do you have the speaking and the words and are the words big enough and are you careful with color. If you think
something’s supposed to be green and have a colorblind person, which is a minor disability, but you know, they’re not going to see green as green, so you have to put text under it and say this is green. So it makes you walk through those kinds of things. And, getting course approval for that I think is just really important cause they think of all the things you don’t think about. It’s a website certification that’s offered like Bobby through an organization.

Bobby, as referred to by Aileen, is a tool to help determine issues with web pages and bring them into accessibility compliance. More information can be found at http://bobby.watchfire.com/bobby/html/en/index.jsp.

Recommendations for Further Research

Comprehensive Quantitative Research

One primary and crucial aspect to evolve during this study is the fact that cold, hard numbers are not available. We, researchers such as myself, do not have the ability to determine if students with disabilities are even taking online courses, much less how pervasive is the involvement or the reasons behind it. From the faculty’s information, it is unknown if RODP records would even indicate a student with disabilities registered in a course.

My recommendation for additional research is that a comprehensive, quantitative study be conducted to determine the true extent of participation in online courses by students with disabilities. The disability services offices at the TBR institutions could provide a researcher with a list of the student ID numbers for those registered in the office. From there, it could be compared to the enrollment files in the student information system to determine what classes the students are taking. As a result, it could be determined if the students are registering in Internet courses. The researcher could be the state of Tennessee itself, the institution’s research division, or a faculty member. Considering the confidential nature of the students’ privacy, it would not be easy to gain access to the information. However, I think it is critical at this point. The primary reasons for the importance of a study like this are three-fold: 1) students with disabilities are enrolling in higher education programs at a higher number than ever before; 2) it is the law that
the institution provide for reasonable accommodation; and 3) if the students are not taking the classes, it can be a tremendous cost in human resources and money to produce ADA compliant courses if there is no interest by the students. The time and money could be better spent on methods to enhance the education of students with disabilities.

*Awareness Survey of Faculty by the Institutions*

Further research into the area of faculty developers and students with disabilities should include studies involving faculty awareness. Unfortunately, some of the faculty I spoke with and even one in the focus group had not considered that students with disabilities may be enrolling in their courses. In addition to not considering students with disabilities, other faculty were unaware of the means and methods that would be required to develop their course into a format that would be ADA compliant.

Often, during the discussions, the topic of learning styles would arise. As an elementary component of pedagogy, many faculty are much more informed of learning styles than they are of accommodations for the disabled. As a result, many had already provided an enhanced learning environment for their students in the effort to appeal to the different styles. This, however, is not necessarily going to provide the accommodations needed.

Aileen and her colleague had attempted to enlighten faculty at other campuses about students with disabilities. Unfortunately, there was very little interest at her own institution. For this reason, the academic administration division should sponsor or support research into the awareness of faculty and the extent of that awareness. A well-prepared instrument could be invaluable in assessing the problem areas and the remedies required to overcome such obstacles. Coombs said it was the right thing to do. I feel that universities should be obligated to attend to the needs of all students.
Qualitative Research of Students’ Knowledge of Resources

Access to the vulnerable group of students was difficult. Regardless, more information needs to be obtained about this valuable resource so that we can move forward in providing them with the means needed to fulfill their educational endeavors.

When I spoke to Greg, I asked him if he was aware of the disability services office on his campus before enrolling. He stated,

No, I didn’t. I found out about it while I was actually talking to some people about problems I thought I might have in class and so they said you should go see the disabilities people. So, I did. I had no idea.

When I talked with the students about the services they had been provided, not one of them had a negative comment of the office on their campus. Quite the contrary—they all thought the staff was doing a terrific job. However, if the students do not know such services are available, they will not be able to take advantage of them.

A research study on each TBR campus should be conducted—whether by the academic administration or the disability services offices themselves. This study should attempt to determine student awareness of the services and to find out how those students became aware. If materials are not included in admissions packets, they should be.

Most of the faculty members I interviewed did mention that their syllabi contained a statement about the disability services office on campus, and that a student should work with them if accommodations are needed. It would be a more professional reflection on the university itself if this information were available before a student actually sat down in class for the first time.

Alice had shared her desire to be a recruiter for disabled students at the high schools that the admissions staff normally visits. To my knowledge, there are no specific ambassadors representing students with disabilities when recruitment visits are made. Perhaps it is time to take that into consideration.
Observations of Non-disabled Students

The observations of non-disabled students should be studied as well. A qualitative study conducted with a similar methodology as this one would potentially reveal whether to two groups of students perceive Internet-based courses with a parallel viewpoint.

