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College Organizational Structure and its Impact on Accessible Distance Learning for Students With Disabilities

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COLLEGE ORGANIZATIONAL STRUCTURE AND ITS IMPACT ON ACCESSIBLE
DISTANCE LEARNING FOR STUDENTS WITH DISABILITIES

A Dissertation
Presented to
The Faculty of the Educational Leadership Doctoral Program
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

By
Mana Kariman

May 2014

COLLEGE ORGANIZATIONAL STRUCTURE AND ITS IMPACT ON ACCESSIBLE
DISTANCE LEARNING FOR STUDENTS WITH DISABILITIES

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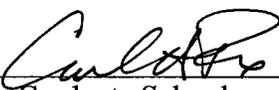
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COLLEGE ORGANIZATIONAL STRUCTURE AND ITS IMPACT ON ACCESSIBLE
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This research focuses on the impact of organizational structure in colleges on accessibility in distance learning for individuals with disabilities. Research remains limited on the effect of the organizational structure that supports online/web-based courses regarding accessibility. Policies that outline the laws guide faculty to ensure the published online courses are accessible to everyone, including students with disabilities. Further, types of accommodations available to students with disabilities are discussed. Accessibility needs to be addressed by trainings for all faculty who provide accommodations. In conclusion, the accessibility laws affect the organizational structure in institutions and the impact of policy implementation.

CHAPTER I: INTRODUCTION

This chapter introduces the study with a general overview of the investigated problem, research questions, theoretical framework, description of essential terms, and the significance of the study.

Statement of the Problem

Currently, with the increase of technology and in order to attract more students, many administrators in colleges search for ways to teach distance learning by increasing offerings of online courses (National Center for Education Statistics, 2011). When a student with a disability enrolls in a course offered online, the law stipulates that certain accommodations must be implemented similar to enrolling in a face-to-face class (Zaloudek, Brinckman, & Booth, 2012).

To assure that students with disabilities, particularly those who use assistive technology devices, benefit from and succeed in an online course, the organizational structure of the institution provides necessary accommodations according to federal laws (Doit, 2012). This study focuses on the organizational structure of colleges in Kentucky when providing necessary accommodations for students with disabilities. At the current time, limited research exists about organizational structure design to promote web-based/online accessibility.

Background

Many college students, with various disabilities such as visual, hearing, learning, and mobility impairment, enroll in postsecondary options. They meet entrance requirements outlined by the colleges using the same guidelines as their peers. This

requires more attention to web-accessibility requirements, which impacts students and professors.

Accessible web-based online courses benefit all students, including those with disabilities, particularly the ones who use assistive technology. Developing accessibility for designed courses, colleges implement an organizational structure that enhances the requirements for accessibility. By providing an organizational structure for accessibility, faculty, staff, and students, especially students with disabilities, are enabled to utilize the online content with ease (Atz, Chand, & Melky, 2013). Policies and procedures outline the methods to be implemented by faculty members in order to assure compliance in a centralized or decentralized structure (Gilani, 2013).

University court cases provide more details regarding the necessity of accessibility for everyone. Institutions involved in lawsuits include Penn State University, Arizona State University, Princeton University, Reed College, Pace University, Darden School of Business, New York University, Northwestern University, Florida State University, and Case Western University (Groves, 2011). Legal cases illustrate that colleges and universities struggle to maintain web-based accessibility because of the limited relevant literature on the design of courses within this organizational structure.

Research Questions

1. How do organizational structures define course design according to ADA (Americans with Disabilities Act) Coordinators/SDS (Students with Disabilities Services) Representatives? How do these organizational structures support accessibility for distance learning for students with disabilities?

2. What specific accommodations for online/web-based courses do institutions provide for students with the following disabilities?
 - a. Deaf/Hard of hearing
 - b. Motor/physical
 - c. Vision
 - d. Learning
3. How can the provided accommodations by the organizational structure benefit the students with disabilities, as defined by ADA Coordinators/SDS Representatives?

Theoretical Framework

This research focuses on two theories, Organizational and Policy Implementation. Organizational Theory explains the structure within the college as a way of organizing purposeful human action (Britt & Jex, 2008). In addition, Policy Implementation Theory serves as another theoretical framework that focuses on the relationship between individuals within an organization. One person/office implements the policies and makes decisions regarding monitoring of the outcomes. These theories impact many people in the system, such as professors, students, information technology, and instructional designers relative to web accessibility.

This research study includes qualitative and quantitative designs using both surveys and interviews. The quantitative portion explores data specifically focusing on strategies available to students with disabilities in terms of web-accessibility and accommodations provided to the students. Regarding the qualitative component of the

research, four ADA coordinators/SDS representatives discuss their organizational structure design for accessibility and services provided for these individuals.

The analysis includes an electronic survey sent by email to participants as part of data collection in order to choose four college personnel to be interviewed. Based on interviews, case studies of college procedures for accommodations for students with disabilities who use assistive technology for online/web-based courses were analyzed. Through this investigation, each organizational structure is examined regarding which model enhances and benefits distance learners with disabilities related to the implementation of accessibility according to ADA coordinators/SDS representatives.

In order to check for validity and reliability of the survey, WebAIM (Web Accessibility In Mind) guided survey questions for accessibility. In addition, the research utilized the resources provided under Project GOALS (Gaining Online Accessible Learning Thought Self-Study) and NCDAAE (The National Center on Disability and Access to Education) that were sponsored by FIPSE (Fund for the Improvement of Postsecondary Education). Currently, the Kentucky Council on Postsecondary Education serves as a partner within Project GOALS.

Description of the Terms

The definitions of terms for this study clarify terminology such as accommodations/modification, ADA, hidden disability, Section 508, universal design, and web accessibility. A variety of sources provided these definitions.

Accommodations/Modifications

The term accommodation refers to “changes that help a student overcome or work around their disability” (Anonymous, 2010, “A Quick Look At Terminology”, para.3).

For example, an individual with a visual disability uses Braille for reading or writing documents. According to ADA, discrimination decreases with reasonable accommodations (New England ADA Center, 2014) and occurs in evaluation procedures such as testing. These accommodations involve altering the administrative procedures. Accommodations provide no advantage to students, but rather, present an equal opportunity to demonstrate knowledge and skills. Commonly used accommodations include administration modifications such as extended time (Howell, Lindsay, & Williams, 2013), reading aloud the exam, and books on tape/CD.

Students receive modified instructions while maintaining rigor to accomplish their work. These modifications “usually take the form of amended materials and assignments and differ from change in curricula or instructional strategies” (p. 38); however, accommodations include “changes in instruction that do not significantly change the content or conceptual difficulty of the curriculum” (Hallahan, Kauffman, & Pullen, 2012, p. 38).

ADA

The Americans with Disabilities Act (ADA) of 1990, the nation’s first comprehensive civil rights law, guarantees equal opportunities for all individuals with disabilities in employment, public accommodations, transportation, state and local government services, and telecommunications (Ed.gov, 2014). Current students with disabilities who are intellectually and academically prepared for college receive assistance from the legislative efforts to access college (Ferguson, 2005). Due to the complexity of legal matters arising under ADA the development of a variety of policies

to clarify and interpret the provision of the law remains a necessary process (Equal Employment Opportunity Commission, 2014).

Assistive Technology

According to a brochure regarding Assistive Technology (AT) from Cornell University, AT was first:

defined in Technology Related Assistance for Individuals with Disabilities Act of 1998 as any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities. (Anonymous, 2001)

Hidden Disabilities

Hidden disabilities refers to (a) one cannot see the disability; (b) no visible support indicates a disability such as cane, wheelchair, or use of sign language; (c) permanent disability with which they cope; and (d) a disability managed through medication such as diabetes, asthma, epilepsy, or psychiatric disorders. Individuals with hidden disabilities provide documentation of their disability to receive reasonable accommodations by law (Students with Disabilities as Diverse Learners, 2008).

Section 508

This law “requires that all Web site content be equally accessible to people with disabilities” (HHS.gov, 2013, “Section 508”, para. 1). This includes, but is not limited to, Web applications, Web pages, and all contents that are posted online. An amendment to the Workforce Rehabilitation Act of 1973 refers to Section 508, requiring all federal agencies to comply with this regulation. Guidelines indicate that this also applies to

electronic and information technology developed by the federal government for accessibility for individuals with disabilities (Foley & Regan, 2002).

Universal Design

The goal of universal design seeks to reduce the barriers for all individuals. Based on architectural principle of universal design, it “serves the general purpose of making learning accessible to more students. ... With modification of representation, expression, and engagement, teachers can include a much wider range of students in classroom instruction” (Hallahan et al., 2012, p. 43).

Web Accessibility

Individuals with disabilities access the web content without difficulty or problems relative to online content (W3C, 2012). For example, various forms of access to videos or audios posted online need to be provided with transcribed text or closed captioning that makes the stream accessible.

Significance of the Study

Currently, few students with disabilities enroll in online courses. No model for colleges exists to develop accessible distance learning courses aligned with accommodations for students with disabilities who use assistive technology. This research study serves as data collection from ADA coordinators’/SDS representatives’ perception on their responsibility when guided by the federal law. Also included is a review of the current organizational structure that affects colleges in the state of Kentucky and nationally. Limited studies exist on how to apply accessibility guidelines for web-based courses in organizational structure settings. This research will add to the growing literature regarding distance learning. Prior to implementing improvements, an

understanding of the laws on accommodations for students with disabilities using online courses remains critical for administrators in successfully implementing policies and procedures. This research investigates and explains the thoughts, actions, and experiences of ADA coordinators/SDS representatives and how colleges facilitate web accessibility.

Providing accommodations for students with disabilities in colleges has changed significantly with the evolution of technology usage. Distance education courses prior to 1969 were correspondence-base. Distance education today has shifted to live web-cast, video streaming, audio streaming, discussion, chat, and additional online interactivity (Ferguson, 2005).

Having a shared vision among the colleges for distance learning creates direction for growth of online accessibility. “Part of the problem associated with weak support is the lack of systematic compliance” and “distance education is now a major force in higher education’s efforts to provide educational opportunities for students independent of location” (Ferguson, 2005, pp. 67-69). By enforcing the web accessibility guidelines and preparing the web-based courses, the risk of further excluding the students with disabilities from online distance learning courses decreases, while the enrollment of students with disabilities in colleges increases. With the growth of distance education the offering of web-based courses creates significant positive outcomes for all students enrolled in these courses.

CHAPTER II: REVIEW OF THE LITERATURE

Chapter I consisted of the research questions and an explanation of the chosen theoretical framework, as well as definitions of terms to clarify the study. The significance of the study discussed the limited number of students with disabilities enrolled in online courses, along with the increase of growth in distance education. What impacts enrollment? Twelve ADA coordinators/SDS representatives of 16 colleges from Kentucky provided answers.

This chapter contains an overview of research, including Organizational and Implementation Theory. Limited research exists regarding organizational structure studies on the creation of accessible distance learning. Comparisons are made between centralized and decentralized organizational structures. To ensure that the organizational structure affects the policy implementation, creation of procedures, application of the plans, assessment, and evaluation of web-based/online accessibility guidelines remain as topics for research (Atz et al., 2013).

A review of the guidelines outlined by law relative to policy development is explained in this research. In addition, discussion is included on the effect of policy implementation and planning. Due to abundance of legal cases, the importance of designing an organizational structure for applying accessibility to accommodate individuals with disabilities emphasizes the need for research (Atz et al., 2013). These court cases indicate that a limited systematic approach to create web accessibility exists within distance learning.

