Impact of the Americans with Disabilities Act of 1990: perceptions of selected individuals at two major urban universities

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Impact of the Americans with Disabilities Act of 1990:
Perceptions of selected individuals at two major urban universities

by

Maurice Luke Williams

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Graduate Faculty in Partial Fulfillment of the
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For the Graduate College

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1995

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THE AMERICANS WITH DISABILITIES ACT OF 1990

The Americans with Disabilities Act was sponsored in 1989 by Senator Tom Harkin of Iowa, the Chairman of the Subcommittee on the Handicapped and co-sponsored by Senator Edward Kennedy of Massachusetts. The ADA was introduced in both the House of Representatives and the Senate on May 9, 1989. After numerous hearings and revisions, the ADA passed the House on May 22, 1990. On July 12th, the Senate followed suit and the ADA was forwarded to President George Bush who signed the ADA into law on July 26, 1990.
CHAPTER 1. INTRODUCTION

This is about integration, about breaking away from the isolation of special buses, special rooms, and special dorms. We've got to keep reminding ourselves that 'separate but equal' is not equal. (Raines & Rossow, 1994, p. 7)

The Americans with Disabilities Act of 1990 (ADA) is considered the most comprehensive piece of legislation enacted to prohibit discrimination against disabled persons in employment, public services, transportation, places of public accommodation and telecommunications (Mikochik, 1991). The ADA, signed into law on July 26, 1990 by President George Bush, is designed to remove barriers that prevented disabled individuals from experiencing the same rights and privileges as individuals without disabilities. It provides protection to Americans who are either mentally or physically disabled. Physical barriers that once prohibited accessibility for disabled Americans have to be changed or removed. In addition, ADA strengthened previous laws to assure that the rights of disabled Americans were no longer violated.

Introduction

In spite of their disabilities, more and more disabled students are seeking admission to colleges and universities across the United States according to HEATH (Higher Educational and the Handicapped), a Washington, D.C. based national clearinghouse on post-secondary education for individuals with disabilities (Ungrady, 1993). Presently there are more than one million disabled students who attend American post-secondary educational institutions. The Department of Education reported in 1991 that the number of students identified with
disabilities has increased every year since 1976, and this trend is expected to continue through at least the end of the century (Shapiro, 1993). Therefore, it can be expected that more people with disabilities will enter college in the future (Wilson, 1992).

The ADA is the law which grants disabled students the opportunity to have access to the same rights as non-disabled students. The Americans with Disabilities Act of 1990 also reinforces the concept of reasonable accommodation in education for disabled individuals.

Prior to the Americans with Disabilities Act, colleges and universities were required to comply with Section 504 of the Rehabilitation Act of 1973. Section 504 demanded that colleges and universities make their facilities accessible to students, faculty and staff with disabilities much like the ADA (Hill, 1992). However, there is a key difference between the two laws. Whereas, the 1973 law required persons to report their complaints to federal agencies, the 1990 law specified that disabled individuals have the right to sue institutions directly when they think their rights have been violated (Jaschik, 1993). It is this threat that is causing university officials to become more sensitive to the needs and demands of disabled students.

Statement of the Problem

Prior to passing the ADA, congress had learned that approximately 43 million disabled Americans had encountered discrimination in many ways, specially as a result of architectural, transportation, and communication barriers (Mikochik, 1991). The purpose of the ADA was designed to correct these inadequacies and provide a national mandate that would end discrimination against individuals with disabilities (Hill, 1992). The ADA requires that
reasonable accommodations be provided to individuals with disability. This reasonable accommodation requirement had a direct impact on institutions of higher learning, requiring them to make modifications to their classrooms, entrances to buildings, dorm rooms, showers, university public transportation and other facilities that are used by disabled individuals. The law further states, however, that institutions are not required to provide accommodations that will impose an undue hardship. Undue hardships may involve situations that require accommodations that are either to costly or disruptive to the operations of an institution.

Given the law, the problem undertaken in this pilot study was to determine to what extent two urban institutions—The University of Maryland and The George Washington University—have undergone needed changes to comply with the ADA to make their facilities more accessible to disabled students. Additionally, this study is designed to ascertain how disabled students perceive campus changes since ADA.

**Research Questions**

The study elicited answers to the following research questions:

1. What changes have physically disabled students seen on their campus since the ADA became law?

2. What changes have the Directors of Disabled Students seen on their campus since the ADA became law?

3. How are these changes perceived by both disabled students and the Director of Disabled Students on each campus?

4. Are these differences in the changes identified by both disabled students and the Director of Disabled Students on each campus?

5. What additional changes are identified by disabled students on each campus as being
needed to make their campus more accessible?

6. What additional changes are identified by the Director of Disabled Students on each campus as being needed to make their campus more accessible?

**Significance of Study**

_The Washington Post_ (April 12, 1993) reported that "... over a million disabled students attend American post-secondary educational institutions" (p. B5). This number is significant because the Americans with Disabilities Act of 1990 has required institutions of higher learning to make modifications in their facilities to make them more accessible for disabled students. This pilot study is important because it may serve as a valuable resource in assisting institutions to gain a better understanding of disabled students and their needs. Additionally, the study may draw attention to some of the necessary changes on campuses in order to be in compliance with the requirements of ADA. Following are summaries of the programs and services offered to disabled students on the two campuses in this study.

**Disability Support Service - University of Maryland**

The University of Maryland is a large public university having an excess of 30,000 students. It is located in College Park, Maryland, approximately 10 miles outside of Washington, D.C. Currently, the university has one of the largest disabled student populations in the Washington metropolitan area.

The Disability Support Service of the University of Maryland (DSS-M) provides services for over 450 members of the campus community who have been identified as having a disability. This number is based on students with disabilities who register with the DSS-M to
receive assistance based upon their needs. The DSS-M is part of the Campus Counseling Center. The Director of DDS-M is Dr. William Scales, who has served in this capacity for several years. He reports directly to Dr. Vivian Boyd, the Director of the Campus Counseling Center, and meets with her on a weekly basis to discuss budgetary matters along with issues and concerns pertaining to disabled students on campus. Dr. Scales oversees a staff of approximately 68 employees who are available upon request to assist disabled students. His staff is comprised of 2 graduate assistants, 1 coordinator, 1 secretary, 8-10 readers, 50 interpreters, and 3-5 assistants for mobility-impaired students.

The mission of the DSS-M is to coordinate services that ensure individuals with disabilities have an equal access to university programs. The DSS-M, according to Dr. Scales, approaches this mission in the following three ways:

1. Provide and coordinate direct services to students, faculty, staff members and campus visitors with disabilities. Services are tailored to meet the needs of individuals based on their specific disability. Presently, the scope of services provided by DSS-M includes interpreting services for deaf and hard of hearing individuals, and trained readers for blind students and for some students with learning disabilities; also, priority registration services, note taking services, and testing services for students who need special accommodations due to their physical disabilities.

2. Provide consultation for university staff, faculty and administrators to increase their awareness of the needs of people with disabilities and to reduce attitudinal barriers. This is done through workshops, trainings and classes, held in departments and campus-wide.
3. Provide information an support directed toward student and staff development on the needs and concerns of disabled individuals. Encourage students and staff with disabilities to gain skills in exercising their rights to negotiate assertively with the university community for equal access to facilities and programs.

**Disabled Student Services - George Washington University**

George Washington University is a large urban private institution located in Washington, D.C., only four blocks from the White House. Like the University of Maryland, George Washington University has one of the largest enrollments of disabled students in the Washington, D.C. metropolitan area.

The Disabled Student Services (DDS-GW) of George Washington University provides services for more than 200 disabled students. According to Christy Willis, Director of DDS-GW, their mission is to strive toward removal of attitudinal and architectural barriers and meet the needs of George Washington University students who have physical, emotional, and learning disabilities.

The Disabled Student Services employs a director who is responsible for overseeing a staff of 80 employees, consisting of readers, interpreters, test proctors, note takers and advisors who are available to assist disabled students. The Director of DDS-GW reports directly to the Dean of Students. Twice a month, the DDS-GW director meets with the dean to discuss matters pertaining to disabled students. The matters discussed may range from academic progress of disabled students to changes needed to improve campus accessibility.

Staff are available to discuss a range of issues such as course load, learning strategies,
academic accommodations, petitions for course waivers, housing needs, funding and referral
to campus and community resources. Students may be referred for additional services,
including diagnostic testing, tutors and specialized non-credit courses that are available on a
fee basis.

According to the director, DDS-GW provides the following services to students
without charge:

- Advocacy
- Readers
- Scribes
- Test proctors
- Learning Disabilities advising
- Registration assistance
- Adaptive materials and equipment
- Assistance with note taking
- Laboratory assistance
- Provision of information to professors
- Regular advising
- Referrals

Definitions of Terms

For the purposes of this study, the following definitions were extracted from the
Americans with Disabilities Act handbook (Equal Employment Opportunity Commission &
the U.S. Department of Justice, 1991):

*Cerebral Palsy* - A disability due to damages of centers in the brain resulting in spastic
paralysis.

*Deaf* - A individual who is unable to hear.

*Direct threat* - A significant risk to the health or safety of others that cannot be eliminated by
reasonable accommodations.