This type of study could be beneficial in determining whether the current method of developing/teaching Internet courses is sufficient to attract a more heterogeneous population of students.

Recommendations for Best Practices

Faculty Training

When considering training for faculty members, each institution should implement a mandatory training session before faculty are allowed to teach an online course. Not only would this alleviate some of the frustrations and inefficiencies previously mentioned by the faculty members, but it would also provide a more structured, standardized format for students. The training should be comprised of how to use the course management software and the issues of creating an ADA-compliant course.

Statement of Disclosure

Many faculty had mentioned students with disabilities who failed to provide their letters of accommodation early in the semester. This led to problems for the student and the faculty member and possibly lower scores for the students by not taking advantage of the accommodations afforded to them.

All Internet-based courses should be designed with an option that appears the first time a student logs in to the course management program. This option would allow the student to practice self-disclosure online and prepare the faculty member for providing accommodations. The student would still be responsible for providing a hard-copy of the accommodations letter to
the faculty member. However, this particular method would assure students a timely opportunity to practice self-disclosure, thus avoiding potential problems later in the course.

**Course Re-design**

As a final recommendation for best practices, faculty should consider, or re-think, the methods that they are using to design their online courses. Many faculty members are not creating ADA-compliant courses. It could be only a matter of time before the legal implications of not providing ADA-compliant courses become problematic for institutions. A proactive, rather than reactive, stance to the problem should be addressed by the institutions.

**Closing Comments**

In a somewhat unconventional manner, I would like to conclude this study with my personal observations. Because the guiding principle of any researcher should be objectivity, I have tried to remain so to the best of my ability. Now that the research is complete, there are a few comments I would like to share.

I was once told that in doing a dissertation, a student should pick a topic that interests her because, before it is over, she will be sick of it. I chose a topic that encompassed two realms that are very important to me, technology and disabilities. Technology is my current field and hopefully a lifelong career. The disabilities interested me because of my personal history.

My father was confined to a wheelchair the last three years of his short life. I never knew just how narrow those aisles at the large discount stores were until I tried to get him through there without knocking half the items off the shelves. For the last 10 years of his even shorter life, my husband was disabled with a non-terminal but crippling and painful disease. It is through the interactions with these people that meant so much to me that I became interested in how others coped with their disabilities and continued to pursue as normal a life as possible. At the very end of this study, I myself became temporarily disabled due to a bad injury and subsequent
surgery. The trauma, depression, and drop in self-esteem of not being able to do for yourself after you had been is indescribable.

There were other heartaches and tragedies during the course of working towards this degree. I had several family members die, including a 4-day old grandson; my husband, who committed suicide because of the pain his disease caused, and my dissertation committee chair and a very special person who was diagnosed with cancer near the end of my research. He passed away just two days after this study was initially submitted.

To all those people I spoke with who have a disability and to those who sincerely desire to recognize and treat them as human beings, I honor and applaud you for your wisdom and compassion.
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APPENDIX A

Letter to Faculty Focus Group Candidates

«Title» «FirstName» «LastName»
«Address1»
July 23, 2002

Dear «Title» «LastName»,

My name is Janet Keener and I am currently a doctoral candidate in the Department of Educational Leadership and Policy Analysis at East Tennessee State University. I am sending you this letter because of your experience in conducting Internet-based courses.

I am beginning to develop methods for data gathering for my dissertation. It is an emergent topic and the title is Critical Elements of Internet-Based Courses: Perceptions of Faculty Developers and Students with Disabilities at Selected 4-Year Institutions.

In preparation, I hope to conduct a focus group comprised of faculty who can assist in developing/refining the interview questions that will be used during standardized open-ended interviews at three, 4-year TBR institutions. The information gathered during the focus group will be used to finalize the format of interview questions for all faculty.

If you would like to participate in the focus group, please return the page included with this letter in the envelope provided no later than August 8, 2002. Participants in the focus group will not be asked to participate in the actual interviews to be conducted later in this research project. All comments/suggestions/recommendations made during the focus group will be kept confidential. We will meet for approximately one to 1½ hours, and I hope to have 6 to 8 participants.