Organizational Theory

As a study of social stratification and social institutions regarding human behavior, sociology directs organizational theory. Organizational charts represent a reporting relationship that “keeps an organization’s employees together to understand the organizational design and adapt their behavior accordingly” (Britt & Jex, 2008, p. 413). Britt and Jex (2008) used biological organism as a metaphor within organizational theory literature. Continued interaction with the surrounding environment affects the biological system. In addition, the biological organism metaphor works within multiple subsystems, such as physiological activities that allow the organization to perform and function.

Another metaphor explains that organizational theory is defined by the components of a machine, which includes people and processes. To ensure proper performance of the machine, “selection, performance appraisal, performance coaching, and redesign of jobs is necessary in order to maximize the unique capabilities of individuals” (Britt & Jex, 2008, p. 413) to assure optimum output.

Britt and Jex (2008) noted that Organizational Theory referred to a field of study that describes processes within an organization or an attempt to determine the optimum method for establishing work. Organizational Theory provides a way of “organizing purposeful human action” (Britt & Jex, 2008, p. 412). A variety of methods exist for organizing human activities; therefore, many theories have been developed. The organization consists of several subsystems that work together. Organizational theories are categorized into three types: (1) Classical Organizational Theories; (2) Humanistic Organizational Theories; and (3) Contingency Organizational Theories. The classical organizational theory was further defined by the intellectual founder of the field Weber

(1922) in bureaucracy (Greenfield, 1977; Handel, 2003). In bureaucratic structure policies, procedures, rules, and regulations characterized the organization. Neo-classical or humanistic organizational theory increased values on the personnel of the organization. Non-classical or contingency organizational theory placed the most value on the people rather than the organization (Ferguson, 2005). According to Britt and Jex (2008), the third theory focused on the characteristics of individuals within the organization. At the same time, the organization strategy and design remained consistent with the situation.

Classical Organizational Theory existed from approximately the early 20th century until the mid 1940s. Scientific Management as organizational psychology indicates that these designers possessed the higher status in the organizational hierarchy, as compared with those who perform the work. Dividing the work into smaller components also gave status to some individuals, in addition to grouping people in departments to perform various tasks. Rules and procedures for employees served as the organizational design framework (Britt & Jex, 2008).

The best known Humanistic Organizational Theories includes McGregor's Theory X/Y Leadership Distinction and Likert's concept of Human Organization. Theory X managers assume that employees dislike work and need close supervision, while Theory Y assume that individuals possess some degree of self-control and work toward the goals of the organization. Likert classified organizations into four parts as follows: (1) Exploitive authoritarian type, similar to Theory X, showed little trust in employees; (2) Benevolent authoritative increased the level of trust; (3) Consultative showed greater trust in employees and their ideas; and (4) Participative group gave complete trust to employees and decision making based on employee input.

Contingency Organizational Theory relies on the situation and affects the design of an organization and decision making. This theory focuses on similarities to contingency theories of leadership, whereby no certain trait defined leaders or behaviors that distinguish good leaders. Recent organizational scholars labeled this as a congruent perspective and included factors such as work of the organization, characteristics of individuals, and informal processes within the organization (Britt & Jex, 2008). Different forms of organizational structure exist, including flat, narrow, functional department, product-based, and work flow. Recent innovations in organizational design include team-based, matrix, and virtual organizations.

Team-based design used in this study provided more desirable accessibility for students with disabilities for online learning. Within a centralized and decentralized organizational structure, teams of employees are created and directed by a leader in many academic departments.

Organizational Structure

Organizational structure affects decision making related to roles, functions, authority, and responsibilities of different individuals within parts of an institution. Failure to recognize the importance of the organizational structure affects the organization in terms of changes in circumstances and communication in micro (global) or macro (local) levels; therefore, this structure remains important in terms of achieving goals and results (McFarlane, 2001).

Strategies for long-term goals of the organization, in addition to its hierarchy, reflected the number of employees who form departments. Also, this hierarchical level and distribution of power influences organizational structure design. Team-based

organizational design serves as a more effective means to utilize and combine the skills of employees, rather than the work they perform individually. These teams become more effective but need to recognize all essential individuals and the reason they are members of the team (Britt & Jex, 2008).

The goal ensured the structure and process of organizations by networking through mutual and ongoing interactions of subunits. These influenced the process of resources and information affecting self-productiveness and self-organization. Self-maintained structures provided indicators of the organization (McFarlane, 2001).

McFarlane (2001) maintained that organizational structure remained essential for virtual colleges and online institutions. Many technological tools and concepts used in different pedagogical approaches are constantly changing, which impacts the organizational structure and the educators, students, and institutions. At the same time, the organizational structure assisted with strategy design and implementation. Leadership and chain of command provide and maintain the structure, while increasing success for team work in each department, thereby shaping the organization.

A pedagogical approach in terms of teaching and learning is essential for virtual and traditional schools. Instructional structure serves as a valuable tool and shapes the pedagogical approach. The mission, vision, and learning purposes guide the organizational structure of colleges (Britt & Jex, 2008).

Centralized vs. Decentralized Organizational Structure

Howell et al. (2013) indicated that a shift occurs in organizational structure toward decentralization. Success of distance learning depends upon organization instruction. Result from a managerial survey conducted in 2002 revealed that 28 percent

of public schools and 44 percent of private institutions follow the academic/administrative centralized model, while 58 percent of public and 32 percent of private institutions follow the academic decentralized/administrative centralized model.

When comparing the centralized organization of small businesses, the top-tier management, or administrators, maintain control over the decentralized organizations. This larger organization prefers giving authority to lower ranks. However, the optimum authority and decision-making model for organizations includes a balance between the centralized and decentralized organizational structures (Gilani, 2013).

In regard to leadership, the more creative, innovative, and visionary leaders engage in decentralized organizations. These leaders present creative solutions based on their knowledge and awareness of the environment and their role within the organization (Fraher, 2011) . These leaders implement policies and procedures to ensure consistency of the organization.

Planning and Policy Implementation

An Assistive Technology Coordinator is responsible for developing web accessibility guidelines. The ability to apply accessibility is a process to be learned based on practice, instruction, and training over a period of time. The institutional executives provide a committed visionary leadership by developing institutional policies and plans to create and maintain accessibility (Atz et al., 2013).

A conference hosted by a college in Kentucky in September 2013 included discussion focused on the administration's completion of the development process of implementing policies for accessibility. Several personnel participated in the development of this process, with the identification of the key personnel as a critical

component. These individuals recognized their role in the planning of accessibility (Atz et al., 2013).

Upon outlining the policies, the expected outcomes need to be presented. Technical standards (Section 508, WCAG level 1.0 or level 2.0) and consequences for non-compliance of the policies also require full attention. In addition, a mechanism for ongoing revision is essential, as technology continues to evolve (Atz et al., 2013).

When requesting faculty or staff participation in following the implemented policy, Atz et al. (2013) asserted that employees should be aware of and provided an outline of accessibility guidelines in their job descriptions. Concerns decrease when assistance and support are provided. After policy implementation, an evaluation process takes place, followed by a formal report that addresses the progress of the plan. During the assessment, data are gathered based on an evaluation of the website's information, which will measure outcome. Policy Implementation Theory impacts creation of these rules and guidelines for the organization.

Policy Implementation Theory

When inadequate preparation of policies and systems occurs, outcomes are impacted. The World Wide Web Consortium (W3C) through the Web Accessibility Initiative (WAI), developed accessibility guidelines for the implementation of policies, in addition to Section 508 guidelines. Local standards include those of the federal, state, or organizational standards (Foley & Regan, 2002). Policy implementation consisted of all components of distance education or online learning and includes the electronic library, websites, and distance learning departments of colleges.

The success or failure of the policy influence the implementation more effectively with similar policies. Ferguson (2005) noted that according to Van Meter and Van Horn “policy implementation can be defined as acts by groups or people for the purpose of attaining a set of predetermined goals that were set forth by law or public policy” (p. 54). This process consisted of two steps of policy implementation (Berman, 1978; Lipsky, 1969). The first was a more authoritative design in single or multiple institutions. The second step focused on describing and analyzing the relationship between policy and practice. Developments of these processes were presented from either a top-down or a bottom-up perspective (Ferguson, 2005).

In a top-down perspective, the assumption exists that “policymakers and implementation can be carried out successfully by setting up certain mechanism” (Paudel, 2009, p. 39). This perspective represents the policymaker’s view, and authority remains centralized. The bottom-up perspective addresses the “formal and informal relationship which constitute the policy subsystems that are involved in making and implementing policies” (Paudel, 2009, p. 41), with a decentralized authority. In this perspective, the policy decisionmakers follow intermediate individuals who better understand clients’ needs because of their direct contact with the public. Lipsky referred to intermediate individuals as the real policymakers (Paudel, 2009).

Americans with Disabilities Act of 1990

One of the major factors impacting the increase of students’ with disabilities access to colleges involves the passage of the Americans with Disabilities Act (ADA) (Madaus, 2001). Similarities of ADA to Section 504 and the Civil Rights Restoration Act of 1987 provide regulations which work together. Institutions offer a greater awareness

about the responsibilities to provide access to all facilities, services, and online programs or face-to-face instructions. The five sections of ADA that impact colleges in a variety of ways include: (1) Employment; (2) Public Services, including state and local government and transportation; (3) Public Accommodations; (4) Telecommunications Relay Services; and (5) Miscellaneous Provisions (Madaus, 2001).

Categories of individuals with disabilities include traditional demographics (visual impairment, hearing impairment, mobility impairment, and learning disabilities) and current demographics (temporary disabilities, situational, children, and aging population) that affect distance learning (Atz et al., 2013).

The ADA (1990) definition of a person with a disability refers to “someone with a physical or mental impairment that limits one or more major life activities” (Johnson, 1999, “Legislation”, para. 2). Therefore, the law requires equal opportunities provided by colleges for students with disabilities. However, the decision to receive accommodations depends upon whether the student requests it. Some disclose their disability, while others do not.

Based on The National Center on Education Statistics as reported by Przyboski (2012), 11 percent of students in higher education disclosed a diagnosed disability. He found that not all instructors took this data into account when teaching online courses.

Rehabilitation Act of 1973

The combination of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act resulted in accessibility for students with disabilities who desired to take college courses by providing them with a reasonable chance and opportunity to succeed. Students with disabilities possess the ability and intellect to apply for college

and qualify for admission. If they meet the necessary requirements for admission and qualify for college-level course work, assistance in the form of accommodations is provided (Ferguson, 2005).

Online courses need to be accessible, particularly for students with disabilities. The accommodations for the course provide access for these students that is comparable to that which is provided to other students during their class time experience. The U.S. Department of Education's Office of Civil Rights (OCR) continues to increase attention to this issue (Ferguson, 2005).

Preparing accessible online courses requires time and money, particularly because of the following:

OCR holds colleges and universities liable for not having plans of accessibility implementation on record ... [and] ... it is not enough, according to OCR, to handle student complaints about inaccessible web-based courses on a case-by-case basis. (Ferguson, 2005, p. 47)

Colleges are expected to create courses in compliance with the office of OCR requirements. By following the guidelines and laws, the number of legal issues decreases.

Legal Issues

Adult education plays a role in many individuals' lives. Therefore, accessibility becomes necessary for anyone, anywhere, at any time, and in a wide variety of disciplines in learning environments either online or face-to-face. Asynchronous learning networks (ALN) represent the concept that individuals learn at different times and places, such as online classes.