Disability - A limiting condition that involves (1) a physical or mental impairment which substantially restricts one or more of an individual’s major life activities, and (2) a record of such an impairment.

Discrimination - Any action intended to make distinctions in treatment.

Has a record of such impairment - Refers to an individual who has a history of, or has been misclassified as having a mental or physical impairment that substantially limits one or more major life activities.

Hearing Impairment - A reduction in the ability to perceive sound, ranging from partial to complete deafness.

Is regarded as having such an impairment - Reference to an individual who has a physical or mental impairment that does not substantially limit major life activities but is treated by a covered entity as constituting such limitation; has a physical or mental impairment that substantially limits major life activities only as a result of the attitudes of others toward such impairment; or has none of the impairments and is treated by a covered entity as having a substantially limiting impairment.

Major life activities - Functions such as caring for oneself, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning and working.

Meeting students' needs - Referring to the requirement of universities to meet the particular needs of all students.

Physical or mental impairment - Any physiological disorder or condition, cosmetic disfigurement, or anatomical loss affecting one or more of the following body systems:
neurological, musculoskeletal, cardiovascular, reproductive digestive or any mental or psychological disorder, such as mental retardation, organic brain syndrome, emotional mental illness and specific learning disabilities.

Post-secondary institution - Institutions that offer education beyond the 12th grade.

Program or activity - All of the operations of a college, university or other post-secondary institution.

Quadriplegic - An individual with paralysis of all four limbs.

Reasonable accommodation - Facilities required to be readily accessible to individuals with disabilities, including classrooms, entrances to buildings, dorm rooms, showers, university or public transportation and any other facility or equipment that may be used by individuals.

Spastic Paralysis - A steady and prolonged contraction of the muscles.

Special equipment - Specific supplies or furnishings provided to disabled students to help them function adequately.

Special transportation services - A transportation system that is available to those individuals who are unable to use the transportation system available to other people.

Substantially limits - Creates a situation whereby a disabled individual is unable to perform a major life activity that an average person in the general population can perform, or significantly restricts the condition, manner or duration under which a disabled individual can perform a particular major life activity as compared to the condition, manner or duration under which the average person in the general population can perform that same activity.

Undue hardship - An action requiring significant difficulty or expense.

Visual impairment - A reduction in the ability to see, ranging from partial to complete blindness.
CHAPTER 2. REVIEW OF LITERATURE

Introduction

This chapter cites selected literature and related research that focus on the nature and extent of changes that have occurred on college campuses to provide reasonable accommodation for disabled students as the result of federal legislation such as the Americans with Disabilities Act. President George Bush signed the ADA into law in July 1990. Prior to the ADA legislation, institutions of higher learning were required to comply with Section 504 of Title V of the Rehabilitation Act of 1973. Section 504 of Title V of the Rehabilitation Act of 1973 is reviewed, and the history of its amendments is also discussed in this chapter. The Rehabilitation Act of 1973 was used by disabled students until 1990, to ensure their rights were not violated on college campuses.

The first section of the review presents documentation of the needs of disabled students on college campuses. This description provides an understanding of the reasons why disabled students are demanding to have the same rights as non-disabled students. The second section is devoted to a brief description of the content of Section 504 of Title V of the Rehabilitation Act of 1973, with an emphasis as to why there was a need to further protect the rights of disabled students, ultimately leading to the passage of the ADA. Additionally, this section addresses the intent and purpose of the legislation and focuses on relevant amendments to the Rehabilitation Act of 1973. The third section will focus on the purpose and intent of the Americans with Disabilities Act of 1990. This act is considered to be the most comprehensive civil rights law for people with disabilities.
Needs and Challenges of Disabled Students on College Campuses

The ADA compels universities to make their facilities and accommodations more accessible to the needs of disabled students. In order to ensure campus facilities are accessible to disabled students, universities must install ramps, make curb cuts into sidewalks, install flashing alarm lights, rearrange furniture, install automated doors, and make other modifications (Wernick, 1992). Wernick further states that, to accommodate the needs of disabled students, classes may have to be moved from one location to a more accessible location. In addition, Jensen and McWilliams (1992) assert that, as a result of the ADA, interior and exterior signage for public facilities must now be accessible to people with visual impairments. Signs must also be included in both braille and raised lettering. Failure to make mandated changes could result in significant financial liability, costly litigation and loss of public image, and most important, loss of the valuable contributions disabled individuals can make to any academic community (Bishop, 1995).

In spite of their disabilities, disabled students do not intend to allow their disability to limit their pursuit of higher education on American college campuses. They want to be able to go to class, live in residence halls and attend extracurricular events on college campuses without restriction, which will require buildings be remodeled to accommodate their particular needs (Jaschik, 1993). In addition, disabled students want to be fully integrated into the university community as fully participating members and not simply marginal students enrolled there. Disabled students also want transportation services provided for them, such as shuttle buses that will help get them around campus and other places (Jaschik, 1993).
One of the major problems facing physically disabled students is the attitude (perceived or real) of faculty. There is a resistance on the part of many faculty and staff members toward the realization that physically disabled students are different and need special attention. Educational needs may vary depending upon the disability. It is the responsibility of faculty members at colleges and universities to help provide a vehicle for meeting the needs of disabled students (Humphrey, 1992). As the immediate providers of services to students with disabilities, currently, they must adapt their teaching methods, at least in part, to provide similar opportunities to all students, particularly those with disabilities. Faculty members must make reasonable accommodations for those students with mental or physical disabilities. For compliance with the ADA, disabled students must have access to the same teaching and materials as non-disabled students (Bauach, 1994).

**Campus accommodations for disabled students**

Greens and Zimibler (1989) estimated that approximately 1,586,000 (12.7%) disabled students attend colleges and universities in America. The EDUCOM, a consortium of higher education institutions and corporations that promotes the use of technology in education, estimates that approximately 10.5% of all college students have some disability, and nearly 40% of those have some sort of visual impairment while about 26% are deaf or hard of hearing (Wilson, 1992).

If the enrollment of disabled students continues to increase on college campuses, institutions will have to be prepared to accommodate their needs. For example, the University of Georgia Handicapped Student Services Office has developed a guide to provide
suggestions on how faculty members can best accommodate disabled students on their campus. As a mechanism, this office has provided some suggestions on ways to eliminate any barriers which may prohibit a student from achieving his or her educational goals. It offers guidelines on how to deal with individuals with specific disabilities, including hearing impairments, visual impairments and physical disabilities requiring the use of wheel chairs (Kalivoda, 1989). Following are some examples of their guidelines.

**Accommodations for the Hearing Impaired** - The major challenge hearing impaired students face is in the area of communication. These students typically rely on interpreters or on their ability to read lips to avoid missing any part of class discussions or lectures. Kalivoda (1989) makes the following recommendations to accommodate hearing impaired students:

1. Do not hesitate to write notes in communicating with deaf students.
2. For students who rely on lip reading: (a) avoid lecturing as you write on the chalkboard with your back to the student; (b) speak at a normal rate; and (c) arrange seating in order that the student will not have an obstructed view of you and other students during lectures and discussions.
3. Provide handouts frequently including major topics of the lecture or discussion on the chalkboards.
4. Write all assignments on the board or on handouts.
5. Be available and willing to answer any questions about the lecture material or assignments.
6. Repeat questions to make it easier for students to follow discussions.
7. The use of facial expressions, and gestures are helpful in conveying a message.

8. Provide note takers and interpreters to accommodate hearing impaired students.

*Accommodations for the Visually Impaired* - Visually impaired students include individuals with partial loss or total loss of vision. Kalivoda (1989) makes the following recommendations when working with visually impaired students:

1. Be sure to say what you are writing on the chalkboard.

2. Try to find a way for the student to touch things such as charts and diagrams.

3. Allow for a reader or additional time for students to complete assignments or exams.

4. Consider providing a course syllabus outlining reading and writing assignments well in advance of the first day of class.

5. Try to order text books or tapes well in advance of the start of class.

6. Try to avoid moving furniture and equipment around in the classroom or laboratory.

*Accommodations for the Mobility Impaired* - Accessibility is one of the major concerns of students in wheel chairs. There are many barriers, such as a stair, a narrow walkway, a non-automated door that cause major obstacles. The following recommendations were made in accommodating those who use wheel chairs (Kalivoda, 1989):

1. Move classes to accessible buildings.

2. Ask students what accommodations are needed to improve accessibility.

3. Arrange seating so that the students using a wheel chair will have the needed space.

4. Note takers may be needed if the student lacks coordination in taking notes.

5. When talking to a student in a wheel chair for more than a few minutes, it is better to sit
down and continue the conversation.

Students with disabilities are rapidly becoming a growing minority at the University of Florida, as elsewhere in American higher education (Osfield, 1993a). Like the University of Georgia, a faculty handbook was designed to provide faculty members with suggestions on how to accommodate disabled students.

*Accommodations for the Hearing Impaired* - Hearing impaired students who are either deaf or hard of hearing may require a wide range of services. The following recommendations were made for accommodating these students (Osfield, 1993b).