I feel that this is a very interesting, timely, and important topic for your campus. It is my hope that this study will reveal a practical base of information for future purposes of program refinement in higher education.

Please indicate your response on the form included and return it to me in the envelope provided by August 8. Should you elect not to participate in this activity, please indicate such. Once a sufficient number of responses are received, I will schedule the event and be in contact with you, should you be chosen to participate. If you have questions, I may be reached by phone during the day at 423.439.4648, or by email to janet@mail.etsu.edu or keener@chartertn.net. My dissertation committee chair is Dr. Russell West, phone 423.439.7619, email westr@etsu.edu.

With utmost respect and thanks,
Janet M. Keener
Faculty Member:  «Title» «FirstName» «LastName»

I would like to participate in this focus group. Information on how best to contact me is listed below.

I prefer to be contacted by:

☐ Phone - ________________________________

☐ Email - ________________________________

☐ Postal Mail - __________________________

                          __________________________
                          __________________________
                          __________________________

I cannot/choose not to participate in this activity.

The best time(s) for my participation will be:

                          __________________________
                          __________________________
                          __________________________
                          __________________________

Comments/Suggestions:
APPENDIX B

Letter to Faculty Interview Candidates

«Title» «FirstName» «LastName»
«Address1»
«Date»

Dear «Title» «LastName»,

My name is Janet Keener and I am currently a doctoral candidate in the Department of Educational Leadership and Policy Analysis at East Tennessee State University. I am sending you this letter because of your experience in conducting Internet-based courses.

My dissertation is a qualitative study entitled Critical Elements of Internet-Based Courses: Perceptions of Faculty Developers and Students with Disabilities at Selected 4-Year Institutions. At this time, I am asking your cooperation in gathering data for my research. I would like to do personal interviews with faculty that have designed, developed, and taught Internet-based courses. My plans are to tape the interviews, transcribe the tapes, and use computer software to analyze perceptions and thematic constructs. After transcription and verification of accuracy, the tapes will be destroyed. In the interim, they will be coded to maintain confidentiality. At no time will your identity be made available to anyone other than myself, nor will your institution be identified in the dissertation.

I feel that this is a very interesting, timely, and important topic for your campus as well as others. It is my hope that this study will reveal a practical base of information for future purposes of program refinement in higher education.

If you are willing to be interviewed, please indicate your response on the form included and return it to me in the envelope provided within ten days. Should you elect not to participate in this activity, please indicate such. This will assure that no further contact will be conducted on my behalf. Once a sufficient number of responses meeting the study criteria are received, they will be reviewed for qualification. Should you meet the criteria and are selected to be interviewed, you will be contacted soon. If you have questions, I may be reached by phone during the day at 423.439.4648, or by email to janet@mail.etsu.edu or keener@chartertn.net. My dissertation committee chair is Dr. Russell West, phone 423.439.7619, email westr@etsu.edu.

Sincerely,

Janet M. Keener
Faculty Member: «Title» «FirstName» «LastName»

I am willing to be interviewed for this study. □
Information on how best to contact me is listed below.

I teach/have taught the following Internet-based courses at my campus:

__________________________________________________________

__________________________________________________________

__________________________________________________________

I prefer to be contacted by:

□ Phone - ________________________________

□ Email - ________________________________

□ Postal Mail - ________________________________

The best time(s) for my interview will be:

__________________________________________________________

__________________________________________________________

__________________________________________________________

Comments/Suggestions:
APPENDIX C
Standardized Open-Interview Guide - Faculty

Institution
Code _________
Interview Code _________

1. Dept.___________________________________

2. How long have you been teaching?________________________

3. How long have you taught Internet courses?_______________

4. Which Internet-based courses are you teaching or have taught in the past? Please list:


7. I teach/have taught  undergraduate/graduate/both  Internet-based courses  (circle one)

8. What do you feel are the minimal skills, abilities, and knowledge that students with disabilities must have in order to take your Internet-based course?

9. What, if anything, can/are you doing to make your Internet courses more accommodating to students with disabilities? How are you doing it?

10. Have you ever had a student with disabilities in any of your Internet courses?

11. What are the advantages of online courses versus traditional courses?

12. Do you feel that students with disabilities would prefer to take this class online or in a traditional classroom environment?

13. What would you do differently if you knew a student with disabilities was planning on enrolling in your course?

14. What are your perceptions concerning students with disabilities taking Internet-based courses? How do you feel about this type of course for students with disabilities? Please elaborate.