Legal court cases have occurred due to lack of accessibility in technology, and websites. One institution was involved in a court case brought by the National Federation of the Blind (NFB) due to inaccessible web-based technology at Penn State University. The settlement between them defined “electronic and information technology” or “EIT” to be accessible. In this regard an accessibility audit took place. Therefore an action strategy developed based on the audit findings. Then, procedures to develop policy statements on accessibility were conducted. In this settlement, library services and library website, university websites, course management systems, classrooms, personal response system (clickers), bank (ATM voice-guided) needed to be accessible. A grievance procedure takes place if a student or faculty complained to the administrator about inaccessible content (The Pennsylvania State University, 2011, “Accessibility”, para. 4).

Groves (2011) reported that Arizona State University, Princeton University, Reed College, Pace University, Darden School of Business, New York University, Northwestern University, Florida State University and Case Western University were included in other cases filed by NFB and the American Council of the Blind (ACB). Due to these cases, the accreditation agencies closely monitored for accessibility in distance education.

Due to the outcomes of these court cases, faculty training and awareness of ADA improved the skills and knowledge regarding the creation of an accessible online course shell. Therefore, students with or without disabilities succeeded during their academic journey and received quality learning. Colleges provided workshops on the different types of accommodations for students with disabilities (Dona & Edmister, 1992).

Web Accessibility

The number of students taking online courses has increased rapidly. According to Krivayanski (2013), almost seven million students requested distance learning with at least one online course. During the fall term of 2011, data showed that the online student population increased by 570,000 from the previous year. Bolkan (2013) reported that the students who took online courses doubled from 23 percent to 45 percent within the past five years. Hitchcock once said, “Learning is no longer limited to four walls ...” (Krivayanski, 2013).

A study completed by the College Board and the Babson Survey Research gathered data from 2,800 academic leaders regarding online courses. Approximately 77 percent of the participants rated online education similar to face-to-face classes. The most important comparison revealed by the study, showed that the number of faculty who believed the legitimacy of online courses had not changed from the past rates of 30.2 percent; however, 69.1 percent of the chief academic leaders found it critical to promote online learning. One aspect that this survey showed was that the retention rate of students in online courses remained as a barrier for institutions (Krivayanski, 2013).

Students in community colleges did not view online courses as equivalent in some subjects. Only 3 percent of 46 students took online courses from two community colleges under study (Fain, 2013). Also, Fain (2013) found that students preferred to be provided with well-constructed guidelines when taking online classes.

Web accessibility remains an important topic regarding learning within distance education. Recently, training was provided for making online courses accessible. Faculty attendance at these trainings was encouraged. When faculty completed training to make

their courses accessible, students with disabilities increased their chance of success and their interest in taking online courses (Atz et al., 2013). Some institutions created their own guidelines for accessibility to better accommodate the students with disabilities, according to The Chronicle of Higher Education (Carnevale, 1999). Also, the Americans with Disabilities Act and the Vocational Rehabilitation Act encourage online education.

Accessibility concerns for students with disabilities improved case-by-case, but the goal remained to create universally designed courses. Ferguson (2005) stated according to The Center of Universal Design, the definition of universal design included creating goods and services that required no demand for special modifications. While the Americans with Disabilities Act focused on similar components to those outlined in universal design, the references are not interchangeable.

The purpose of universal design is defined in representation (materials), expression (methods of communicating), and engagement (responses of students to curriculum), which is discussed in more detail as the final goal of course design. Brown, Cook, Park, & Robers (2008) outlined the nine principles of universal design to include:

1. Equitable Use: accessing course information, such as syllabi, in a variety of formats, verbally and readable;
2. Flexibility in Use: variety of instructional methods such as lectures, discussions, and individual and group activities;
3. Simple and Intuitive Use: clearly describe course expectations for grading in different formats by providing both narrative and rubrics;
4. Perceptible Information: using videos that include subtitle, or captioning for individuals with hearing impairment/deaf, for individuals who does not speak

English as their first language, or those who have difficulty processing verbal information;

5. Tolerance for Error: providing ongoing and continual feedback about course work rather than having mid-term or final-exam only;
6. Low Physical Effort: providing lecture notes so that students who struggle can simply add comments to their notes;
7. Size and Space for Approach and Use: making seating easily accessible, if possible so that everyone can see each other;
8. Community of Learners: creating a variety of learning settings, such as email groups, social networking sites, or chat rooms;
9. Instructional Climate: including a statement in the syllabus showing the desire to meet with students regarding their instructional needs.

Online software exists that monitors accessibility of courses in the online environment. Such software addressed accessibility concerns and identified potential problems. Coombs said in *The Chronicle of Higher Education* that “with a little bit of effort, everything could be accessible” (Carnevale, 1999, “Access to Online Courses, para. 20).

Two key concepts in achieving Web accessibility include: (1) commitment and accountability, and (2) training and technical support. One, without the other, is insufficient. In order to increase the ability to create accessible content, awareness of the issues, combined with leadership that expresses commitment, are necessary. Support regarding policies, procedures, and the monitoring of compliance with the standards

increased successful application of any concerns. Training and technical support provided to course creators, such as faculty impact accessibility (Bohman, 2004).

Providing web-based courses to students with disabilities becomes either liberating or limiting based on constructed content. Many factors impact and assist with accessibility concerns in web-based courses. Concepts to be addressed include: training for the person who created the course and for the webmasters or faculty on accessibility to online courses for students, especially those with disabilities. With all standards in place, stakeholders were aware of how the enforcement of these standards occurred and what took place when individuals did not follow the policies.

Accommodations

The different types of disabilities include learning, visually impaired/blind, hard of hearing/deaf, and motor/physical. With accommodations, these individuals are more successful when the courses are constructed through the universal design approach. The students with learning disabilities use a combination of assistive technology for both reading and writing. In addition, disability services coordinators, faculty, and students need to recognize the accommodations to overcome web access challenges. Johnson stated

Web-based classes can become complicated quilts if there is too much information on the monitor. A teacher should remove as much from the menu as possible, use basic colors, highlight only the important words and phrases, and be prudent about colored background. (ADE, 2004, “Web Access Challenges,” para 2)

Students with disabilities access the equipment needed for a quality education (Carnevale, 1999). Students with vision disabilities access Braille messaging, or those with physical disabilities access adaptive devices that support the usage of computers. For online courses, this means that a well-designed outline is required by law to provide accommodations to better access the course materials.

Empirical Studies

Based on previous research of the literature from two primary empirical studies by Ferguson (2005) and Fichten, Asuncion, Barile, Fossey, and de Simone (2000), two related topics developed: (a) how students with disabilities have utilized distance learning and (b) assistive technology devices and software that have benefitted these students. Both studies implemented a qualitative method with different sets of focus groups. The research relied on different types of needs and usage of assistive technologies as a means for helping students with disabilities succeed in distance learning. Technology offered an important benefit in the success of those students. In addition, accessibility of these courses played a significant role in improving the use of assistive technology devices for these students, therefore, improving outcomes (California State University, 2012). Online courses, when implemented using universal design, supported students' successful experiences consistent with their peers (Zaloudek et al., 2012). The findings suggest that online courses created with universal design and accessibility increased the enrollment of students.

Ferguson (2005) investigated how students with disabilities benefit from online education. Staff were interviewed from different departments at four higher education institutions. Two community colleges and two universities were selected based on the

number of students with disabilities and the number of online courses. Ferguson found evidence suggesting a reason for low enrollment in distance learning courses.

Ferguson (2005) conducted 19 formal interviews with 21 participants (17 individuals and two paired interviews, for a total of 19), including academic administrators, Americans with Disabilities Act (ADA) coordinators, and instructional technology directors. The research question asked, “What are designers of web-based distance education courses doing to accommodate ... students with disabilities?” (p. 10) Findings indicated that instructional technology and distance learning personnel lacked knowledge and skills in regard to accessibility for students with disabilities.

Ferguson (2005) referred to 1999 research from the U.S. Department of Education which revealed that the number of online courses had risen from 25,730 to 54,470 and enrollment had grown from 753,640 to 1,661,100 from 1994 to 1998. The results revealed that only a few of the universities encouraged students with disabilities to enroll in web-based courses. From a population of 74,000 students in the study, only 15 with disabilities took online courses, or less than 0.02 percent. Results also indicated that several ADA coordinators in Services for Students with Disabilities (SSD) offices discouraged their students from registering for online course. Results from respondents’ interviews showed that those who enrolled in distance education lacked an understanding of ADA laws. Some institutions conducted training for web-based course designs; but not all referred to accessibility issues when training faculty, even though these online courses required compliance with ADA guidelines. Ferguson noted that students with disabilities have greater access to course materials when web-based courses are ADA compliant, accessible, and use universal design.

As previously stated, Ferguson (2005) focused on institutions that included a higher number of students with disabilities in the research; however, a limited number of these students took online courses. In addition, the focus included students diagnosed with deaf/hard of hearing, blind/have color deficiency, or motor/physical disabilities, while other disabilities such as hidden learning were not mentioned.

Fichten et al. (2000) investigated the role of professors, technologists, and educational planners providing opportunities for students. Three empirical studies showed that the majority of students with disabilities used the Internet, but only 41 percent utilized assistive technology devices more effectively with their computers. The authors explored barriers for these students when using computers and adaptive computer technologies. The first of the three studies included focus groups of twelve postsecondary students (seven female, five male) and inquired about "advantages and disadvantages of computer and/or adaptive computer technologies for students with disabilities including their personal experience with technology, and factors which prevented or helped the student to access various technologies" (Fichten et al., p. 182).

Results indicated that usage of computers improved outcomes, while creating some barriers. Fichten et al. (2000) discussed that the use of computers with new technologies increased access to information for students with disabilities. Students with physical impairment used computer assistance when writing, which allowed them to be more organized in less time and provided less dependency on others. In contrast to such benefits, barriers created by computers in academies and classrooms reduced learning skills (e.g., students forgot how to spell a word since using spell check). In addition, Fichten et al. noted the high cost of using computer technology. Some software

experienced difficulties in compatibility. Discussions about attitudes of professors and other students, as well as the lack of funding, revealed another barrier. Fichten et al. disclosed that one limitation included the difficulty in distinguishing what type of assistive technology devices were used more commonly for the various disabilities.

Summary

This chapter defined Organizational Theory and compared two types of structure in a centralized or decentralized organization. It also introduced the issue of planning and Policy Implementation Theory relative to distance learning in creating an accessible learning environment for students with disabilities. Legislation, such as the Americans with Disabilities Act of 1990 and the Rehabilitation Act of 1973 were discussed to present a greater understanding of the laws and their impact on distance learning. Legal issues were cited that occurred as a result of inaccessibility to the web-based online environment. This chapter outlined information about web-accessibility and making web-based courses more accessible by defining the Universal Design concept. Although limited research exists, laws and theories provide the framework for this research.

CHAPTER III: METHODOLOGY

Chapter II explored the research focusing on two theories, Organizational Theory and Policy Implementation Theory, as the theoretical framework. A comparison was made between two organizational structures as centralized and decentralized, and a review was introduced on the Americans with Disabilities Act of 1990 and the Rehabilitation Act of 1973.

This chapter will explore the research procedures and describe data gathering and instrumentation. A discussion will follow on the research method that was chosen. Some limitations existed in the study and are further explained in this chapter.