1. Provide front row seating for hearing impaired students to maintain a good view of the professor or interpreter (if used).
2. Be sure to speak in natural tone.
3. When an interpreter is available, be sure to speak directly to and maintain eye contact with the student, not the interpreter.
4. Recognize the processing time the interpreter takes to translate a message.
5. Repeat questions and remarks of other people in the room.
6. Use visual aids and the chalkboard to reinforce spoken presentations when necessary.
7. If requested, provide a note taker.
8. Provide the student with class outlines and lecture notes.
9. Do not hesitate to communicate with the student in writing when conveying important information such as assignments, and deadlines.
10. Do not obstruct students' view of the interpreter by walking between them.
Accommodations for the Visually Impaired - Osfield (1993b) makes the following recommendations for teaching students with visual impairments:

1. Provide reading lists or syllabi in advance to allow time for arrangements to be made such as the taping or Brailling of texts.
2. Provide readers, note takers or tutors for students in need.
3. Reserve front seats for low-vision students. Make sure seats are not near windows as the glare from the light can make it hard for a student to see the instructor or the board.
4. Verbalize the content printed on transparencies or chalkboard notations.
5. Face the class when speaking.
6. Convey in spoken words whatever is put on the chalkboard, as well as for graphic materials uses.
7. Permit lectures to be taped and/or provide copies of lecture notes.
8. Provide large print copies of classroom materials.
9. Be flexible with assignment deadlines.
10. If a specific task is impossible for the student to carry out, consider providing an alternative assignment.

Accommodations for the Speech Impaired - Students with speech impairments may have problems with articulation or voice strength to compensate for a loss of voice. Osfield (1993b) makes the following recommendations in accommodating students with speech impairments:

1. Give students the opportunity, but do not require them to speak in class.
2. Permit students the time they need to express themselves. Do not be reluctant to ask the student to repeat a statement.

3. Address students in a naturally speaking voice.

4. Consider course modification, such as one-to-one presentations and the use of a computer with a voice synthesizer.

   Accommodations for the Mobility Impaired - Among the major concerns encountered by the majority of mobility impaired students is whether classrooms are accessible to them. Osfield (1993b) makes the following recommendations in accommodating physically disabled students:

1. Before or early in the semester, consider whether physical access to a classroom is a problem.

2. Be prepared to arrange for a class to be moved to an accessible building if needed.

3. Be familiar with the building's emergency evacuation plan and assure that it is manageable for students who have mobility impairments.

   Library Facilities for Disabled Students

   The ADA demands that libraries have available to disabled individuals, the appropriate types of materials such as large print books, talking books, braille materials and audio tapes. The law also requires that Kurzweil machines, close-captioned video cassettes and telecommunication devices be made available (Withkopf, 1992). Specifically, campus libraries may have to make changes to their facilities to be in compliance with the ADA.

   The passage of the ADA requires libraries to cease discrimination in programs and
services (Gande, 1991). Because the needs of each student with a disability vary, it is difficult to state specifically what changes a library should make. Further, the ADA does not include specific changes libraries should make to avoid violation. This is why the ADA requires libraries to make decisions on a case-by-case basis to ensure compliance with the law (Gande, 1991).

To ensure compliance with the law, Florida International University established a committee in the spring of 1992 to determine if its libraries were accessible to disabled students. A report was submitted to the university community summarizing the findings and recommendations. Although the recommendations submitted by the committee may not be universally applicable to every campus library, they may offer some suggestions on how to improve the quality of services offered to students with disabilities. The recommendations made by Florida International University to improve library services offered to disabled students are as follows (Martin, 1992):

1. Issue a proxy card or allow disabled students to authorized someone else to check our materials when they are unable to come in person.

2. Retrieve books or periodicals from the stacks for persons who have a difficult time in doing so.

3. Accept telephone requests to determine if a book or periodical is available in the library.

4. Modification of lending policies might be necessary depending on the disability. For example, lending non-circulated materials to individuals who are visually impaired or have other disabilities is important for those who may need to use special equipment in
their homes.

5. Designate library student assistants to help disabled users who have a difficult time using the photocopy machine.

6. Provide a handout for persons with disabilities that include the location of accessible equipment and special services.

7. Set up VAX accounts for users with disabilities who have computers at home so that they can e-mail the designated library personnel for various services such as inter-campus loans, inter-library loans, and renewal of books.

In addition, to accommodate disabled students using computer facilities, the staff needs to be trained in use of computers so that they can assist patrons. Furthermore, the staff should also receive sensitivity training to respond appropriately to the needs of persons with disabilities. Also, procedures should be developed to ensure that disabled patrons are able to locate and/or notify site personnel for assistance. Special priority should be provided to disabled people at workstations in a manner that is also fair to non-disabled patrons. (Berliss, 1993).

Section 504 of Title V of the Rehabilitation Act of 1973

In 1973 Congress passed the Rehabilitation Act into law. This became the central piece of legislation by which the disabled pressed for their rights on college campuses.

Section 504 of Title V of the Rehabilitation Act of 1973 set a precedent for future legislation designed to protect the rights of disabled students on college campuses. Section 504 of the Rehabilitation Act of 1973 states that no otherwise qualified handicapped persons can be
excluded from any program receiving federal financial assistance solely because of their handicap. A large percentage of colleges and universities receiving federal financial assistance were forced to comply with section 504. Section 504 compelled colleges and universities that received federal financial aid to provide reasonable academic accommodations to disabled students, and to ensure these students receive equal access to higher education (Hurley, 1991). This act was passed by Congress to ensure that equal opportunities were provided for the disabled on college campuses. Section 504 was also intended to ensure that federally assisted programs did not exclude handicapped individuals because of their disability. Hurley (1991) questioned whether this piece of legislation represents a general philosophy toward eliminating discrimination against disabled Americans, or whether it represents the start of a social movement to advance the civil rights of disabled Americans on college campuses.

The History of Amendments to the Rehabilitation Act of 1973

Because of the uncertainty and lack of clarity involving Section 504, in 1974 Congress amended the Rehabilitation Act. Although there were no specific changes to Section 504, Congress included in the amendment more explicit statements concerning the policy behind Section 504. The policy stated clearly that colleges and universities receiving federal financial assistance are to operate without discriminating against disabled students in any way. This more focused demand within the amendment also laid the groundwork for guidelines regarding effective enforcement of Section 504. Congress had intended for the Department of Health, Education and Welfare (HEW) to issue the regulation, thereby empowering this branch of government to take proper action against colleges and universities receiving federal
assistance while discriminating against disabled students (Hurley, 1991).

To further strengthen its provision, Congress amended Section 504 when it passed the Rehabilitation, Comprehensive Services, and Developmental Disabilities Amendments of 1978. The amendments allowed federal agencies to give grants to state units to create and operate comprehensive campus rehabilitation centers that are responsible for providing information and technical assistance in accommodating the needs of enrolled handicapped students (Hill, 1992).

The amendments of 1978 included Section 505 (A) (2) of Title V of the Rehabilitation Act of 1973. Section 505 (A) (2) provided disabled Americans the same rights, remedies and procedures that were provided in Title VI of the Civil Rights Act of 1964. The amendment stated that remedies would include payment of attorney's fees, payment of expert-witness fees, injunctions as well as other equitable remedies (Hill, 1992). Congress amended Section 504 further when it passed into law the Civil Rights Restoration Act of 1987, which stipulated that Section 504 applies to all of the operations at colleges and universities. The Rehabilitation Act of 1973 and subsequent amendments helped to lay the ground work for future legislation whose purpose is to protect the rights of disabled students.

The Americans with Disabilities Act of 1990

Prior to the ADA, the National Council on Disability conducted a study in 1986 and announced that forty-three million Americans had either a physical or mental disability (Raines & Rossow, 1994). Disabled Americans experienced outright intentional exclusion, the discriminatory effects of architectural, transportation, and communication barriers,
overprotective rules and policies, as well as failure to make modifications to existing facilities and practices (Mikochik, 1991). On July 26, 1990, President George Bush signed the Americans with Disabilities Act into law. This law helped eliminate discriminatory treatment of 43 million Americans who have either physical or mental disabilities (Coleman & Furr, 1992).

The Americans with Disabilities Act of 1990 has been called the most sweeping civil rights acts enacted within the past 25 years. The law prohibits discrimination against individuals with disabilities in many different settings, including colleges and universities, regardless of whether the educational institution receives federal assistance (McCarty, 1992). It mandates colleges and universities to make accommodations and adjustments to ensure that disabled students do not experience discrimination (Frank and Wade, 1993).

The Americans with Disabilities Act of 1990 provides comprehensive protection for individuals with disabilities (Jones, 1991). The ADA grants comprehensive protection to individuals with disabilities in all areas employment; public accommodations; and public services, which include colleges and universities. The real impact of the ADA on college campuses, however, is more likely to be felt in the increased number of disabled students pursuing a higher education (Jarrow, 1991). As more disabled students continue to enroll on college campus, the ADA has heightened disabled persons' awareness of their rights. Thus, the ADA has increased the likelihood of litigation when disabled persons' feel their rights within the law have been violated (Rothstein, 1991).