15. Additional Comments
APPENDIX D

Letter to Student Focus Group Candidates

Dear Student,

My name is Janet Keener and I am currently a doctoral candidate in the Department of Educational Leadership and Policy Analysis at East Tennessee State University. The director of the Office of Disability Services has given this letter to you on my behalf.

I am beginning to develop methods for gathering data for my dissertation. It is an evolving topic and the title is Critical Elements of Internet-Based Courses: Perceptions of Faculty Developers and Students with Disabilities at Selected 4-Year Institutions.

In preparation, I will be conducting a focus group comprised of students with disabilities that can help in refining the interview questions that will be asked during a standardized open-ended interview process with other students with disabilities at three, 4-year Tennessee Board of Regents institutions. The information gathered during the focus group will be used to finalize the format of interview questions for student participants.

Participants in the focus group will not be asked to participate in the actual interviews to be conducted later in this research project. If you choose not to participate in the focus group, no action on your part is necessary. You may receive another letter at a later date requesting to be interviewed.

All comments/suggestions/recommendations made during the focus group will be kept confidential, and you will not be identified in any way. We will meet for approximately 1½ hours, and I hope to have 6 to 8 participants. The focus group will be conducted on ### in room ## of the Culp Center on ###.

I feel that this is a very interesting, timely and important topic for your campus. It is my hope that this study will reveal a practical base of information for future purposes of program enhancement in higher education.

If you would like to participate, please return the information page included with this letter in the envelope provided, as well as the signed and initialed Informed Consent Document, within ten days. Should you be selected for participation, you will be contacted soon. If you have questions, I may be reached by phone during the day at 423.439.4648, or by email to janet@mail.etsu.edu or keener@chartertn.net. My dissertation committee chair is Dr. Russell West, phone 423.439.7619, email westr@etsu.edu.

With utmost respect and thanks,

Janet M. Keener
Student Name: ______________________________ (Please print)

I would like to participate in this focus group. □
Information on how best to contact me is listed below. (Please mark all that apply.)

I prefer to be contacted by:

☐ Phone - ____________________________
☐ Email - ____________________________
☐ Through the Disability Services Director
☐ Postal Mail - ____________________________

____________________________
____________________________

The nature of my disability:

☐ Hearing Impaired
☐ Visually Impaired
☐ Physically Impaired
☐ Speech Impaired
☐ Learning disabled
☐ Other ____________________________
☐ Do not wish to answer

(This question is asked to allow for maximum variation in selecting participants.)

I will need to the following accommodation(s) in order to participate in the focus group:

____________________________

Comments/Suggestions:
APPENDIX E

Standardized Open-Interview Guide - Students

Institution Code _________
Interview Code _________

1. Classification:
   - Freshmen
   - Sophomore
   - Junior
   - Senior
   - Graduate
   - Other ________________________________

2. Major field of study ___________________________________________

3. Minor field of study ___________________________________________

4. Have you taken any Internet courses? ____________________________
   Please describe which Internet courses you have taken:
   ____________________________________________________________

5. Please tell me how you felt about this course(s). Would this course be best if offered as an Internet course or in the traditional classroom environment?

6. What prompted you to take this as an Internet course?

7. If you have never taken an Internet based course, please explain why.

8. If you were the faculty member, what would you do to attract a student such as yourself to this course?

9. Describe your feelings concerning students with disabilities taking Internet based courses.

10. Additional Comments
APPENDIX F
Letter to Student Interview Candidates

Janet Keener
145 Parkview St.
Church Hill, TN 37642
423.357.8760

Dear Student:

My name is Janet Keener and I am currently a doctoral candidate in the Department of Educational Leadership and Policy Analysis at East Tennessee State University in Johnson City, TN. The director of the Disability Services office at your university has given this letter to you on my behalf.

My dissertation is a qualitative study entitled “Critical Elements of Internet-Based Courses: Perceptions of Faculty Developers and Students with Disabilities at Selected 4-Year Institutions”. At this time, I am asking your cooperation in gathering data for my research. I would like to do personal interviews with students registered with their Disability Services office. My plans are to tape the interviews, transcribe the tapes, and use computer software to analyze perceptions and themes. After transcription and verification of accuracy, the tapes will be destroyed. In the meantime, they will be coded to maintain confidentiality. At no time will your identity be made available to anyone other than myself, nor will your institution be identified in the dissertation.