Research Design

Method of Study

This study included surveys, case studies, and interviews. The research method began with a quantitative survey, followed by four qualitative case studies based on the survey responses of participants. “The central tendency among all types of case study is that it tries to illuminate a *decision* or set of decisions, why they were taken, how they were implemented, and with what results” (Yin, 2009, p. 17). Yin (2009) further defined them as follows:

- (1) A case study is an empirical inquiry that (a) investigates in depth and within its real-life context, especially when (b) the boundaries between phenomenon and context are not clearly evident.
- (2) The case study inquiry (a) copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result (b) relies on multiple sources of evidence, with data needing to covers in a

triangulating fashion, and as another result (c) benefits from the prior development of theoretical propositions of guide data collection and analysis. (p. 18)

Four participants were chosen for the case studies based on survey responses, feasibility of the research, and interest of the participants. Seven types of possible evidence used in case study research include documentation, file data reviews, interviews, site visits, direct observation, participant observation, and physical artifacts (Ferguson, 2005). This research utilized personal interviews, site visit, and documentation based on the quantitative surveys. Sixteen surveys were sent to ADA coordinators/SDS representatives, of which four were selected for an interview. Those four were chosen because of the population of students with disabilities, the role and title of the participants, their supervisors, and their approach for creating accessible courses in their colleges.

The case studies focused on *individual* theories and explored individual development, cognitive behavior, personality, learning and disability, individual perception, and interpersonal interactions (Yin, 2009). The research explored individual perception, learning, and disability, and themes emerged that replicated and predicted similar results.

Participants

Sample

This study focused on 16 colleges in a south central state in various geographical areas. The number of students enrolled in the institutions comprised a large population, over 100,000 students with or without disabilities. At the same time, not all students

declare their disabilities. According to the twelve survey participants close to 1400 of students had disabilities.

An electronic survey was completed by each college's ADA coordinators/SDS representative, which included population of students with disabilities, role and title of the participant, their supervisor, and their approach for creating accessible courses. These results guided the choice of the four institutions selected for personal interviews, as previously outlined.

Survey

An electronic survey gathered necessary information regarding the interviews, and a link to the Qualtrics online survey was emailed to each participant. Appendix A lists the survey questions based on the role of the individuals, their recognition of the organizational structure, and their thoughts and approaches to web accessibility.

The survey consisted of 33 questions in a variety of forms such as single choice, multiple choice, essay responses, and choosing all that apply. The questions were grouped into three areas: (1) Awareness/Accessibility, (2) Organizational Structure, and (3) Student Support and Accommodations. The first group of questions focused on the knowledge of the participants as to the variety of approaches for providing accessibility and requested information on the population of students with disabilities in each category. The second group of questions referred to the role, responsibility, title, departmental setting, awareness of policy implementation, and procedures of each college. The third group requested information on accommodations provided to students.

Interview Protocol

Questions that were asked in each of the personal interviews are included in Appendix B. The purpose of these questions was to determine the effect of the organizational structure of each college and the roles of each individual. A discussion was held on the availability of resources such as Assistive Technology devices (software, hardware), creating workshops, providing training, funding, and the creation of a new position relative accessibility in each of the institutions. In addition, the researcher investigated different situations requiring problem resolution regarding accessibility issues in web-based courses.

Data Collection

After discussions with administrators from the chosen target colleges, positive affirmations were received regarding the research. The IRB documentation process began; and, upon approval, correspondence with participants was initiated by email to inform them of the study topic. They were asked to complete the Informed Consent Form and return it. Upon receiving the signed consent form, an electronic survey link was emailed to each participant. The interviewees were chosen based on responses and completion of surveys. The responses included number of students with disabilities in each college, and participants' responsibilities, title, and role.

In order to check for validity, three pilot surveys and interviews were completed with a director of Students with Disabilities Services Office, a library technology consultant, and a director of ADA/Equal Opportunity. These individuals possessed ample knowledge and experience in the field, and their expertise helped to reword the interview and survey questions.

Some of the questions for the survey instrument were selected from the WebAIM (Web Accessibility In Mind) website. A contact was made with personnel of the organization, and some of the questions were revised to meet the needs of this study. Permission was granted, and they reviewed the questions for validity. Also, some revisions were suggested by the dissertation committee members.

All participants signed the consent form for completing the survey and participating in an interview. The interviews were recorded with a digital recorder and transcribed. According to Yin (2009), the principles of data collection include: (1) Use multiple sources of evidence; (2) Create a case study database; and (3) Maintain a chain of evidence.

Reliability

Protocols included, but were not limited to, questionnaires, instruments, procedures, and general rules to be followed. Yin (2009) stated:

The protocol is a major way of increasing reliability of case study research and is intended to guide the investigator in carrying out the data collection from a single case even, if the single case is one of several in a multiple-case study. (p. 79)

The second principle of Yin's case study (2009) stated that the creation of the case study database would increase the reliability of the entire case study. The four components of developing the database include notes, documents, tabular materials, and narratives. Research tabular materials and narratives formatted for the database were utilized in the study.

To increase the reliability of the information in the case studies, a chain of evidence was maintained. An external observer serving as the methodologist reviewed and followed the research and created questions to aid in finding conclusions.

Validity

Types of tests of validity include: (a) Constructive validity; (b) Internal validity; and (c) External validity. This research included External Validity which is defined as “the domain to which a study’s finding can be generalized” (Yin, 2009, pp. 40-41). Replication logic was utilized in case studies for this research.

Triangulation refers to “rationale for using multiple sources of evidence” (Yin, 2009, p. 114). The methodology of the study was triangulated by multiple methods of analysis that included, but were not limited to participant interview, survey, and observation. The findings included the results of data triangulation based on ADA coordinators reporting on distance learning, organizational structure setting, and web-accessibility of students with disabilities. The results showed that these three entities impacted the organizational structure of each institution relative to creating accessible web-based distance learning.

The analytical method implemented in this research included Pattern Matching. Yin (2009) stated, “For case study analysis, one of the most desirable techniques is to use a pattern-matching logic. Such logic... compares an empirically based pattern with a predicted one (or with several alternative predictions)” (p. 136). The approach in this study strengthened the Internal Validity of the research.

Analytical Methods

Coding of Data

After completion of all interviews, a transcriber converted all spoken words to written words. Responses to each question, separated by theme and combined individually, were used to categorize the data and determine the theme of the data. For example, the answers to the first question for all participants were categorized into one document. The answers to the second question for all participants were bundled together and the researcher continued to combine responses for each question separately.

The first step in coding the interview transcriptions focuses on pre-coding the data by “circling, highlighting, bolding, underlining, or coloring rich or significant participant quotes or passages” (Saldana, 2013, p. 19) of greatest interest. The pages of the data were divided into three columns, with the first outlining the raw data or the narratives of the interviewees. The second column identified the preliminary codes, and the third defined the final code.

“Lumper” coding was applied in some parts and “splitter” coding was used in other. The splitter approach was implemented when requiring attention to detail. The paragraphs were divided into smaller segments, and each sentence was assigned a number with a code, therefore, allowing paragraphs to be separated when multiple themes were discussed.

Analytical memos were written in addition to field notes to personally relate to each participant’s voice. These reflected the research questions; coding choices; operational definition; and emergent patterns, categories, themes, concepts, and future

direction of the study. This process assisted in the generation of additional codes and categories.

Code mapping and categorizing related codes continued. Theoretical coding, also known as “Selective Coding,” helped to find the central or core category that illustrated the “products of analysis condensed into a few words that explained what this research was all about” (Saldana, 2013, p. 224).

Limitations

Relative to gathering the consent forms and completing the electronic survey, not all of the volunteer participants returned their consent forms. With that in mind, 15 of the 16 participants expressed an interest in the research, which surpassed expectations. However, only 12 of the 16 participants completed the survey. The four colleges that participated in the interview provided rich and valuable information regarding the field of the study. These colleges were selected based on the feasibility of research and the interest, role, and responsibility of the participants from different geographical areas of the state. Also considered was the number of students with disabilities enrolled in the college.

The educational background of the participants played an important role in their responsibilities in their position. Two participants indicated a Special Education background. Their knowledge of various disabilities was an important factor in the study.

Sixteen colleges were invited to participate in this research, but several did not respond. Email reminders were sent and phone calls were made, but two of the participants did not respond. In addition, one chose to discontinue in the middle of the survey, as that individual felt inadequate information regarding the survey questions was

provided. In another college, two interested individuals completed the survey since their job responsibilities were divided.

Voice responses to the questions were recorded. At the same time, no available indicators verified the responses regarding accessibility. Certain factors impacting their answers may have affected their job; therefore, some may have provided only part of the information regarding accessibility. Some participants provided clear and sharp responses about the importance of accessibility in their college and whether the current system needed improvement to benefit everyone, particularly students with disabilities. For example, an interviewee stated that the IT department did not install the web accessibility component of an emporium online course, assuming that this essential component was not needed. However, this accessibility component would have helped students with disabilities.

Summary

The research was designed using a quantitative and qualitative data collection method, which explained how the organizational structure and personnel of each institution impacted the accessibility of online learning and type of accommodations provided. Upon receiving the Informed Consent Form, the survey was sent to the participant colleges, and four were selected for case studies interviews. This chapter explained the four instrumental case studies with a purposefully chosen sample. In addition, a discussion was included on methods to ensure reliability and validity and the method of coding.

CHAPTER IV: FINDINGS, ANALYSES, AND RESULTS

Chapter III discussed and reviewed the methods of study, data collection, and the analysis of data. Validity and reliability of data were examined as well as the selection of samples.

This chapter provides a summary of the research, including the findings from the survey and the interviews at colleges. Implementation theory and organizational structure were utilized to highlight what these colleges provide to their students regarding accessibility of web-based courses. Discussion follows regarding the data and its correlation to the research.

Data Analyses

Research began with an invitation to 16 colleges to participate in a survey. Thirteen participants began the survey, but one chose not to continue because she lacked answers to the questions on the survey. At the same time, two participants from one of the colleges were involved as they shared responsibilities. Therefore, the total number of participants for the survey portion of the research included 12. The survey was conducted electronically, and cross-tabulation of the multiple choice responses revealed the total number of each response. The findings also referred to a few other questions that were posed in the form of narratives.

Research feasibility and interest of the participants supported the selection of interviewees. Interviews were recorded through a digital recorder and transcribed. Upon review of the transcriptions, an Excel file organized the data dividing the page into three sections to code, categorize the findings, and establish themes for the study. A search was

performed for patterns and inconsistencies among the colleges. Data analysis concluded when no new findings were found among the questions from the four interviews.

Reflective and analytical memos assisted in data analysis. Each interview was reviewed multiple times, and findings were written in the margins of each page using the researcher's own words in order to code them. During this process, analytical and reflective memos were written. To validate findings, consultations were conducted with the methodologist to ensure a focus on the research questions.

Survey Report

The survey consisted of 33 questions (Appendix A) and was electronically distributed among ADA coordinators/SDS representatives of 16 colleges in Kentucky. The questions were grouped into three areas: (1) accessibility/awareness, (2) organizational structure, and (3) supports and accommodations. The number of students with disabilities, in increasing order, included deaf/hard of hearing, visual, physical/motor, and learning disabilities.

Accessibility/Awareness

As reported by the survey, nine of the participants selected more accessible websites, which impacted providing access. The lack of web accessibility skills or knowledge ranked as the highest factor among eight of the colleges. Lack of awareness for web accessibility remained as a concern for seven of the colleges.

In regard to providing access to students, one question asked about different assistive technology devices that were provided to students with disabilities. A variety of software such as Zoom text, JAWS (voice recognition), Kurzweil (reading), and Screen Magnifier software were reported as assistive technology utilized by students with

disabilities to accommodate them in their courses. Interviewees indicated that the Vocational Rehabilitation Office provided for the needs of the students outside the college. However, Student Disability Offices provided accommodations for students while in school as reported by the participants.