The ADA guidelines provide different standards for existing facilities, new
construction, and alterations. Jarrow (1992) notes that existing facilities must remove architectural, communication, and transportation barriers where readily achievable. Readily achievable is defined as easily accomplishable without much difficulty or expense. For new construction, the standards for full accessibility are to be followed regardless of the cost of implementation. When facilities are altered or renovated in any major way, the altered area must be made accessible to and usable to the maximum extent possible by people with disabilities. Additionally, the ADA should be discussed with architects to ensure compliance of the law (Hecker, 1991). Thus, if colleges and universities operate a transportation service for non-disabled students, transportation must also be made available to disabled students.

Title II of the ADA provides the standards for universities. Title II states that no qualified individual with a disability shall, by reason of such disability, be excluded from the participation in, be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by such entity (Hill, 1992). This means that public transportation, such as bus or rail, must be made accessible to disabled people, including those in a wheelchair, thus requiring changes such as accommodating the needs of disabled people at depots. Title III of the ADA also states that, if buildings are operated by private entities that affect commerce, they too must be made accessible to disabled Americans (Hill, 1992). Facilities are classified as commercial when they are for the exclusive use of employees such as teachers or administrative personnel. In private schools and universities, this includes areas where students do not have access (Coltman, 1993). The key difference between the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 is that under the
new law people can sue institutions directly. Under the 1973 law, people had to bring their complaints to federal agencies to be investigated (Jaschik, 1991).

Individuals with disabilities have begun to assert their rights as society has mandated fuller integration of individuals with disabilities throughout colleges and universities. The Department of Justice had received almost one-thousand complaints within the first six months after the regulations took effect, while the EEOC anticipated receiving between 10,000 - 20,000 complaints by July 1993 (Shepard et al., 1992).

By August 31, 1993, the Department of Justice and the Equal Employment Opportunity Commission (EEOC), the chief agencies responsible for enforcing ADA, had received more than 16,000 complaints. Reported allegations involved inadequate public access or job bias. Specifically, of those filed, over 60% were related to physical barriers (Litvan, 1994). The EEOC received a total of 14,330 complaints regarding job bias. Forty-nine percent (49%) of that number regarded dismissal; 22% related to a refusal to accommodate; 13% to refusal to hire; 8% to retaliation for filing a charge; and 8% was listed as other (Litvan, 1994).

As disabled students continue to pursue a higher education, it becomes more important for institutions to provide information on the types of programs and services available to students with particular physical disabilities. Providing clear evidence of compliance with the ADA will enable disabled students to select an institution that is not only in compliance with the ADA but also capable of meeting their particular needs.

The State University System of Florida developed a guide of programs and services
provided at each of the nine state universities for students with disabilities. Figure 1 shows a summary of the services and programs offered to students with physical disabilities by the State University System of Florida (Osfield, 1993c).

Each of Florida’s nine state universities provides a variety of programs and services to assist students with disabilities. These institutions make available to each disabled student a

<table>
<thead>
<tr>
<th>Hearing Impairments</th>
<th>Physical Impairments</th>
</tr>
</thead>
<tbody>
<tr>
<td>• interpreter service</td>
<td>• reader service</td>
</tr>
<tr>
<td>• note takers</td>
<td>• accessible computers</td>
</tr>
<tr>
<td>• TTY/TDD access</td>
<td>• library access assistance</td>
</tr>
<tr>
<td>• visual alarms in residence halls</td>
<td>• extended time on exams</td>
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<td>• extended exam time</td>
<td>• campus orientation</td>
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<td>• ampliation system</td>
<td>• tutors</td>
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<td></td>
<td>• alternate classrooms for inaccessible areas</td>
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<tr>
<td></td>
<td>• wheel chair accessible van</td>
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<td></td>
<td>• writers for exams</td>
</tr>
<tr>
<td></td>
<td>• note takers</td>
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<table>
<thead>
<tr>
<th>Visual Impairments</th>
<th>Other Disabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• reader service</td>
<td>• extended time for exams and postponed</td>
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<tr>
<td>• Kurzweil Personal Reader</td>
<td>dates for assignments for students with</td>
</tr>
<tr>
<td>• tutors</td>
<td>HIV/AIDS</td>
</tr>
<tr>
<td>• note takers</td>
<td>• letters to instructors requesting needed</td>
</tr>
<tr>
<td>• alternate testing</td>
<td>accommodations</td>
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<tr>
<td>• extended time on exams</td>
<td>• counseling</td>
</tr>
<tr>
<td>• taped text books</td>
<td></td>
</tr>
<tr>
<td>• braille and taping equipment</td>
<td></td>
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<tr>
<td>• transportation</td>
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</table>

Figure 1. A summary of the services and programs offered to students with physical disabilities by the State University System of Florida
listing of the programs and services offered, further assisting them in making a wise decision on selecting an institution that will best serve their particular needs.

As important as it is for institutions of higher learning to become as diversified as the societies they serve, it is equally important for these institutions to evaluate their programs and services to see if they are meeting the needs of people they intend to serve. For example, the University of Florida conducted a self evaluation of its programs and services to students with disabilities in November 1992. The self evaluation was written to provide the university community with a comprehensive report regarding programs and services to all students, staff, faculty and the community at large. The primary purpose of this report was to evaluate programs and services provided by the university for disabled students and to document areas where improvement was needed (Osfield, 1993a). Ken Osfield, Assistant Dean for Student Services, served as the coordinator of the Self Evaluation Report. Findings and recommendations of the study were released on January 26, 1993. Some of the key findings from the self evaluation report are shown in Figure 2.

**Summary**

The review of literature included three areas. First, a description of the needs and desires of disabled students on college campuses was made. Faculty handbooks developed at the University of Georgia and the University of Florida were discussed as they provided suggestions on how faculty may accommodate disabled students on their campus. The handbooks further discussed some of the challenges faced by physically disabled students on their campus.
Committee on Persons with Disabilities (CPD) recommended that each academic department have at least one in-service workshop on ADA issues each year.

Committee on Persons with Disabilities recommended that all publications that identify a telephone number also include either a TDD or Florida Relay Service telephone number on its office letter head.

Committee on Persons with Disabilities recommended that the University provide funding for one full-time employee to be responsible for computer access on campus. This person would work with all departments in providing technical support to disabled individuals.

Committee on Persons with Disabilities recommended that the University begin to recruit persons with disabilities as students and employees.

The ADA coordinator and Committee on Persons with Disabilities recommended that only accessible facilities be used for any commencement activity.

Committee on Persons with Disabilities recommended that a plan is developed to make all its computer labs accessible to the visually and physically impaired.

Figure 2. A summary of findings and recommendations of a self evaluation report conducted by the University of Florida of its programs and services to students with disabilities (Osfield, 1993a)

The literature revealed that the major challenge faced by hearing impaired students was in the area of communication. Because of their disability, hearing impaired students may require a wide range of services to meet their needs. Some of these services provided by the lecturer may include: (a) writing notes on the chalkboard; (b) speaking in a natural tone; (c) providing handouts, including major topics and lecture notes; (d) using visual aids and the chalkboard to reinforce spoken presentations; communicating with the student in writing when conveying important information such as assignments and deadlines; (e) making sure there are no obstructions to the hearing student’s view of the lecturer and the interpreter (when an
interpreter is used); and being willing and available to answer questions. Services provided by the Student Services Office may include (a) providing interpreters; and (b) providing note takers when requested.

The literature also revealed that visually impaired students with a partial or total loss of vision may also require a broad range of services to accommodate their particular needs. These services may include: (a) making sure to say what is being written on the chalkboard; (b) providing reading materials or syllabi in advance to allow time for taping or Brailling of printed materials; (c) allowing additional time to complete assignments or exams; (d) providing readers, note takers or tutors for students in need; (e) ordering textbooks or tapes well in advance of the class; (f) reserving front row seats for students with visual and hearing impairments; (g) verbalizing the content printed on transparencies or chalkboard notations; (h) allowing lectures to be taped and/or providing copies of lecture notes; and (i) offering flexible assignment deadlines.

For students with mobility impairments, the literature noted that the major challenge faced is the accessibility of classrooms and services. Because of mobility impairments, students may need such accommodations as: (a) moving classes to an accessible building; (b) arranging seating to provide space for wheel chairs; (c) providing note takers if necessary; and (d) making sure that the building emergency evacuation plan is manageable for students with such disabilities.

The literature revealed that the major problem for students with speech impairments is articulation because of the loss of voice. The following accommodations were suggested for
speech impaired students: (a) providing the opportunity for students to speak in class; (b) allowing students enough time for self-expression; (c) addressing students in a natural speaking voice; and (d) considering modification of course delivery through one-to-one presentations or utilizing a computer with a voice synthesizer.

From the review of literature it is clear that even though students with disabilities face different challenges and require specific accommodations depending on their individual disabilities, they seek to have the same rights as non-disabled students and to participate fully in campus life and receive the same educational benefits. Students with disabilities do not want to their physical limitations to cause them to be denied equal access to similar services provided to non-disabled students. These students are demanding that their particular needs are met on college campuses. Laws passed by Congress and signed by presidents to ensure that the rights of disabled individuals are not violated were also discussed in this chapter. Such laws allow students with disabilities to press their demands with the assurance that these demands will be met.

Second, the impact of Section 504 of Title V of the Rehabilitation Act of 1973 was addressed. The specifics of the act, as well as its importance of providing safeguards ensure the rights of disabled students are met were summarized. The review also traced the succeeding amendments to Section 504 of Title V of the Rehabilitation Act of 1973.