I feel that this is a very interesting and important topic for your campus as well as others. It is my hope that this study will reveal a practical base of information for future purposes of program enhancement in higher education.

If you are willing to be interviewed, please complete the information sheet included and return it in the enclosed envelope within seven days. An Informed Consent Document will be supplied to you for your signature before an interview will be conducted. Once a sufficient number of responses that meet the study criteria are received, I may be contacting you to schedule the interview, should you qualify. Tentative plans are to visit your campus sometime during the week of July 12-16 or July 19-23.

If you have questions, I may be reached by phone during the day at 423.439.4648, or by email to janet@etsu.edu. My dissertation committee chair is Dr. Russell West, phone 423.439.7619, email westr@etsu.edu.

Sincerely,
Janet M. Keener
Student Name: _____________________________________________
Institution: ________________________________________________
Address: __________________________________________________
City, State, Zip: _____________________________________________
Phone: ____________________________________________________
Email: ____________________________________________________
I prefer to be contacted by:

☐ Phone
☐ Email
☐ Postal Mail
☐ Through the Disability Services Director

The nature of my disability:

☐ Hearing Impaired
☐ Visually Impaired
☐ Physically Impaired
☐ Learning disability
☐ Other ______________________________
☐ Do not wish to answer

I agree to be interviewed and will need the following accommodations:

_________________________________________________________
_________________________________________________________
INFORMED CONSENT DOCUMENT
EAST TENNESSEE STATE UNIVERSITY

This is a qualitative dissertation in pursuit of a Doctorate of Education (Ed.D.) degree conducted by Janet M. Keener, a doctoral candidate in the Department of Educational Leadership and Policy Analysis at East Tennessee State University in Johnson City, TN. The intentions of the study are to research the questions: (1) To what extent are students with disabilities participating in Internet-based courses? Why have they chosen to enroll in such courses? If they have not done so, what are the reasons why they have not? (2) What are the critical elements of Internet-based courses as defined by faculty members when considering students with disabilities? (3) What would make these Internet-based courses more appealing or attractive to the population of students with disabilities? What is it about them in their current state that makes them non-appealing or less attractive than traditional classroom courses? (4) What can faculty do to make Internet-based courses more accessible to students with disabilities?

This Informed Consent will explain about being a research subject in an experiment. It is important that you read this material carefully and then decide if you wish to be a volunteer.

PRINCIPAL INVESTIGATOR: Janet M. Keener

PURPOSE:

This study will attempt to determine how faculty members at selected public institutions of higher education have taken students with disabilities into consideration during the design and development of their Internet-based courses. In addition, interviews with students with disabilities will classify and categorize the perceptions these students have about the Internet-based courses offered at their institutions.

DURATION:

It is expected that all the interviews for this study will be conducted over a period not to exceed three (3) months. Following that, the data analysis and conclusion of the study should not extend for more than four (4) months beyond that time. It is the intention to have the study completed and submitted, in dissertation format, for graduation in December 2004.
Individual interviews with voluntary participants should last between one (1) and 1.5 hours each.

The intentions are to interview a minimum of five (5) faculty and five (5) students with disabilities at three (3) different 4-year Tennessee Board of Regents institutions. Upon IRB approval, a focus group of faculty will be conducted first to develop the actual interview guide to be used in the study. The faculty will be interviewed first (it is anticipated that IRB approval for faculty interviews will be concluded before that of the students’). During the time that the IRB reviews the proposal for student focus group and interviews, the interviews with the faculty will be conducted. Once full IRB approval is acquired, contact will be made with the two remaining institutions and arrangements will be made at that time to interview faculty and students.

PROCEDURES:

This study will require no physically invasive procedures. It will be conducted as a standardized open-ended interview session between the researcher and the volunteer in a private location on campus. Certain participants may be in need of interpreters during the interview. All interviews will be tape-recorded. The tapes will be coded to maintain confidentiality. After the transcription is verified for accuracy, the tapes will be destroyed. All written documents and backups copied to CD-ROM pertaining to this study will be maintained by the researcher in the home for a period of at least 10 years. No one other than the researcher will have access to the documents or notes.

Interviews with faculty will be solicited via a written request. Names of those eligible are supplied through the distance education office at each university and by reviewing the institution’s course catalog for those faculty that have taught Internet-based course within the last two years. Interviews with students will be arranged through the disability services office on each of the campuses. All students registered with the office will be given a request for participation letter (see attached) and should they agree to participate in either the focus group or the study interview, will be given a copy of this document.