Equivalent alternatives, such as text equivalent, provided web accessibility for students with disabilities. Yet, only one responded that those alternatives were utilized. Two indicated that nothing was offered, while the remainder of the participants lacked the knowledge that such accessibility was available in their college. Another question specifically asked whether closed caption or text equivalent to videos was provided for every video that was posted, i.e., closed captioning or transcription. Those methods were unavailable among the colleges who participated in the survey.

As reported, the total number of students with deaf/hard of hearing disabilities was 31, physical/Motor disabilities was 54, visual disabilities was 55, learning disabilities was 877, and other disabilities totaled 355 which learning disabilities ranked as the highest.

Another question asked whether any accessible manuals or guidelines existed for students with disabilities when utilizing assistive technology software or hardware. Nine of the participants were unaware of any accessible manual or guidelines.

Organizational Structure

Addressing organizational structure, the questions focused on their role, title, responsibilities, and awareness of policy implementation in each college. The organizational structure of these colleges was discussed regarding providing online accessibility for students with disabilities. Since the library provided online resources,

participants were asked their opinions regarding the collaboration of library personnel and its accessibility with online learning. In addition, the survey asked about their awareness of the college's policy implementation procedures.

The online library as part of distance learning needed to be accessible. Regarding connection and involvement of the library with web accessibility, only one participant stated that "the director of library services coordinates with Disability Services as needed to assist students with web accessibility." However, the participants further stated, "[director of library] does not play a primary role in the overall web accessibility for the college." As reported by the survey, the remainders of the participants were uncertain as to library involvement and were unaware of library participation with online accessibility.

Eight participants possessed knowledge about policy implementation in regard to accessibility. One form of accessibility for online courses included transcriptions for the audio and video or closed captioned videos. The survey questioned whether such services were available to faculty and students. Results indicated that only one respondent was provided such service. Ten were unaware of such service and had no closed captioned or text for their videos. Also, to ensure accessibility awareness, faculty training played an important role. Results revealed that only five of the colleges conducted training for Section 508/Accessibility guidelines for their faculty. However, responses did not indicate whether mandatory training existed.

Ensuring the awareness of students and faculty for various assistive technologies is critical. While three colleges had no guidelines or manual, nine were unaware of the existence of such guideline in their college. Only one had guidelines and training for the faculty. Another question focused on courses published by faculty and whether

institutions reviewed the courses for accessibility. Only three of the colleges reviewed courses, and the remainder of the participants knew of no course revisions regarding accessibility.

Data revealed that six colleges preferred students with disabilities did not enroll in online courses. In regard to collaboration among ADA coordinators/SDS representatives with instructors, policy makers, curriculum committees, instructional design groups, and distance learning committees, instructors and participants were found to collaborate in six of the colleges based on the survey responds. Four were not involved in any type of collaboration from the list provided in the survey.

Supports and Accommodations

Results found that half (6) of the colleges encouraged students to enroll in web-based courses. Also, as far as accommodations for the students with disabilities, each college responded with a variety of answers. Two stated the accommodations were provided based on the needs of students, and eight indicated that extended time for tests served as the primary accommodation provided to students.

One college offered an online degree program in which a student with hearing impairment/deaf was enrolled. The department ensured that the student would receive the necessary accommodations, but the student left and did not return. According to the responses, "They were trying to accommodate her but in fact they were not." Also, funding became an issue as colleges wanted to provide more accessible videos with closed caption. A survey participant had asked the faculty to provide a closed captioned video in the form of a DVD. After speaking with the department in this regard, they told her, "You don't really expect me to do this for just one student, do you?" However, in

another case, a professor demonstrated how accessibility impacts student learning by turning off the sound of a video so that everyone in class experienced the loss of learning. In another course, a Mathematics instructor created his own videos with closed caption because such videos did not exist for students. Even though these tasks require additional effort, faculty members knew that accessibility impacts these students.

College representatives reported a lack of field experts to achieve accessibility for students with disabilities. Inadequately trained personnel and faculty were still required to provide content accessibility according to the law. A summary of participant responses are provided in tables 1, 2 and 3 below in regard to providing web accessibility.

Table 1

Web Accessibility Survey

Questions	Reponses		
	Yes	No	I Don't Know
Awareness of policy implementation	8	5	
Equivalent alternatives for any multimedia presentation	1	2	10
Caption or text is provided for every video posted online	0	5	8
Accessibility manual and guidelines available to students to utilize assistive technology	1	3	8
Faculty are trained	5	3	5
Online courses reviewed before published	3	5	5
Students with disabilities are encouraged to take online courses	6	1	6
Students with disabilities prefer to take online courses	2	8	3

In the study collaboration of the participants with several entities was questioned. Results revealed that none of the participants collaborated with instructional designers and publishers. However, a high collaboration was found among participants and instructors. The entity named “others” refers to any other department, group, committee in an academic environment on table 2.

Table 2

Web Accessibility in Regards to Organizational Structure

Entities	I work with
Instructors	6
People who implement policies	5
Curriculum committee	1
Instructional designers	0
Distance learning committee	4
Publishers	0
Other	7

Several questions were asked regarding the participants' awareness of accessibility. Lack of accessibility skills or knowledge ranked as the highest item that affected providing accessibility to students.

Table 3

Awareness of Accessibility

Reason	% Response
Lack of web accessibility awareness	7
Lack of web accessibility skills or knowledge	8
Fear that accessibility will hinder the look or functionality of the website	3
Lack of budget or resources	3

These findings reveal that providing more awareness for colleges and participants between different entities such as faculty affect accessibility. These survey questions guided the research about the importance of accessible online content.

Interview Reports

Data regarding the personnel interviewed, including their title and raw data, is detailed in Appendix D. Pseudonyms were used for all participants and colleges. For example, an interviewee was represented as John, Disability Services Coordinator, from College A. A review of findings of the themes from the interviews indicated consistency with the survey. The following table lists each person's title and their colleges.

Table 4

Interviewees

Participants	Title
<i>Community College A</i>	
John	Disability Services Coordinator
<i>Community College B</i>	
Bob	Director
Brett	Disability Resource Manager
<i>Community College C</i>	
Amy	Disability Resource Manager
<i>Community College D</i>	
Chad	Disability Services Coordinator

Three themes emerged from the interviews: (a) accessibility/awareness, (b) organizational structure, and (c) student support. All four interviewees discussed these topics at length.

Accessibility/Awareness

When providing web accessibility, John stated, "We are not giving disadvantaged students any extra or any less than any other student that they are entitled to." Similarly, Brett stated, "The goal is to have a level playing field for every student including those

with disabilities.” Amy noted, “Most people just don’t think about accessibility.”

According to Bob and Brett, “Accessibility has an important role and access to all information is necessary in either online or face-to-face class.” Online accessibility impacts distance learning, as stated by John, who further emphasized, “All classes need to be accessible for all students because you never know when you are going to have a student with a disability enrolled.”

Working with different individuals and departments in the college included, but was not limited to faculty and ensured development of accessibility initiatives with all interviewed participants. Chad indicated he worked with the “Webmaster and Blackboard administrator at his college to ensure that everything is accessible.” Also, John served as a member of the Distance Learning Committee in his college in the past. Relative to support and providing access directed by the Distance Learning Coordinator (DLC), Chad stated that his college recently hired a DLC to ensure that, “With advances in technology anything that is technology related is to be accessible for all students.” Amy stated, “Someone should be there for faculty.” She continued by stating that a DLC or committee does not exist in her college. Before online courses were launched for students, a demonstration of the mechanism to ensure accessibility checks of online courses needed to occur.

Amy said, “When access is not thought of . . . putting a course on the web is a concern.” Bob and Brett both stated, “When the courses launched, they should be fully accessible with closed captioned videos.” They further indicated that, by creating an accessible course, we “allowed students with disabilities to have the same opportunities as everyone else has.” John mentioned that, in order to ensure accessibility before courses

are published “An accessibility checklist” should exist. Questions arose regarding the individuals responsible for checking courses for accessibility. John stated that the “More experienced faculty in online teaching could be a better fit to review the courses.”

Therefore, while building the course, content is checked for accessibility concerns.

Ensuring that faculty members have prior knowledge on accessibility requirements, Amy stated, “Faculty training and workshops are a good starting place.” John and Chad both indicated “Continuous training is recommended every semester.” Moreover, John stated especially for “The new and old faculty members always needed refreshes.” Bob and Brett stated that because “Technology is growing rapidly, there is a delay in providing information to faculty or people in charge of creating courses.”

To overcome accessibility concerns, faculty training plays an essential role. In Chad’s college, training already exists on the importance of accessibility when faculty set up online courses. Colleges need to create workshops and trainings for professional development with mandatory attendance. Brett said, “Accessibility should be forethought not an afterthought.” Bob stated that faculty needed to assure “Access to all information, either online or face-to-face.” John further emphasized that “Accessibility is equal opportunity for everyone.” Amy added that colleges should ensure and “Check for mandatory accessibility before courses are posted online.”

In discussion on those responsible, Bob stated, “Faculty thinks that creating an accessible course is the responsibility of ADA/SDS Office, but it is everyone’s.” Amy further noted, “The role of ADA law is to make sure that the courses are accessible.” While they taught using different learning styles, a need existed for methods in providing

content. For example, when using an audio file, a transcription for the stream should be posted on the course site to provide accessibility.

Faculty play an important role in working with publishers. “Faculty needs to work with the publishers that have more accessible content,” according to Bob and Brett who had experience with a publisher. They stated that some publishers are aware that their content is not fully web accessible at this time. Amy further noted that, “Sometimes the publishers say that the content of the materials provided is accessible, but it is not told to faculty in their trainings.”

All interviewees stated that online courses need to be accessible to everyone. Brett warned to keep in mind that technology grows rapidly. He further stated, “For this reason, there was a delay in providing the new information to faculty for creating their courses.” Bob and Brett noted that the library and the Information Technology Department should purchase more accessible content, such as books online and DVDs with closed captions. Amy continued, “Closed captioning or texts with sounds have got to be there!”

Organizational Structure

All interviewees were employed in the Department of Student Services and reported to the Dean or Vice President. As stated, each college worked as a decentralized unit within a system. All participants referred to the headquarter office that disseminated their work. Therefore, similar organizational structures were found among the colleges in regard to the ADA/SDS Office organized in a centralized structure. However, each college was decentralized when creating policies and procedures and enforcing them. Centralized application of policies occurred through all colleges, such as sexual

harassment or information technology usage. Bob and Brett stressed that implementing ADA /Accessibility policies should be enforced by the system office.

Relative to research, a point of contact in a headquarter office for accessibility does not exist. Interviewees repeatedly stated, “a point of contact is necessary” in the system office. Chad further added, “No consistency existed among all the colleges which needs to be addressed” in regard to providing accessibility. Each college presented no approach, method, or setting to clarify the ambiguities in policy implementation and the creation of procedures. John said, “The system office has to do all the recommendations and each college should work with the system office” state wide.

With regard to organizational structure, Bob and Brett stated, “It was clear that since all the colleges are under one system office, the main office should create the policies.” This was noted by all interviewees. “Policies ensure everyone is aware of accessibility initiatives.” “Sexual harassment and IT (Information Technology) policies” should be implemented by the system office. Everyone in all colleges was required to sign that they were aware of such policies. “As of yet, there are no policies for ADA accessibility or disability law to ensure people know what we are talking about,” Bob and Brett explained. They added, “Everyone should know about the law and an attitude adjustment in terms of disability and providing access” must occur.