The third and final section of the review of literature was devoted to the Americans with Disabilities Act of 1990. Literature was presented which discussed the intent and purpose of this legislation regarding the needs and desires of disabled students on college
campuses.

The review of literature provided insight on the issues and concerns facing disabled students on college campuses. Furthermore, the review of literature served as a vehicle for providing the foundation, the structure and framework for developing the interview questions used in the study.
CHAPTER 3. METHODS AND PROCEDURES

Overview

The content of this section of the study provides a comprehensive discussion of the methodology used in the present investigation and includes: (1) the Purpose of the Study; (2) Selection of Research Participants; (3) Sample Selection; (4) Data Collection Methods; (5) Data Analysis Procedures; and (6) Validity and Reliability.

Purpose of the Study

The purpose of the study was to determine how physically disabled students perceive the nature and extent of changes made at the University of Maryland and George Washington University to comply with the Americans with Disabilities Act of 1990. Because this law is still viewed as relatively new, many institutions are working to meet the requirements to be in compliance with the Act. In addition, this study is the first of this nature that focuses on students with physical disabilities at institutions of higher learning. Therefore, this study may be used as a pilot study for future research, perhaps on a national level. These two universities were selected for the study because they currently have the largest disabled student population in the Washington, D.C., metropolitan area and, therefore, provide an excellent opportunity to determine to what extent the ADA legislation has resulted in changes on two major American campuses.
Qualitative Research

In conducting a qualitative inquiry, researchers must be concerned with developing a sound method to carry out the study. This is extremely important because qualitative research has yet to gain the general acceptance that exists when conducting a quantitative study (Marshall & Rossman, 1989). Therefore, it is important for researchers to be able to provide a sound rational for qualitative inquiry.

To conduct meaningful qualitative research, the findings must be viewed as trustworthy; that is, how reliable and valid are the findings? According to Lincoln and Guba (1985), if a qualitative research study is to be viewed as trustworthy, it must be able to respond to the following questions:

1. How truthful are the particular findings of the study?
2. How applicable are these findings to another setting or group of people?
3. Can these findings be replicated if the study were conducted with the same participants in the same context?
4. How can one be sure that the findings represent the subjects and not the researcher's biases or prejudices?

Lincoln and Guba (1985) proposed four constructs that reflect the assumptions of qualitative research: credibility, transferability, dependability, and confirmability. Each of these constructs will be explained in more detail in the following paragraphs.

_Credibility_ - Credibility means that the inquiry was conducted in such a way as to ensure that the respondents' experiences were accurately described and identified. That is, the
findings must adequately represent those experiences reported by the respondents. To ensure credibility, the researcher used the following techniques: triangulation and respondent debriefing (Lincoln & Guba, 1995).

Triangulation - Triangulation is a method of data collection that cuts across two or more techniques or sources (Wiersma, 1991). In this study, the researcher interviewed respondents with physical impairments from two different campuses and the directors of students with disabilities programs to determine the respondents' perceptions of the changes made since the ADA became law.

Respondent Debriefing - At the conclusion of the interviews, the researcher individually discussed the responses with each respondent. Further, respondents were asked if they had any additional information to provide to this study. Within a day or two following each interview, the researcher contacted each respondent again to ask if there were any additional information they would like to include in this study. During this time respondents were given the opportunity to verify or change any statements provided.

Transferability - Transferability refers to the ability to demonstrate that the results of the study are applicable to other institutions (Lincoln & Guba, 1985). To assure transferability, the researcher provided a detailed description of the results of the study so readers could determine if the findings are applicable to their institutions.

Dependability - In this process, the researcher attempted to account for changing conditions in the subjects chosen for study.

Confirmability - This area focuses on whether the findings of the study could be
confirmed by another. The researcher kept detailed records on all of the data provided in this study. This will ensure credibility of the process and findings by providing access to other researchers who pursue the same research path and confirm the finding of this study.

Selection of Research Participants

In the Fall of 1994, the researcher sent a letter to the Director of Disabled Student Services on each campus requesting their assistance in compiling a list of 25 students with specific physical impairments to participate in this research project. Copies of correspondence with the University of Maryland and George Washington University requesting assistance appear in Appendix A. The researcher received letters from the Directors of Disabled Student Services expressing their willingness to participate in the study. Copies of these letters also appear in Appendix A. The non-disabled groups participating in the study were identified by the researcher as individuals who displayed the most interest in persons who have disabilities.

The researcher, along with Dr. Larry Ebbers, major professor, and Dr. Richard Warren, committee member, agreed to limit the sample size to 25 physically disabled students from each campus. This number seemed reasonable given the in-depth nature of the study, the emphasis on a pilot study, and the resources available to conduct the study. Most of the students who consented to participate in the pilot study arrived on campus after the ADA became law. For students who had been on campus two years or less, it was somewhat difficult for them to specifically address most of the changes that have occurred on campus since the ADA became law, however, they had some perception of the recent changes. The
purpose of the study was not to conduct a comparative analysis of the students' perceptions before and after the ADA, rather, the nature of the study focused on the perceptions of physically disabled students since the ADA. Their experiences contributed to the validity of this study.

In February 1995, the researcher contacted the Director of Disabled Student Services on each campus to request an interview with each of them. These interviews were not conducted to corroborate information provided by the students, rather the purpose was to gain the directors' perceptions of the changes that have occurred on their campus since the ADA became law. After the directors agreed to be interviewed, they were asked the same questions given to the disabled students. Although the interviews with the directors were conducted after the student interviews were held, the directors were not informed of the responses of the disabled students.

**Development of the Interview Questionnaire**

Questionnaires used in qualitative research typically entail several questions that are open-ended or have structured response categories. The questionnaire should provide findings related to the research questions and hypotheses being addressed. The questions should be examined for validity, clarity, and biases. This can be done by submitting the questionnaire to experts to determine the usefulness of the questions and perhaps reliability (Marshall & Rossman, 1989).

For the purpose of this study, the researcher developed a questionnaire of ten open-ended questions to interview disabled students from both campuses. To develop the
questionnaire, the researcher received assistance from several experts at the U.S. Equal Employment Opportunity Commission (EEOC) in Washington, who were especially knowledgeable in the ADA. The questionnaire was also submitted to Dr. Charles Kniker, former committee member at Iowa State University and an expert in qualitative research, and to Joyce Packwood, the Students with Disabilities Advisor in the Dean of Students Office at Iowa State University. Further assistance was provided by Dr. Larry Ebbers, the major professor involved in the research, and Dr. Richard Warren, statistician in the College of Education at Iowa State University. The questionnaire was then submitted to a panel of experts for their critique and additional suggestions were made on ways to improve the survey instrument in addressing the research issues of this study. The final instrument was submitted for approval by the Human Subjects Committee on Research with Human Subjects at Iowa State University.

Validity and Reliability

Best and Kahn (1993) assert the key to ensuring that the researcher has an effective interview is when the researcher initially establishing a rapport with the interviewee. The researcher was able to establish rapport with the participants by contacting them prior to the interview and discussing the study with them, allowing them to ask any questions concerning either the interview or the study. This element is crucial if the researcher is interviewing the research participants. Best and Kahn further contend that "... validity is greater when the interview is based upon a carefully designed structure, thus ensuring that the integrity and the significance of the information elicited" (p. 254).
To further ensure face validity, the questionnaire was submitted to a panel of experts. During the fall of 1994, the questionnaire was submitted to a panel of experts at the United States Equal Employment Opportunity Commission (EEOC) and to Joyce Packwood, the Students with Disabilities Advisor in the Dean of Students Office at Iowa State University. It was also submitted for review to Dr. Charles Kniker at Iowa State University, an expert in qualitative research, who was a former committee member of the researcher.

Wiersma (1991) asserts that the reliability of research depends upon the extent to which a study is capable of being replicated. This concept applies to the procedures used for the study. Wiersma further explains that "... if a study is reliable, another researcher who uses the same procedures, variables, measurements and conditions should obtain the same results" (p. 239).

**Sample Selection for the Student Interviews**

To ensure that a cross-section of students with various disabilities was selected from the two campus, purposeful sampling was used. This type of sampling entails selection based on the characteristics of the individuals who are relevant to the research problem (Wiersma, 1991); that is, the sample selection was based on prior identified criteria, (i.e., students were selected who did not have the same disability). According to Wiersma, the sampling in this case is not random and the researcher is assumed to be knowledgeable about the characteristics of the individuals being studied.

The Director of Disabled Student Services at the George Washington University agreed to identify students willing to participate in the study by having them place their names
and telephone numbers on a sign-up list. A total of seven students agreed to participate in the study. This list of students was sent to the researcher. The researcher then contacted each participant and scheduled a date and time for the interview. These students had vision and mobility disabilities.

The Director of Disabled Student Services of the University of Maryland was sent a letter in the fall 1994, with a request to assist the researcher to identify twenty-five students with various disabilities to participate in the study. To proceed in identifying students, the director requested that the researcher send a formal letter to the University of Maryland to request the names of students. A letter was sent during the fall 1994 (Appendix A). Five students signed the letter, giving their consent to participate in the study. The director then sent the researcher a list of students to be interviewed. Similar to George Washington University, the researcher contacted each student to further explain the nature of the study and to schedule a time for the interview. The interviews were completed in November 1994.