POSSIBLE RISKS/DISCOMFORTS:

The possible risks/discomforts of your involvement include:

The participants may incur some inconvenience in the form of scheduling or loss of time. There are no known additional risks to human subjects related to the interview process.

POSSIBLE BENEFITS and/or COMPENSATION:

The possible benefits of your participation are:

1) A heightened awareness to the possible need for Internet-based courses designed and developed for students with disabilities
2) Contributing to a field of study that is lacking in information at this time
3) A sense of satisfaction in contributing to the study
4) More training/development for faculty in the creation/modification of Internet-based courses for student with disabilities

There is no monetary remuneration for participation in this study.

CONTACT FOR QUESTIONS:

If you have any questions, problems or research-related medical problems at any time, you may call Janet M. Keener at 423.439.4648, or Dr. Russell West, at 423.439.7619. You may call the Chairman of the Institutional Review Board at 423.439.6055 for any questions you may have about your rights as a research subject.

CONFIDENTIALITY:

Every attempt will be made to see that my study results are kept confidential. A copy of the records from this study will be stored in the researcher’s home for at least 10 years after the end of this research. The results of this study may be published and/or presented at meetings without naming me as a subject. Although your rights and privacy will be maintained, the Secretary of the Department of Health and Human Services, the East Tennessee State University and the ETSU Department of Educational Leadership and Policy Analysis have access to the study records. My records will be kept completely confidential according to current legal requirements. They will not be revealed unless required by law, or as noted above.

COMPENSATION FOR MEDICAL TREATMENT:

East Tennessee State University (ETSU) will pay the cost of emergency first aid for any injury which may happen as a result of your being in this study. They will not pay for any other medical treatment. Claims against ETSU or any of its agents or employees may be submitted to the Tennessee Claims Commission. These claims will be settled to the extent allowable as provided under TCA Section 9-8-307. For more information about claims call the Chairman of the Institutional Review Board of ETSU at 423/439-6055.

VOLUNTARY PARTICIPATION:

The nature, demands, risks, and benefits of the project have been explained to me as well and are known and available. I understand what my participation involves. Furthermore, I understand that I am free to ask questions and withdraw from the project at any time, without penalty. I have read, or have had read to me, and fully understand the consent form. I sign it freely and voluntarily. A signed copy has been given to me.

Your study record will be maintained in strictest confidence according to current legal requirements and will not be revealed unless required by law or as noted above.
APPENDIX H

Informed Consent Document - Students

INFORMED CONSENT DOCUMENT

EAST TENNESSEE STATE UNIVERSITY

INTRODUCTION:

This project is being done in order to complete a Doctorate of Education (Ed.D.) degree pursued by Janet M. Keener, a doctoral candidate in the Department of Educational Leadership and Policy Analysis at East Tennessee State University in Johnson City, TN. The purpose of the study is to determine these research questions: (1) To what extent are students with disabilities participating in Internet-based courses? Why have they chosen to enroll in such courses? If they have not done this, what are the reasons why they have not? (2) What are the critical elements of Internet-based courses as defined by faculty members when considering students with disabilities? (3) What would make these Internet-based courses more appealing or attractive to the population of students with disabilities? What is it about them in their current state that makes them non-appealing or less attractive than traditional classroom courses? (4) What can faculty do to make Internet-based courses more accessible to students with disabilities?

This Informed Consent Document will explain about being a research subject in an experiment. It is important that you read this material carefully and then decide if you wish to be a volunteer.

PURPOSE:

This study will attempt to find out if faculty members at chosen public institutions of higher education have taken students with disabilities into consideration during the design and development of their Internet-based courses. For those who have not used course materials accessible to students with disabilities, the reasons will be studied, placed into logical groups.

In addition, interviews with students with disabilities will classify and group the perceptions these students have about the Internet-based courses offered at their institutions.

The purposes of this research study are as follows:

The primary purpose of this study is to fulfill the requirements of a Doctorate of Education degree at East Tennessee State University by Janet M. Keener. The nature of this study requires a qualitative investigation. Numerical data for a quantitative analysis are not available at this time. There is little literature published relating to the research in question. It is hoped that the researcher will be able to define the perceptions of faculty and students with disabilities regarding Internet-based courses. It is hoped that the results will enhance awareness of the needs
and legalities concerning accessibility to students with disabilities, as well as to provide general knowledge for further research. There are no investigational drugs or devices involved in this study.