Amy and Chad suggested the creation of a “How to?” handbook for colleges, which “Can be a great plus as a starting point.” When policy implementation occurred by the main office, the president or dean of each college enforced and mandated the policies. The main office (system office) creates policies, and colleges follow them through a decentralized structure. Chad said that in addition to policies and procedures, “Someone

from the main office needs to design the trainings for the entire faculty across all of the colleges to ensure consistency.” “It would be a very slow process” according to all interviewees. At the same time, all departments and programs gain an awareness of web-accessibility guidelines.

Chad stated that trainings could be designed online for ease of access while others stated that face-to-face training is needed. By completing each of the trainings, Chad indicated that a certificate could be awarded to the participants for “creating accountability for everyone.” He added that “The trainings should be mandatory and everyone joins, but a point of contact in the headquarters office is needed for creating these trainings.”

Creating an awareness for everyone, such as faculty, staff, and new hires, with no exception, remains a priority, as Bob and Brett stated. All interviewees noted that enforcing implemented policies greatly impacts accessibility. Faculty guidance is needed regarding the development of procedures and providing plans of action when creating courses before they are launched and could be implemented by the president or dean of each college. However, Bob and Brett further stated, “There is resistance since faculty thinks creating accessible courses is the ADA/SDS Office responsibility.” They continued, “Questions were asked by the Office of Civil Rights (OCR) in regards to accessibility of online learning” from their college. All interviewees stated that each department or program should be allocated funding in regard to accessibility. Amy gave an example stating, “Getting a site license of software for a college is very pricey.” Also, she said, “Groups of student workers can be hired and trained to create closed captioned videos” for faculty.

As the finding reported, centralized structures existed among the colleges ADA/SDS offices. In addition, centralized application of policies implemented by the headquarter office occurred for each college. Therefore, a point of contact is needed at the system office to assist with implementing ADA/accessibility policies and establishment of standardize training for all the colleges.

Supports and Accommodations

A variety of different accommodations exists for students. All interviewees addressed accommodations for students with disabilities to include “extended time.” Amy stated, “There is one person in her college that shows faculty if a student needs extended time, how to provide such accommodation online.”

Bob and Brett continued, stating that they once had a student in an online course, but the course “was not accessible” and “an interpreter helped the student.” Another case involved a “live-chat,” and the student “was left out.” John noted that, a student with hearing impairment/deaf disability enrolled in an online class that included live sessions throughout the course where the faculty member engaged students in a live discussion. Therefore, John worked with the faculty and hired an interpreter to accommodate that student. Bob and Brett explained that one of the courses was taught in an emporium style that provided strictly online content. To prepare the course, the “IT department did not install the accessibility component of the software while it was available for the course.” Therefore, the faculty member created tutorials with closed captioned to accommodate the students. Chad indicated that his college “tries to be proactive and tries to address [accessibility] early.”

Research Questions

The first research question referred to the organizational structure and how it was defined by the interviewees. In addition, it queried how the organizational structure supported the accessibility for distance learning. The individuals discussed that college organizations should be structured top-down. All 15 colleges reported to one office. A centralized administration among all the colleges guided the system (main) office. However, each college implemented policies and procedures in a decentralized structure.

All interviewees stated that consistent standards should be applied to accessibility. A designated individual should establish policies for all colleges. As Bob stated, "Since accessibility is not an option, it should be there."

All interviewees were housed within Student Support Services or Student Affairs, and reported to the vice president or dean of that department. According to discussions during the interviews, Student Disability Office representatives prefer that the president of the college enforced the implemented policies. Each college should include a department, team, or committee to outline procedures and to assist with policy implementation.

The second research question referred to different types of accommodations provided to the students with disabilities such as deaf/hard of hearing, motor/physical, vision, and learning. The common accommodation for online or distance learning included the request of extended time. Colleges provided time and a half or double time. It also was noted that, live online class discussions occurred in a virtual environment, which excluded students with hearing impairment/deaf disabilities. Therefore, an interpreter joined the student in the discussions. Another question revolved around online

degree program development to enable students to continue their education. For one student who was deaf the department stated that accommodations would be provided if the student enrolled in the degree program. However, “nothing was done,” and the student “dropped out of college” and did not return.

“Many of the students with physical disabilities choose to take online classes for the purpose of mobility,” John said. He added that, “A lot of students with cognitive disabilities do not choose online classes and sometimes their advisors do not recommend it because they need in-person” instruction.

The third research question asked how the provided accommodations by the organizational structure benefit the students with disabilities, as defined by the ADA coordinators/SDS representatives. Students desire to be successful, including those with disabilities. When accessible online courses exist, students with disabilities have an equal opportunity to succeed.

The main points that have developed from this research include the need for accessibility policies and procedures supported by faculty for students with disabilities in online courses. Bob and Brett stated that an Accessibility Office should be guided by a dean who needs to be experienced and knowledgeable about technology and the accessibility guidelines and ADA laws. A Distance Learning Coordinator assists the faculty with their questions about Blackboard. Student workers transcribe the courses and create closed captioned videos for faculty to post online. All of these concepts provide support for these students to allow for their success during their college experience.

CHAPTER V: CONCLUSIONS AND RECOMMENDATIONS

Chapter IV discussed the findings relative to the survey and interviews completed for the study. The voices of the participants provided themes that emerged from the rich data. In this chapter, a summary of this research is provided as well as recommendations for addressing any concerns discussed during the study and implications for further research.

Summary of the Study

This study explored the impact of organizational structure affecting online or web-based learning with respect to accessibility for students with disabilities. The study found that policies and procedures should be implemented for all colleges to follow within standardized guidelines and disseminated among colleges. While a centralized structure existed in the system, policy implementation and enforcement occurred at this location. A decentralized structure of leadership existed among the colleges; therefore, policy enforcement took place at the president/dean level.

Another important factor focused on participants comments. John stated, “We want to have a level playing field.” “The courses should be accessible anyway,” Brett added. The most common accommodation provided for the majority of the students with disabilities who took online courses included “extended time.”

In order to provide accessible courses, interviewees emphasized that training is needed for faculty to ensure awareness of the laws and accessibility guidelines. Also, they requested a point of contact in the main office to develop the accessibility training. Chad noted that inconsistencies existed among the colleges on these trainings and guidelines. Bob and Brett continued that an Accessibility Office is needed, which would

be guided by the dean. This location served as the designated point of contact for students, faculty, and technology personnel.

Recommendations

As a result of the exploration of concerns that were raised, several questions emerged in regard to providing accessibility, organizational structure, policy implementation, and individuals involved. Questions for future research include:

- What training is needed by faculty relative to accessibility practices?
- Who needs to be trained other than faculty?
- What resources needed to be allocated to support the accessibility initiative?
- How are departments that provide online programs funded to enable the creation of accessible online learning for students with disabilities?
- How did awareness and training on the utilization of online courses impact online enrollment for students with disabilities?
- Who checked for accessibility of online courses?
- Who should be involved in implementing accessibility policies for other colleges?

Implications

As the number of students with disabilities increases, the need for online accessibility impacted online enrollment. As more students attend colleges, providing accessibility is an important factor. Organizational structure becomes apparent as a new topic for research. Studies are limited relative to distance learning, online learning, and students with disabilities. This research investigated accessibility of online learning for

students with disabilities. At the conclusion of interviews with ADA coordinators/SDS representatives regarding web-accessibility, research determined to be limited on the effect of organizational structure of colleges and its impact on these students. Accessible courses assured compliance with Section 508, which raised the following questions: (1) How do trainings that are provided ensure the necessary requirements will be taught?; (2) Who needs the training?; and (3) Who ensures that all courses offered provide accessible content?

This study used both Organizational Theory and Policy Implementation Theory indicating that leaders of the colleges played an important role in creating and enforcing online accessibility policies and procedures. Previously, research in education focused on quality of education and instructional design of the courses. While accessibility for online or web-based courses is provided by law, some faculty assumed their responsibility did not include providing accessible course content. Therefore, training, workshops, and guidelines are needed since accessibility is a requirement according to laws.

Ferguson (2005) reported that research shows 1 out of every 11 college students was diagnosed with at least one diagnosed disability. Therefore, proactive colleges made their courses accessible while designing the content. Leaders played an important role in enforcing online accessibility in organizational structures among colleges. Centralized leadership among key personnel in each college standardized the organizational structure to provide consistent accessibility procedures.

Future studies should investigate online course accessibility needs utilizing focus groups of students with disabilities. Further research is needed on the challenges that these students face in overcoming the barriers of online learning. Additionally, more

information can be gleaned on the use of assistive technology software/hardware when the students are enrolled in online courses.

Conclusions

A separate unit or department, possibly designated as an Accessibility Center, should be created at each college to provide support and training for faculty regarding their courses. In addition, training is needed for students who are unfamiliar with online platforms such as Blackboard as well as training for student workers in transcribing videos for faculty.

With the recent innovations in organizational design, the Team-Based organization can influence leadership relative to the educational environment. This type of organization is evident in colleges (Britt & Jex, 2008). Therefore, if such a team in the system office existed to implement accessibility policies, colleges could enforce the policies.

All colleges would benefit from the establishment of an Accessibility Center with a representative in the main system office to assure consistency of policies. This research uncovered a variety of approaches used among the colleges to implement policies. The decentralization that existed caused a lack of awareness regarding accessibility.

Some colleges were found to have hired a Distance Learning Coordinator who assisted faculty. These findings indicated that some faculty resisted accessibility due to lack of support. To increase awareness, mandatory online training for faculty developed by the Accessibility Center is needed and recommended across all colleges. Faculty members should be required to sign accessibility policies and attend training for awareness of online accessibility. Sexual harassment and Information Technology

policies exist and faculty and staff are required to sign them. An accessibility awareness policy needs to be added to these requirements.

Implementing policies, applying and enforcing them, creating procedures, and training and awareness take time. Therefore, the formation of a centralized administrative unit can reduce the time needed to increase accessibility awareness. Some colleges provide a checklist to assess courses regarding instructional design, but few address accessibility. If an accessibility team existed in the system office to implement guidelines and policies, then each Accessibility Center could enforce those policies. Each dean or vice-president would report directly to the president as all personnel must be informed regarding its existence.

If the federal government establishes an organizational structure model for all colleges, consistency would be maintained across the nation. Currently, the GOALS Project as Gaining Online Accessible Learning through Self-Study provides guidelines on accessibility for institutions. Recent lawsuits and legislation have created motivation to ensure accessible websites. In addition to websites in distance learning, an online library is another important outlet for accessibility.

Research has shown that colleges solve the accessibility concerns on a case-by-case basis. However, as stated by Ferguson (2005), "Officials cannot address student complaints about inaccessible web-based courses on a case-by-case basis" (p.155). The findings of this study did not report any visual or motor/physical request of accommodations for students with disabilities. The findings revealed that the Vocational Rehabilitation Office provided the accommodations for those students outside of college setting such as homes. However, if these students requested an accommodation while

attending college, then the SDS office is required to provide necessary accommodations. Some colleges reported that it was not occurring.

In regards to building courses with accessible content, perhaps guidelines exist for faculty to follow, but the evidence shows that laws are not being followed by everyone. Therefore, many students with disabilities are discouraged from taking online courses which impacts enrollment and retention. Surprisingly, while we assume that everyone follows and is aware of the law, the finding revealed that it does not occur in some colleges in regards to providing accessible content. Therefore, as it was discussed previously, training and workshops provide a way to increase awareness for college's administrators and faculty.