Approval to conduct the pilot study was requested of the Human Subjects Review Committee at Iowa State University and the Human Subjects Review Committee at the University of Maryland during the fall of 1994. Upon the approval of the study by the Human Subjects Review Committee at Iowa State University, George Washington University did not require further approval. A copy of the signed approval forms appear in Appendix B.

Data Collection

The primary method of data collection for this research study was telephone interviews with disabled students. Telephone interviews were used due to the extent of the various
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disabilities and the complexity of the students’ schedules. The researcher was advised by both Dr. William Scales, Director of Disabled Student Services at the University of Maryland, and by Ms. Christy Willis, Director of Disabled Student Services at George Washington University, that each student would be more accessible by conducting a telephone interview rather than a face-to-face interview. Both directors also informed the researcher that, in conducting a telephone interview, it would provide an opportunity to accommodate students at a convenient time in their personal schedules. Also, they might feel more comfortable in their own personal space when being interviewed by a stranger. Wiersma (1991) contended that, if in-home interviews are conducted, some potential respondents may be threatened by a visit from a stranger whereas a telephone interview would not be threatening. Each participant in this study was informed that the information gathered was strictly confidential and individual names would not be used.

A questionnaire containing open-ended questions was used to elicit responses from the disabled students being interviewed. Patton (1990) contended that the purpose of open-ended interviewing is not to put things in someone's mind but to access the perspective of the person being interviewed. The students were not provided with the questions before their interview. The method used for data collection is described in more detail below. A copy of the questionnaire can be found in Appendix C.

During the first two weeks of November 1994, the researcher conducted telephone interviews with five disabled students from the University of Maryland and seven disabled students from the George Washington University. Each research participant was informed that the interviews were voluntary. The researcher was advised by the Directors of Disabled
Student Services from the two campuses to keep each interview to approximately 30 minutes in length. Each participant was also informed that they could decline to respond to any question(s) or discontinue the interview at anytime.

During the data collection process insights were gained about the extent of disabilities, the complexity of student schedules, the complexities of collecting these data, and the nature of qualitative data. Since this was a pilot study in a relatively new area of research and this study could provide major insights to a very important educational process, it was decided to continue with the data analysis using information provided by the 12 respondents. The insights gained would not only provide insights and benchmarks for future research but would also have program and policy implications for educators.

After the interviews were completed, the researcher contacted each participant to discuss the accuracy of information provided from their interviews. Legal counsel at the U.S. Equal Employment Opportunity Commission in Washington, D.C., advised the researcher that, because of the nature of the study, the EEOC would not recommend giving a personal assessment of any observations made concerning the two campuses.

Data Analysis

Wiersma (1991) refers to data analysis in qualitative research as "... a process of categorization, description, and synthesis" (p. 85). Wiersma also asserts that data reduction is crucial in providing a description and interpretation of the phenomenon under study. Borland (1992) refers to the data reduction as the process of summarizing or paraphrasing a mass of words by the researcher so that the result is more succinct.

For the purpose of this qualitative study, the researcher followed three steps proposed
by Best and Kahn (1993) in conducting data analysis. Further rationales by Wiersma (1991) and Borland (1992) are included. These steps include the following:

1. **Organizing the Data** - Best and Kahn (1993) assert that for purpose of conducting interviews, data may be organized according to individual respondents or by grouping answers together across respondents.

2. **Description** - At this state in the analysis process, the researcher describes the various pertinent aspects of the study such as: the setting; the individuals being studied; the purpose of any activities examined; as well as the viewpoints of participants (Best & Kahn, 1993). Wiersma (1991) further asserts that the emphasis here is on the researcher describing the phenomenon in its context.

3. **Interpretation** - This stage in the process, according to Best and Kahn (1993), involves the researcher explaining the findings. In other words, the researcher should now be responding to the "why" questions. The researcher should provide an interpretation that other readers can understand. Borland (1992) contends that the researcher must be able to decide what the data means.
CHAPTER 4. RESULTS OF THE STUDY

Introduction

The purpose of this study was to determine to what extent the University of Maryland and the George Washington University campuses have been made more accessible since the ADA became law in 1990. These two campuses currently have the two largest disabled student populations in the Washington, D.C. metropolitan area. Presented in this chapter are the results from the individual interviews.

Demographic data were collected during an in-depth interview with each student to provide background information as a part of the research. The following section discusses the characteristics of each student who participated in the study. This section will provide demographic data of each student from the two campuses and will include information on each student’s major, classification, gender and disability.

Demographics of the Respondents

The University of Maryland

A total of five undergraduate students with physical disabilities agreed to participate in the interviews with the researcher. The researcher interviewed each of the students individually by telephone for a minimum of 30 minutes. Characteristics of the five students who participated are described in Table 1. A distribution of both classification and major being pursued is provided in Table 2.
Table 1. Gender and disability of the University of Maryland respondents

<table>
<thead>
<tr>
<th>Disability</th>
<th>Cerebral Palsy</th>
<th>Visually Impaired</th>
<th>Deaf</th>
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<tr>
<td>Visually Impaired</td>
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<td>2</td>
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</tbody>
</table>

Table 2. Respondents' majors and classifications

<table>
<thead>
<tr>
<th>Classification</th>
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<tr>
<td>Education</td>
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<td></td>
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</tbody>
</table>

*Respondent #1* is a female student and a junior majoring in accounting. She is between the age of 20-24 and has been on the campus for four years. She has cerebral palsy and is confined to using a wheel chair to move around campus. During her four years on campus, she has had the opportunity to experience some of the changes on campus that have affected disabled students.

*Respondent #2* is a female student and a senior majoring in special education. She is over the age of 24 and has been on campus for six years. She has cerebral palsy and is confined to using a wheel chair for mobility. Like Respondent #1, she has been on campus for several years and has had the opportunity to observe and experience the physical changes that have occurred.
Respondent #3 is a male student and a senior majoring in English. He is between the age of 20-24 and has been on campus for four years. He is deaf and requires the assistance of an interpreter when attending classes.

Respondent #4 is a female student and a junior majoring in English. She is between the age of 20-24 and has been on the campus for three years. She is visually impaired, being legally blind in one eye with limited vision in the other eye. She requires the assistance of someone to read things to her.

Respondent #5 is a female student and a junior majoring in education. She is over the age of 24 and has been on the campus for three years. She is legally blind in both eyes and requires special assistance, such as note-takers when attending classes in addition to text books on audio tape.

The George Washington University

A total of seven undergraduate students with physical disabilities participated in the study as interviewees. The seven students that participated as interviewees were of the following gender and disabilities as shown in Table 3. The distribution of interviewees by classification and major is shown in Table 4.

Table 3. Gender and disability of the George Washington University respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Cerebral Palsy</th>
<th>Visually Impaired</th>
<th>Quadriplegic</th>
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<tr>
<td>Male</td>
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<td>3</td>
<td>1</td>
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<tr>
<td>Female</td>
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Table 4. Respondents' majors and classifications

<table>
<thead>
<tr>
<th>Classification</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
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<tr>
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<td>Psychology</td>
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<td>Political Communications</td>
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<td>MIS</td>
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<tr>
<td>Communication</td>
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<tr>
<td>Political Science</td>
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<tr>
<td>Voc. Rehab. Counseling</td>
<td>1</td>
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</table>

Respondent #1 is a female student and a senior majoring in psychology. She is between the age of 20-24 and has been on campus for four years. During this time she has had the opportunity to experience changes that have made the campus more accessible to disabled students. She has cerebral palsy and is confined to using a wheel chair to move about on the campus.

Respondent #2 is a male student and a senior majoring in business. He is over the age of 24, and like Respondent #1, has been on campus for four years. He too, has had the opportunity to observe changes that have occurred to make this large urban campus more accessible for disabled students. He is quadriplegic and is confined to using a wheel chair.

Respondent #3 is a female student and a junior majoring in political science. She is between the age of 20-24 and has been a student on the campus for three years. Although she is visually impaired in both eyes, she is not classified as legally blind because she has limited vision in both eyes. Usually she needs some assistance in identifying things when the lighting
is not bright. Assistance is also needed when extremely small print is used on chalkboards, signs or other reading materials.

*Respondent #4* is a female student and a junior majoring in vocational rehabilitation counseling. She is over the age of 24 and has been on the campus for three years. She is visually impaired in both eyes, and like *Respondent #3*, does retain very limited vision in both eyes. She needs assistance when the lighting is poor, or in instances when there is small print used on signs, chalkboards or other materials.

*Respondent #5* is a male student and a sophomore majoring in management information systems. He is under the age of 20 and is in his second year on campus. He is legally blind in one eye, while retaining visual ability in his other eye.

*Respondent #6* is a male student and a junior majoring in political communication. He is over the age of 24 and has been on campus for over three years. Although he is visually impaired in both eyes, he retains very limited eyesight. He requires assistance when signs and materials are in small print.

*Respondent #7* is a male student and a junior majoring in communication. He is between the age of 20-24 and has been on the campus for four years. He is legally blind in both eyes and requires special assistance.