DURATION:

Individual interviews with voluntary participants should last between one (1) and 1.5 hours each.

PROCEDURES:

This study will require no physically invasive procedures. It will be conducted as an interview session between the researcher and the volunteer in a private location on campus. Most questions to be asked will be determined before the interview begins. Some hearing-impaired students may be in need of interpreters during the interview. All interviews will be tape-recorded. The tapes will be coded to maintain confidentiality. After the transcription is complete and verified for accuracy, the tapes will be destroyed. All written documents and backups copied to CD-ROM pertaining to this study will be kept by the researcher in the home for a period of at least 10 years. The current address of the researcher is 145 Parkview St., Church Hill, TN 37642. No one other than the researcher will have access to the documents or notes.

Focus group participants and students that want to be interviewed are identified only after they have been given a letter by the director of your disability services office, and then have contacted the researcher and said they would like to volunteer. A focus group session will be held to create the interview guide. Interviews with students will be arranged through the disability services office on each of the campuses. All students registered with the office will be given a letter asking if they would like to take part in this study. If you agree to take part in either the focus group or an interview, you will be given a copy of this document.

The plans are to interview a minimum of five (5) faculty and five (5) students with disabilities at three (3) different 4-year Tennessee Board of Regents schools. The faculty will be interviewed first (it is expected that IRB approval for faculty interviews will be finished before that of the students’).

POSSIBLE RISKS/DISCOMFORTS:

There are no known physical risks or side effects to this study. The participants may have some inconvenience in the form of scheduling or loss of time. There may also be some economic inconvenience if a student schedules the interview during a time that they will be missing work for which they would have been paid. All efforts will be made to avoid this.

INJURY/COMPLICATIONS:

There are no known risks associated with this research.
POSSIBLE BENEFITS:

The possible benefits to this study include an increased awareness to the possible need for Internet-based courses designed and developed for students with disabilities. In addition, the volunteers will be contributing to a field of study that is lacking in information at this time. The individual contribution to the study could result in an increase in self-worth and satisfaction. In addition, faculty and students both may benefit if the study results in more access for students with disabilities, maybe in the form of increased training and better technology needs for the faculty developing, designing, and teaching Internet-based courses.

COMPENSATION:

There is no monetary payment for participation in this study.

FINANCIAL COSTS:

The possible financial costs to you as a participant in this research study are:

1) Income lost due to missed work
2) Income spent on travel to the interview site

ALTERNATIVE PROCEDURES:

The alternative procedures available to you if you elect not to participate in this study are:

To elect not to participate

CONTACT FOR QUESTIONS:

If you have any questions, problems or research-related medical problems at any time, you may call Janet M. Keener at 423.439.4648, or Dr. Russell West, at 423.439.7619. You may call the Chairman of the Institutional Review Board at 423.439.6055 for any questions you may have about your rights as a research subject.

CONFIDENTIALITY

Every attempt will be made to keep the study results confidential. A copy of the records from this study will be stored in the home of the researcher for at least 10 years after the end of this research. The current address of the researcher is 145 Parkview St., Church Hill, TN 37642.

The results of this study may be published and/or presented at meetings without naming me as a subject. The ETSU IRB, Department of Health and Human Services, and research-related personnel in the ETSU Department of Educational Leadership and Policy Analysis have access to the study records. They will not be revealed unless required by law, or as noted above.
COMPENSATION FOR MEDICAL TREATMENT

East Tennessee State University (ETSU) will pay the cost of emergency first aid for any injury which may happen as a result of your being in this study. They will not pay for any other medical treatment. Claims against ETSU or any of its agents or employees may be submitted to the Tennessee Claims Commission. These claims will be settled to the extent allowable as provided under TCA Section 9-8-307. For more information about claims call the Chairman of the ETSU/VA Institutional Review Board at 423.439.6055.

VOLUNTARY PARTICIPATION:

Participation in this research study is voluntary. You may refuse to participate. You can quit at any time. If you quit or refuse to participate, the benefits or treatment to which you are entitled will not be affected. You may quit by calling Janet M. Keener, whose phone number is 423.439.4648. You will be told immediately if any of the results of the study should reasonably be expected to make you change your mind about staying in the study. Your advisor may take you out of the study at any time without your consent, if s/he decides it is not in your best interest to continue (i.e., not following study related directions, adverse event). You may be taken off the study if it ends early.