This research revealed that colleges do not provide enough training or guidelines on accessibility for faculty in regards to students with disabilities. The findings also found that college administrators serve as critical leaders in addressing accessibility. Future plans for policy implementation on accessibility are limited due to a lack of awareness of the law and training for faculty. Perhaps, if these conclusions were followed, more students with disabilities could successfully complete online course work like their peers.

REFERENCES

- ADE. (2004). *Accessibility in distance education*. Undrestanding Disabilities Retrieved from <http://www.umuc.edu/>
- Anonymous. (2001, May). *Assistive technology, accommodations, and the Americans with Disabilities Act*. Cornell University, Ithaca, NY.
- Anonymous. (2010, September). *Supports, modifications, and Accommodations for Students*. Natural dissemination for childern with disabilites:Retrieved from <http://nichcy.org/schoolage/accommodations>
- Atz, S., Chand, G., & Melky, H. (2013). *WKU Accessibility* (Websites, Distance Learning, Library). Bowling Green, KY.
- Berman, P. (1978). The study of macro and micro implementation. *Public Policy*, 26(2): 157-184.
- Bohman, P. (2004). *Introduction to web accessibility*. WebAIM. Retrieved from <http://webaim.org/blog/new-webaim-website/>
- Bolkan, J. (2013, June 24). *Report: Students taking online courses jumps 96 percent over 5 years*. Campus Technology. Retrieved from <http://campustechnology.com/articles/2013/06/24/report-students-taking-online-courses-jumps-96-percent-over-5-years.aspx?=&CTCC>
- Britt, T. W., & Jex, S. M. (2008). *Organizational psychology*. Hoboken, New Jersey: John Wiley & Sons, Inc.
- Brown, S., Cook, B., Park, H. J., & Robers, K. D. (2008). Universal design for instuction in postsecondary education: A systematic review of empirically based articles. *Journal of Postsecondary Education and Disability*, 24(1), 5-15.

- California State University. (2012). *Rubric for online instruction*. Chico. Retrieved from <http://www.csuchico.edu/roi/>
- Carnevale, D. (1999, October 29). *Colleges strive to give disabled students access to online courses*. The Chronicle of Higher Education. Retrieved from <http://chronicle.com/article/Colleges-Strive-to-Give/13474>
- Carnevale, D. (1999, October 29). *The Chronicle of Higher Education*. Access to on-line courses. Retrieved from <http://www.dimenet.com/dpolicy/archive.php?mode=A&id=50;&sort=D>
- Doit. (2012). *A checklist for making distance learning programs welcoming and accessible to all students*. Equal Access: Universal Design of Distance Learning. Retrieved from https://www.washington.edu/doit/Brochures/Technology/equal_access_uddl.html
- Dona, J., & Edmister, J. H. (1992). An examination of community college faculty members' knowledge of the Americans with Disabilities Act of 1990 at the fifteen community colleges in Mississippi. *A Canadian Perspective on Learning Disabilities Journal of Learning Disabilities*, 340-350.
- Ed.gov. (2014). *Americans with Disabilities Act (ADA)*. US Department of Education Retrieved from <http://www2.ed.gov/about/offices/list/ocr/docs/hq9805.html>
- Equal Employment Opportunity Commission. (2014). *The Americans With Disabilities Act of 1990*. 35 Years of Ensuring the Promise of Opportunity. Retrieved from <http://www.eeoc.gov/eeoc/history/35th/1990s/ada.html>
- Fain, P. (2013, April 26). *Online courses are second choice for community college students in some subject areas*. Inside Higher ED. Retrieved from

<http://www.insidehighered.com/news/2013/04/26/online-courses-are-second-choice-community-college-students-some-subject-areas>

Ferguson, T. L. (2005, July). *Web accessibility for students with disabilities who use assistive technology: A moving target for postsecondary institutions*. Doctoral Dissertation. Retrieved from <http://digital.library.okstate.edu/etd/umi-okstate-1453.pdf>

Fichten, C. S., Asuncion, J. V., Barile, M., Fossey, M., & de Simone, C. (2000). Access to educational and instructional Computer technologies for postsecondary students with disabilities: Lessons from three empirical studies. *Journal of Educational Media*, 25, 179-201.

Foley, A., & Regan, B. (2002). *Web design for accessibility: Policies and practice*. Ed/IT Lib Digital Library. Retrieved from <http://editlib.org/p/17779/>

Fraher, A. (2011, Spring). *The pros and cons of decentralized leadership*. On Leadership. Retrieved from <http://views.washingtonpost.com/leadership/panelists/2010/09/the-pros-and-cons-of-decentralized-leadership.html>

Gilani, N. (2013). *The difference between centralized and decentralized organizations*. Retrieved from http://www.ehow.com/info_8703779_difference-between-centralized-decentralized-organizations.html

Greenfield, T. P. (1977, April 5). *Organization theory as ideology*. Paper presented at the meeting of the American Educational Research Association, New York, NY.

Groves, K. (2011, November 15). *List of web accessibility-related litigation and settlements*. Web Accessibility Consultant, Web Developer, and Viking.

Retrieved from: <http://www.karlgroves.com/2011/11/15/list-of-web-accessibility-related-litigation-and-settlements/>

Hallahan, D. P., Kauffman, J. M., & Pullen, P. C. (2012). *Exceptional learners an introduction to special education*. Upper Saddle River, NY: Pearson.

Handel, M. J. (2003). *Sociology of organizations*. Thousand Oaks, CA: Sage Publications, Inc.

HHS.gov. (2013, October). *Section 508*. U.S. Department of Health & Human Services. Retrieved from <http://www.hhs.gov/web/508/>

Howell, S. L., Lindsay, N. K., & Williams, P. B. (2013, September 21). *Thirty-two trends affecting distance education: An informed foundation for strategic planning*.

Westga. Retrieved from:

<http://www.westga.edu/~distance/ojdla/fall63/howell63.html>

Johnson, A. L. (1999, May 17). *Students with Disabilities in Postsecondary Education: Barriers to Success and Implications for Professionals*. Retrieved from National Center for Education Statistics: <http://counselingoutfitters.com/Johnson.htm>

Krivayanski, M. J. (2013, January 27). *Number of students taking online classes increases dramatically*. Contributor Network. Retrieved from:

<http://voices.yahoo.com/number-students-taking-online-classes-increases-11984265.html>

Lipsky, M. (1969, August). *Toward a theory of street-level bureaucracy*. Paper presented at the meeting of the American Political Science Association, New York, NY.

- Madaus, J. W. (2001, March). Services for college and university students with disabilities: A historical perspective. *Journal of Postsecondary Education and Disability, 14*(2), 1-40.
- McFarlane, D. A. (2001, January). A comparison of organizational structure and pedagogical approach: Online versus face-to-face. *Journal of Educators Online, 8*(1), 1-43.
- National Center for Education Statistics, (2011). *Learning at a distance undergraduate enrollment in distance education courses and degree programs: 2008*. Retrieved from <http://nces.ed.gov/pubs2012/2012154.pdf>
- New England ADA Center. (2014). *Americans with Disabilities Act employment course*. ADA National Network. Retrieved from http://www.newenglandada.org/sites/ADATitle1_HTML/3ReasAccom.html
- Paudel, N. R. (2009, December). *A critical account of policy implementation theories: status and reconsideration*. A Critical account of policy implementation theories. Retrieved from <http://pactu.edu.np/contents/njpg/dec2009/3-narendra-paudel-a-critical-account-of-policy-implementation-theories.pdf>
- Przyboski, K. (2012, November 27). *Online course design: 8 tips for teaching students with disabilities*. Get Educated eLearning. Retrieved from <http://www.geteducated.com/elearning-education-blog/online-course-design-8-tips-for-teaching-students-with-disabilities/>
- Saldana, J. (2013). *The Coding Manual for Qualitative Research*. Thousand Oaks, California: SAGE Publications Ltd.

Students with Disabilities as Diverse Learners. (2008). *Hidden/Invisible disabilities*.

Teaching All Students, Reaching All Learners, including Students with Disabilities as Diverse Learners. Retrieved from

http://www.ist.hawaii.edu/training/hiddendisabilities/05_hidden_disabilities.php

The Pennsylvania State University. (2011). *Settlement between Penn State University and National Federation of the Blind*. Accessibility. Retrieved from

<http://accessibility.psu.edu/nfbpsusettlement>

W3C. (2012). *What is web accessibility?* World Wide Web Consortium. Retrieved

November 18, 2013, from <http://www.w3.org/WAI/intro/accessibility.php>

Yin, R. K. (2009). *Case study research design and method*. Thousand Oaks, California:

Sage Inc. .

Zaloudek, J. A., Brinckman, B., & Booth, A. (2012). *No special accommodation needed: Universal design for online learning*. STOUT - University of Wisconsin.

Retrieved from http://www.ncfr.org/sites/default/files/downloads/news/100-16-ncfr12_udlhandout.pdf

Appendix A: Survey Questions

Important: This survey is distributed between the identified individual as representative of Student Disability Services of each institution. Please read and answer each question carefully. Please note that your responses will be used in a research to identify the better practices for online/distance learning. By filling out this form you have given the consent to participate in my research.

Please answer each question as honestly as possible. There is no right or wrong answer.

Thank you for your participation, and I appreciate your assistance with my research.

Note: Some of the following questions are adapted from surveys done by WebAIM projects in Low Vision, Screen Reader, motor and Physical Disability.
<http://webaim.org/>

1. Please select the college you are from:

- Ashland CTC
- Big Sandy CTC
- Bluegrass CTC
- Elizabethtown CTC
- Gateway CTC
- Hazard CTC
- Henderson CC
- Hopkinsville CC
- Jefferson CC
- Madisonville CC
- Maysville CTC
- Owensboro CTC
- Somerset CC
- Southcentral KY CTC
- Southeast KY CTC
- West KY CTC

2. What is your position or job title?

3. Who do you report to?

4. Please list the offices on campus that provide support to students with disabilities.
5. What area/departments do you oversee?
6. How library is connected to process of accessibility?
7. Are you aware of policy implementation for your institution?

Yes
 No

8. Please indicate the number of students in your institution in each category:

	Number of students
Vision	_____
Hard of hearing/ Deaf	_____
Physical	_____
Learning	_____

9. What type of assistive technology do your students use when interacting with a webpages?

10. Equivalent alternative for any multimedia presentation is provided on websites:

Yes
 No
 I don' know

11. Caption or text is provided for every video posted online:

Yes
 No
 I don' know

12. There are manual or guidelines available for students to utilize when working with hardware/software Assistive Technology?

Yes
 No

I don' know

13. Faculties are trained in Section 508/ Web accessibility guidelines?

Yes

No

I don' know

14. Online courses in my institution are reviewed for accessibility before getting published to students?

Yes

No

I don' know

15. My Students are encouraged to take online courses?

Yes

No

I don' know

16. My Students prefer to take online courses.

Yes

No

I don' know

17. At my institution, I work with the following people for designing the instructional materials. (Check all that apply)

Instructors

People who implement policy

Curriculum Committee

Instructional design group

Distance Learning Committee

Publishers

18. What Screen Readers do your students use primarily?

19. Does your institution provide training to your students for Screen Readers?

20. How do you provide the Screen Reader to students?

21. Do you see free or low-cost screen readers (such as NVDA or Voice Over) as currently being alternative to commercial Screen Readers?