**Research Questions**

The study elicited answers to the following research questions:

1. What changes have physically disabled students seen on their campus since the ADA became law?
2. What changes have the Directors of Disabled Students seen on their campus since the ADA became law?

3. How are these changes perceived by both disabled students and the Director of Disabled Students on each campus?

4. Are these differences in the changes identified by both disabled students and the Director of Disabled Students on each campus?

5. What additional changes are identified by disabled students on each campus as being needed to make their campus more accessible?

6. What additional changes are identified by the Director of Disabled Students on each campus as being needed to make their campus more accessible?

**Interview Questions**

Respondents at the University of Maryland and George Washington University were asked the following interview questions to assess the nature and extent of changes that have occurred on their campus since the ADA was signed into law in 1990:

1. How many years have you been on campus?

2. What physical changes to classrooms, residence halls, libraries, the student union, administration building, learning labs, computer facilities, sidewalks, and parking/ramps have been made to make your campus more accessible to disabled students?

3. For which disabilities have physical changes on your campus been directed?

4. What changes have been made to address the needs of hearing impaired, speaking impaired, seeing impaired, walking impaired, moving impaired, and other disabilities?

5. What changes to classrooms, residence halls, libraries, student union, the administration building, learning labs, computer facilities, sidewalks, and parking/ramps are needed to make your campus facilities more accessible?

6. How would you rate the sensitivity of the following groups (non-disabled students, faculty, support staff, administrators, student affairs staff, and other groups) to the
needs of disabled students since the ADA was signed into law (much more sensitive, more sensitive, no change, less sensitive, much less sensitive)?

7. How do you rate the disabled student service officer’s understanding of the needs of disabled students on your campus (excellent understanding, good, understanding, limited understanding, or no understanding)?

8. What campus transportation systems (buses or other) are available for disabled students?

9a. Describe the positive aspects of the services for disabled students on your campus, and state the best services/facilities.

9b. Describe the most negative aspects of your campus and the most negative experiences as a student with a disability that you have encountered since you have been a student at the university.

9c. How can your campus environment be improved for you?

Additional questions asked of the disabled student services officers:

10a. Has a self-evaluation study been conducted on your campus?

10b. Is there a university committee in place to study issues and concerns of disabled students on campus?

10c. Are there any long term plans or future plans to make changes to the campus to make it more accessible to disabled students?

10d. Have any surveys been conducted by the disabilities support services office on issues and concerns of disabled students on campus?

The questionnaire was developed to provide insights about the research questions. A matrix was constructed to clarify the relationship between research questions and interview questions (Table 5). The six research questions are listed on the left side of the table. On the right, interview questions that directly relate to the corresponding research question on the left are listed in numerical order. Interview questions that indirectly relate to the same research question are listed in parentheses. Because of the need to gain an in-depth understanding of
Table 5. Relationship between research questions and interview questions

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Interview Questions</th>
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<tr>
<td>(demographic information)</td>
<td>1. How many years have you been on campus?</td>
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<td>1. What changes have physically disabled students seen on their campus since the</td>
<td>2. What physical changes to classrooms, residence halls, libraries, the student union,</td>
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<td>ADA became law?</td>
<td>administration building, learning labs, computer facilities, sidewalks, and</td>
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<td>parking/parking ramps have been made to make your campus more accessible to</td>
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<td>disabled students?</td>
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<td></td>
<td>(1) How many years have you been on campus?</td>
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<td>(2) For which disabilities have physical changes on your campus been directed?</td>
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<td>(4) What changes have been made to address the needs of hearing impaired, speaking</td>
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<td>impaired, seeing impaired, walking impaired, moving impaired, and other disabilities?</td>
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<td>(8) What campus transportation systems (buses or other) are available for disabled</td>
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<td>2. What changes have the Directors of Disabled Students seen on their campus since</td>
<td>2. What physical changes to classrooms, residence halls, libraries, the student union,</td>
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<td>the ADA became law?</td>
<td>administration building, learning labs, computer facilities, sidewalks, and</td>
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<td>disabled students?</td>
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<td>(6) How would you rate the sensitivity of the following groups (non-disabled students,</td>
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<td>faculty, support staff, administrators, student affairs staff, other groups) to the</td>
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<td>needs of disabled students since the ADA was signed into law? (much more sensitive,</td>
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<td>more sensitive, no change, less sensitive, much less sensitive)</td>
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<td></td>
<td>(8) What campus transportation systems (buses or other) are available for disabled</td>
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<td>3. How are these changes perceived by both disabled students and the Director of</td>
<td>students?</td>
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<td>Disabled Students on each campus?</td>
<td>9a. Describe the positive aspects of the service for disabled students on your campus,</td>
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<td>and state the best services/facilities.</td>
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<td>9b. Describe the most negative aspects of your campus and the most negative</td>
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<td>experiences as a student with a disability that you have encountered since you have</td>
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<td>been a student at the university.</td>
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<td>(5) What changes to classrooms, residence halls, libraries, student union, the</td>
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<td>administration building, learning labs, computer facilities, sidewalks, and</td>
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<td>parking/parking ramps are needed to make your campus facilities more accessible?</td>
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<td>(7) How do you rate the disabled student services officer's understanding of the needs</td>
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<td>of disabled students on your campus (excellent understanding, good, understanding,</td>
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<td>limited understanding, or no understanding)?</td>
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Table 5. (Continued)

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Interview Questions</th>
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<tr>
<td>4. Are these differences in the changes identified by both disabled students and</td>
<td>5. What changes to classrooms, residence halls, libraries, student union, the</td>
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<td>the Director of Disabled Students on each campus?</td>
<td>administration building, learning labs, computer facilities, sidewalks, and</td>
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<td></td>
<td>parking/parking ramps are needed to make your campus facilities more accessible?</td>
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<td>(2) What physical changes to classrooms, residence halls, the student union, the</td>
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<td>administration building, learning labs, computer facilities, sidewalks, and</td>
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<td>parking/parking ramps have been made to make your campus more accessible to</td>
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<td>disabled students?</td>
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<td>(3) For which disabilities have physical changes on your campus been directed?</td>
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<td>impaired, seeing impaired, walking impaired, moving impaired, and other disabilities?</td>
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<tr>
<td>5. What additional changes are identified by disabled students on each campus as</td>
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<td>being needed to make their campus more accessible?</td>
<td>administration building, learning labs, computer facilities, sidewalks, and</td>
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<td></td>
<td>parking/parking ramps are needed to make your campus facilities more accessible?</td>
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<tr>
<td>(9c) How can your campus environment be improved for you?</td>
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<td>6. What additional changes are identified by the Director of Disabled Students on</td>
<td>3. For which disabilities have physical changes on your campus been directed?</td>
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<td>each campus as being needed to make their campus more accessible?</td>
<td>(10a) Has a self-evaluation study been conducted on your campus?</td>
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<tr>
<td>(10b) Is there a university committee in place to study issues and concerns of</td>
<td>(10c) Are there any long term plans or future plans to make changes to the campus to</td>
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<td>disabled students on campus?</td>
<td>make it more accessible to disabled students?</td>
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<td>(10d) Have any surveys been conducted by the disabilities support services office</td>
<td>(10d) Have any surveys been conducted by the disabilities support services office on</td>
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<tr>
<td>on issues and concerns of disabled students on campus?</td>
<td>issues and concerns of disabled students on campus?</td>
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Note: Interview questions that are listed numerically relate directly to the indicated research question on the left. In addition, interview questions listed in parentheses may also be interpreted as having an indirect relationship to the indicated research question.

The needs of disabled students on college campuses and extent to which the campuses have complied with the ADA to meet those needs, a research question may have more than one interview question relating to it. As interview question 1 relates to demographic information previously discussed, each of the following responses begin with interview question 2.

Interview questions that pertained only to students (7, 9b, & 9c) were not asked of the disabled student service officers. Similarly, some questions pertained only to the disabled student service officers (10a-d) and were not asked of the students.
Responses to interview questions by students at The University of Maryland

A total of five students were interviewed and asked a series of questions to determine what specific changes have been made to make their campus more accessible since ADA became law in 1990. The students were very cooperative and willing to provide assistance with this research.

Interview Question 2

2. What physical changes to classrooms, residence halls, libraries, the student union, administration building, learning labs, computer facilities, sidewalks, and parking/ramps have been made to make your campus more accessible to disabled students?

Of the five respondents interviewed, four respondents indicated they believed that physical changes had occurred at the University of Maryland since the ADA became law in 1990. The following analysis provides an assessment of some of the changes that students perceived have taken place in the following areas: (1) classrooms; (2) residence halls; (3) campus libraries; (4) the student union; (5) the administration building; (6) learning labs; (7) computer facilities; (8) sidewalks; and (9) parking facilities.

Four of the five respondents interviewed indicated that some physical changes have been made to make the campus more accessible to disabled students. Only one respondent did not notice any changes since coming to the University of Maryland campus three years ago; therefore, this respondent did not respond to questions 2, 3, and 4.