CONSENT

By signing below, I certify that I have read or had this document read to me. I will be given a signed copy. I have been given the chance to ask questions and to discuss my participation with the researcher. I freely and voluntarily choose to be in this research project. I am at least eighteen years of age as of today’s date.

________________________________________________________________________
SIGNATURE OF PARTICIPANT/LEGAL GUARDIAN     DATE
________________________________________________________________________
SIGNATURE OF INVESTIGATOR       DATE
________________________________________________________________________
SIGNATURE OF WITNESS (if applicable)      DATE
APPENDIX I
Letter from the Peer Debriefer

East Tennessee State University
Academic Technology Support • Box 70284 • Johnson City, Tennessee 37614-7028 • (423) 439-8611 • Fax: (423) 439-8610
ATS@etsu.edu • http://www.etsu.technolgy

October 22, 2004

Dissertation Committee
Department of Educational Leadership and Policy Analysis
East Tennessee State University
502 Warf-Pickel Hall
Box 70550
Johnson City, TN 37614-0550

RE: Debriefer Certification

Janet Keener asked that I act as a peer debriefer for her dissertation research. My role in this process consisted of reading transcripts of Janet Keener’s interviews with faculty and students regarding web-based learning and students with disabilities. I reviewed the transcripts to identify any bias on the part of the researcher and to verify consistency of qualitative data collection.

Janet Keener and I met to discuss her research and any potential biases or lack of consistency in the interview process. This researcher provided consistent interview techniques throughout her data collection process and no evidence of researcher bias was apparent. In addition, Janet guarded the anonymity of the participants and assured their confidentiality.

I am pleased to have been able to participate in this project and am confident that Janet Keener has accomplished rigorous, high-quality research.

Sincerely,

[Signature]

Karen D. King, Director
Academic Technology Support
APPENDIX J

Letter from the Auditor

Auditor’s Formal Verification

To: Janet Keener
From: Nancy K. Dillon
Subject: Dissertation Audit
Date: September 21, 2004

The audit of Janet Keener’s interviews with professors and students is complete. I found the interviews were accurately represented and that the study was conducted in a professional and thorough manner.

Congratulations on conducting such an excellent study which will be beneficial to not only the participants but to the institutions and the higher education community in the state of Tennessee. Thank you for allowing me to participate in your contribution to this body of knowledge.

Sincerely,

Nancy K. Dillon, Ed.D.
Confidentiality Contract

I, Tracey Fields, will not disclose any information provided on the audiotapes I will transcribe for Janet M. Keener. The audiotapes are provided to me as part of the data collection of her doctoral dissertation. I understand the tapes are to consist of interviews with faculty and students with disabilities. The tapes are to be coded in an effort to protect the privacy of the individuals as well as to protect the identification of the individuals’ institution.

Signature

Date

Print Name
VITA

JANET McDANIEL KEENER

Personal Data: Date of Birth: February 2, 1962
Place of Birth: Oak Ridge, Tennessee

Education: Public Schools, Cleveland and Oak Ridge, Tennessee
Roane State Community College, Oak Ridge, Tennessee
   Computer Science, A.S., 1986
East Tennessee State University, Johnson City, Tennessee;
   Computer and Information Sciences, B.S., 1988
East Tennessee State University, Johnson City, Tennessee; Business
   Administration, M.B.A., 1995
East Tennessee State University, Johnson City, Tennessee; Educational
   Leadership, Ed.D., 2004

Computer Analyst, East Tennessee State University, 1991-1999
Manager, User Services - Office of Information Technology, East Tennessee State University, Johnson City, Tennessee, 1999-Present

Honors and Awards: Distinguished Staff Award, East Tennessee State University
Kappa Delta Pi, Zeta Iota Chapter’s David Kent Miller Award
National Dean’s List
President’s Award, RSCC
Outstanding Computer Science Student, RSCC
Outstanding Student Government Senator, RSCC
Phi Kappa Phi Academic Honor Society
Kappa Delta Pi Education Honor Society
Beta Gamma Sigma Business Honor Society
Omicron Delta Kappa Leadership Honor Society
Upsilon Pi Epsilon Computer Science Honor Society
Gamma Beta Phi Service Honor Society