Yes

No

I don' know

22. Do you have students to use braille output?

Yes

No

23. Which of the following do you think has bigger impact on improvement to web accessibility?

Better (more accessible) websites

Better Assistive Technology

Other _____

24. In general, what is your feeling regarding the accessibility of web content over the previous years for students?

25. Which of the following do you think is the primary reason that many developers do not create accessible websites?

Lack of awareness of web accessibility

Lack of web accessibility skills or knowledge

Fear that accessibility will hinder the look, feel, or functionality of the website

Lack of budget or resources to make it accessible

26. Please rate computers proficiency of your students:

Expert

Advanced

- Intermediate
- Beginner

27. Please rate Assistive Technology proficiency use of your students:

- Expert
- Advanced
- Intermediate
- Beginner

28. Do you wish more pages include text resizing widgets?

- Yes
- No
- I don' know

29. How important is adequate color contrast between foreground and background text to you and your students?

- Very Important
- Somewhat important
- Not Very important
- Not at all important

30. What voice recognition software you use primarily?

31. What type of accommodation do your provide to students with Learning Disability in online environment?

32. Are the PDF and Microsoft Office (Word, PowerPoint, Excel) checked for accessibility on the web?

- Yes
- No
- I don't know

33. If you answered Yes to the above questions, who checks for the accessibility?

Appendix B: Interview Protocol

1. What college policies exist for creating an online course and making the course accessible for individuals with disabilities?
2. What do you see the role and purpose of the ADA in distance learning?
3. What type of accommodation requirements serve students who are taking online courses?
4. What resources/services are available?
5. What should departments do when creating an online class?
6. What can faculty members who teach do to better the quality of the course?
7. What kind of accommodations do you see that faculty use for their online courses?
8. Do ADA coordinators teach faculty members how to develop their courses?
9. Are ADA coordinators involved in Distance Learning Committee?
10. What would be the necessary accommodations that must be provided to students when taking online courses?
11. Who or what department on your campus provides accessibility to students?
12. Who or what department do you work with?
13. Who do you think you need to report to?

14. How the structure of an organization could benefit the development of a more accessible online learning environment?
15. How to accomplish accommodations with department you work with (Student Disability Services)?
16. How your offices are structured and who do they work with for implementation of accessibility?
17. How the funding and budgeting takes place for web accessibility?

Appendix C: Informed Consent Form

Qualtrics Survey

Project Title: College Organizational Structure and its Impact on Accessible Distance Learning for Students with Disabilities, as Reported by ADA Coordinators/SDS Representatives

Investigator: _Mana Kariman, Department of Education, 270-779-1013_____

You are being asked to participate in a project conducted through Western Kentucky University. The University requires that you give your agreement to participate in this project.

The investigator will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may ask her any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have. You should keep a copy of this form.

1. **Nature and Purpose of the Project:** Higher education moves toward online learning at colleges and universities as a more convenient method of presenting courses. Therefore, universal design provides more accessibility for individuals with disabilities (PACE, 2008).

This research focuses on accommodations provided to students with disabilities by institutions and the assistive technology used when taking online courses. How to overcome the challenges by institutions for student with disabilities that use assistive technology is the focus of the research.

2. **Explanation of Procedures:** This study includes 16 colleges of Kentucky Community and Technical College System (KCTCS). One representative of each college who is responsible for students with disabilities will be asked to complete a survey. After completion, four colleges will be selected for in depth interviews.

3. **Discomfort and Risks:** There are no known risks associated with this research.

4. **Benefits:** The benefits are unknown at this time, but through this research, I hope to identify ways of improving outcomes students with disabilities who register for online courses through the use of assistive technology.

5. **Confidentiality:** Your identity will not be revealed in any publication resulting from this study.

6. **Refusal/Withdrawal:** Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

You understand also that it is not possible to identify all potential risks in an experimental procedure, and you believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

Your continued cooperation with the following survey implies your consent.

THE DATED APPROVAL ON THIS CONSENT FORM INDICATES THAT
THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY
THE WESTERN KENTUCKY UNIVERSITY INSTITUTIONAL REVIEW BOARD
Paul Mooney, Human Protections Administrator
TELEPHONE: (270) 745-2129

Informed Consent Document

Interview

Project Title: College Organizational Structure and its Impact on Accessible Distance Learning for Students with Disabilities, as Reported by ADA Coordinators/SDS Representatives

Investigator: Mana Kariman, Department of Education, 270-779-1013

You are being asked to participate in a project conducted through Western Kentucky University. The University requires that you give your signed agreement to participate in this project.

The investigator will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may ask her any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have.

If you then decide to participate in the project, please sign on the last page of this form in the presence of the person who explained the project to you. You should be given a copy of this form to keep.

1. Nature and Purpose of the Project: Higher education moves toward online learning at colleges and universities as a more convenient method of presenting courses. Therefore, universal design provides more accessibility for individuals with disabilities (PACE, 2008).

This research focuses on accommodations provided to students with disabilities by institutions and the assistive technology used when taking online courses. How to overcome the challenges by institutions for student with disabilities that use assistive technology is the focus of the research.

2. Explanation of Procedures: This study includes 16 colleges of Kentucky Community and Technical College System (KCTCS). One representative of each college who is responsible for students with disabilities will be asked to complete a survey. After completion, four colleges will be selected for in depth interviews.

3. Discomfort and Risks: There are no known risks associated with this research.

4. Benefits: The benefits are unknown at this time, but through this research, I hope to identify ways of improving outcomes students with disabilities who register for online courses through the use of assistive technology.

5. Confidentiality: We will do everything we can to protect your privacy. Your identity will not be revealed in any publication resulting from this study, and all surveys will be locked in a faculty's office for three years.

6. Refusal/Withdrawal: Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

You understand also that it is not possible to identify all potential risks in an experimental procedure, and you believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

Signature of Participant

Date

Witness

Date

I agree to the audio recording of the interview. (*Initial here*) _____

THE DATED APPROVAL ON THIS CONSENT FORM INDICATES THAT
THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY
THE WESTERN KENTUCKY UNIVERSITY INSTITUTIONAL REVIEW BOARD
Paul Mooney, Human Protections Administrator
TELEPHONE: (270) 745-2129

Appendix D: Sites and Participant Overviews

The chosen interviewees from different colleges for this multiple case study were based on three criteria: 1) the number of students with disabilities in each college, 2) the organizational structure of the college, and 3) the interest of the participants in this research.

The study began with three pilot surveys and two pilot interviews. The surveys were distributed among the institutions that showed interest in the study and had submitted their signed consent form. The number of institutions that participated in the survey was twelve out of 16. From the twelve institutions, four were chosen with the help of the methodologist who stated that feasibility is one of the factors that affect the research. Therefore, an email was sent to six interviewees, and four responded, after which I began scheduling the interviews. My target number of interviewees was four institutions, and I received responses from the participants. Table 4 outlines comprehensive information about the participants' title in these four institutions.

As mentioned, the names of the participants and their institutions are changed for confidentiality. In one of the colleges, two individuals were interviewed as they shared the job duties.

Table 4

Interviewees

Participants	Title
<i>Community College A</i>	
John	Disability Services Coordinator
<i>Community College B</i>	
Bob	Director
Brett	Disability Resource Manager
<i>Community College C</i>	
Amy	Disability Resource Manager
<i>Community College D</i>	
Chad	Disability Services Coordinator

John the Disability Services Coordinator, stated that based on his understanding, the headquarter office needed to develop accessibility policies and guidelines for colleges to follow. He said that all courses should be accessible all the time. He responded that he wanted a level playing field for every student including those with disabilities; nothing more, nothing less, just to get a level playing field. The mostly requested accommodation by students was the extended time (whether time and a half or double). He continued by saying that a lot of student with cognitive disabilities are not encouraged or recommended to take online classes. However, with equal opportunity for everyone, we were not giving disadvantaged students any extra or less than any other students. He also said that he participated in the distance learning committee in his college. The committee had developed a checklist, and the more experienced online faculty checked other faculty online courses to make sure they matched the checklist. Continuous training was recommended every semester for new faculty and old faculty, but it was not mandatory.

He reported to Student Services Office. In regard to needs of creating accessible content, he stated that students reported that this was not a strong need. The only request that he discussed involved a student who needed an interpreter for her online class since the class had live sessions, which was required by the professor.

Bob served as the Director of Access*Ability Resource Center (ARC), and Brett was the Disability Resource Manager/Coordinator of Deaf Students Services. Brett reported to Bob, and both agreed to participate in the interview. They both said to eliminate barrier, they were willing to “create more work for ourselves.” Providing training and workshops for faculty and staff with support of the Information Technology Department created awareness in regard to accessibility. Faculty assumed that creating accessibility of course content was the responsibility of the SDS office, but they knew it was everyone’s. However, if an issue arose, case-by-case, they provided accommodations. For example, a student with a hearing disability participated in an online class but was unable to participate in a live discussion online. Therefore, an interpreter worked with the student for accommodations. In addition, they suggested creating policies and procedures to enforce these requirements in colleges. The office of the president or the headquarters office should create guidelines whereby other colleges were required to comply with laws.

Funding was another topic that was discussed. They stated that ordering accessible online books from publishers that provided DVDs with captions, created videos with closed captions or transcriptions, etc., all required time and money. It also was discussed that, faculty provided different approaches for different learning styles; creating an accessible course provided equal opportunity for all. They continued that

accessibility is not an option, it just has to be. In addition, they stated accessibility needs to be forethought, not afterthought.

Amy as Disability Resource Manager at her college said she was not aware of an accessibility policy. The college provided a Blackboard go-to person who showed faculty how to provide extended time to students who need this specific accommodation.

According to ADA laws, all content of the web should be accessible; however, she said that some faculty did not consider accessibility. Therefore, it was extremely helpful to make faculty aware of their responsibilities regarding accessibility. She mentioned that putting the course on the web was the main concern of the faculty, not accessibility.

Faculty training and workshops were a good starting point to create awareness in this matter. There should be a mandatory mechanism that checks for accessibility before the courses get published. She stated that, in a perfect world, all courses should be accessible. In regard to publishers, she mentioned that some say their product is accessible, but this was not always the case. In addition, closed captioning or texts with sound had to be provided online. She said that creating accessible courses was not as difficult as faculty expressed to them. In regard to support for faculty, she said they did not have a distance learning coordinator or committee. She reported to the Student Service Office, but at the same time worked with IT, faculty, financial aid, the enrollment center, and acts as an advisor. As an advisor, she did not encourage students with disabilities to take online courses. She tried to have Blackboard personnel assist faculty, as well as someone who exclusively checked for web accessibility. She suggested that the headquarters office create policies, which other colleges adhere to; procedures needed to

be followed as outlined in the policies. Accessibility remained an important issue; Amy expressed that a How-To guide handbook would be a great help.

Chad was the Disability Services Coordinator and worked with the Blackboard administrator and webmaster to make sure everything was accessible. In his institution, they recently hired a distance learning coordinator. He stated that with advancing technology, anything that is technology-related should be accessible to all students. There should be training for faculty on how to make their courses accessible by gaining an understanding of the importance of accessibility. In his college, training existed, but more is recommended. He suggested that the headquarter office needed to have someone who creates training for all the colleges, possibly online training. Inconsistencies existed across the board. If the training was mandatory and a certificate received, there would be more accountability for everyone. He felt there were no issues in his college since they were trying to be proactive by addressing accessibility early. He also said they had an Assessment Center for students who had questions about the courses on Blackboard. The common accommodation requested by the students was extended time. He also stated that he did not encourage the students to take online classes since some did not have basic computer skills. He reported to the Student Services Office. He was looking forward to having a technology person to work with, but was concerned as colleges were seeing a budget cut.