Classrooms - When asked if any changes had taken place in the classrooms, only one of the four respondents indicated that changes have been made in the classrooms to make
them more accessible to disabled students. Further, this respondent indicated that automated
doors had been installed in most of the buildings to make them more wheel chair accessible.
In addition, on one occasion a class was moved to another building to accommodate students
in wheel chairs.

Residence Halls - All four respondents indicated that significant changes had taken
place in residence halls to make them more accessible to disabled students. Since the ADA
became law, the respondents indicated that automated doors have been installed in the
residence halls to make them more accessible, particularly for those students in wheel chairs.
Disabled students in wheel chairs are able to live in the same residence halls as non-disabled
students due to the installation of automated doors. Because of these changes disabled
students do not have to live in separate residence halls to accommodate their impairment.
One respondent reported other changes in the residence halls included rails installed in the
showers to accommodate students who need additional assistance in bathing facilities.
Another respondent stated that shelves in the closets were lowered to arm level to
accommodate those students in wheel chairs or those students that may have a difficult time
reaching upward to use the shelves. Another respondent stated that single and larger rooms in
the residence halls were provided for disabled students in wheel chairs.

Campus Libraries - When asked if their libraries on campus were more accessible for
disabled students, three out of four respondents interviewed responded that they thought no
specific changes had been made to make the facilities more accessible to disabled students.
They indicated that more assistance to disabled students was needed to use the libraries on
campus. Three respondents indicated that they had a difficult time using the library facilities because of their particular disability. The respondents stated that there were not enough trained personnel available to assist them when using the library. One respondent did say that the campus libraries were making progress in providing assistance to disabled students using the library. However, similar to the three other respondents, this respondent also stated during the interview that more assistance is needed to accommodate the needs of disabled students when using the library facilities.

*Student Union* - All four respondents stated that no additional changes have been made to make the student union more accessible to disabled students. The majority of the respondents indicated that automated doors were already in place making the building wheelchair accessible. The respondents indicated that the biggest problem they faced in using the student union is that the elevators do not go up to the top floor of the union. The top floor of the union contains a grand ballroom, information desk, and the Student Government Association office, as well as other student organization offices on campus. Consequently, the inaccessibility of certain areas of the student union hinders students needing wheelchairs from being involved in many student groups.

*Administration Facilities* - When asked if any changes have occurred that would make the campus administration office more accessible, there was a consensus that no changes have been made. Most of the respondents complained that the building was not wheelchair accessible. The respondents indicated that automated doors or ramps had not been installed in the campus administration building.
Learning Labs - All four respondents stated they knew of no changes that have taken place to make the learning lab more accessible. The respondents stated that the learning labs were already accessible when they arrived on campus.

Computer Facilities - In terms of the computer facilities, three out of four respondents indicated that no changes have taken place to make the facilities more accessible. Three students said that computer facilities were already accessible to them and that a university committee is currently studying ways to make the facilities even more accessible. However, one student said that changes had been made to make the computer facilities more accessible. This respondent reported that the desk height for computers had been raised so that students in wheel chairs could use them. The respondent also stated that the printers were placed on stands at a level that students in wheel chairs could see if their request had been printed. With some assistance, their materials could be retrieved from the printer.

Sidewalks - When asked if changes had been made to the sidewalks to make them more accessible, all four respondents stated that the university had done a very good job adding curb cuts for individuals in wheel chairs. The respondents indicated that they have noticed more curb cuts being made each year they have been on campus.

Parking Facilities - Three out of four respondents said they saw no changes made regarding parking facilities. One respondent noted that some additional spaces were designated for disabled individuals on campus. However, most of the respondents typically complained that more parking spaces on campus need to be designated for disabled students. Some respondents complained that, at times, their spaces were used by non-disabled students.
The respondents indicated that the areas need to be monitored more frequently to avoid this problem.

**Summary**  This section provides information relating to research question 1 which asks: What changes have physically disabled students seen on their campus since the ADA became law? Overall, most respondents indicated that changes had been made to improve campus facilities since the ADA became law. Key findings show that most changes were made in the residence halls to make them more accessible to students in wheel chairs, such as installing shelves at arm-reach level and rails in bathing facilities, and enlarging single rooms. While most students perceived changes had been made to most facilities, only one respondent indicated that additional changes had been made to the learning labs and computer facilities to make computer desks and printers more accessible for students in wheel chairs. The respondents noted that automated doors had been installed in most buildings except the campus administration building which was the only building that remained inaccessible to students in wheel chairs.

**Interview Questions 3 and 4**

3. For which disabilities have physical changes on your campus been directed?
4. What changes have been made to address the needs of hearing impaired, speaking impaired, seeing impaired, walking impaired, moving impaired, and other disabilities?

Three out of four respondents indicated that changes had been directed at selected disabilities. Only one respondent did not know if changes had been directed at any particular disability. In this respondent's opinion, changes were occurring across the campus for
students of all disabilities. The majority of students interviewed stated that more physical changes had taken place for students in wheel chairs than any other group. The respondents stated that specific changes included more automated doors installed in buildings. They also emphasized that more ramps were added to buildings so that disabled students in wheel chairs could enter and exit buildings more easily. Other changes involved classes being moved from one building to another building to accommodate students in wheel chairs.

Each of the respondents were asked to state whether changes had been made on their campus to address the needs of students with specific disabilities. Additionally, they were asked to specify the specific changes that have taken place relating to particular impairments. Three out of four respondents indicated during their interview that no changes had been made on their campus to address the needs of hearing impaired students. One respondent thought changes were taking place on campus to address the needs of students with hearing impairments. This respondent indicated that interpreters were provided to hearing impaired students whenever they requested them for classes or other events on campus. While this respondent indicated that interpreters were made available upon request, the respondent did say that more interpreters should be made available to assist students in the libraries and in the computer facilities. The respondent indicated that often times hearing impaired students have a more difficult time understanding other students and faculty members unless an interpreter is available or unless they are good at reading lips.

All four respondents indicated that they did not know of changes that were made to address the needs of students with speech impairments. Many of the respondents indicated
that, while there may not have been any visible changes made to address students with this particular impairment, they all indicated that the Disability Support Service Office on campus was there to assist disabled students.

Two of the respondents stated that no changes have been made to address the needs of visually impaired students. The other two respondents indicated that changes had taken place on their campus for visually impaired students to make it more accessible. One respondent said that professors who were aware of students with visual impairments were more willing to allow additional time in completing assignments and exams.

The respondents also stated that changes have included making text books available on tapes, as well as in the libraries around campus. In addition, to further assist visually impaired students, the respondents stated that readers have been made available by the Disability Support Service Office when materials are not available to the students on tape. According to the respondents, the readers have been extremely helpful in assisting these students with their reading assignments.

According to the respondents, students experiencing walking or moving impairments have benefitted the most from the physical changes that have occurred on the University of Maryland campus. Each of the respondents, with the exception of one, indicated that many changes had taken place on campus to make it more accessible for those students in wheel chairs, as well as those students who rely on the use of crutches or walkers for mobility. The majority of respondents stated that the university has made a shuttle bus service available for disabled students. Special seating is designated at the front of the bus for students in wheel
chairs or with other disabilities. Respondents stated that ramps and automated doors have been added to many buildings so that students in wheel chairs are not excluded from entering and exiting buildings.

**Summary** This section provides information relating to research questions 1 through 4: (1) What changes have physically disabled students seen on their campus since the ADA became law? (2) What changes have the Directors of Disabled Students seen on their campus since the ADA became law? (3) How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? and (4) Are these differences in the changes identified by both disabled students and the Director of Disabled Students on each campus? Overall, key findings indicated that, while most disabled students thought changes on their campus occurred for all disabled students, they indicated that most physical changes were for students in wheel chairs. Among those changes frequently mentioned was the installation of automatic doors and ramps in most buildings to accommodate students in wheel chairs. Other changes reported by respondents were that classes were moved to other buildings and provision was made for seating on the shuttle bus for students in wheel chairs. The respondents indicated that, in addition to changes made to accommodate students in wheel chairs, progress was also made campus-wide to accommodate other disabled students as well.
Interview Question 5

5. What changes to classrooms, residence halls, libraries, student union, the administration building, learning labs, computer facilities, sidewalks, and parking/ramps are needed to make your campus facilities more accessible?

Respondents were queried during their interviews if further changes were needed to make their campus more accessible for disabled students. They were also asked to specify the actual changes they felt were needed. While most of the respondents indicated to the researcher that the university had made progress in making their campus more accessible, it became clear during this portion of the interview that more changes were needed on the University of Maryland campus to make it more accessible. The respondents were very candid in discussing changes needed to make their campus more accessible for them.

**Classrooms** - When asked if changes were needed to make the classrooms more accessible, only one respondent indicated no changes were needed. The other respondents identified several changes that were needed to improve accessibility of classrooms for disabled students. One respondent who was hearing impaired said it would be extremely helpful to have more note takers available in classes for hearing impaired students. This respondent also reported that there was a shortage of note takers on campus. Despite having requested such assistance on three to four occasions, the respondent had not received a note taker during the semester in which the interview took place. The respondent also stated that there was a shortage of interpreters on campus to assist hearing impaired students. Since most note takers and interpreters hired are graduate assistants, leniency is granted to them when they are unable to meet with disabled students. This respondent talked about failing classes because a note
taker or interpreter was, often times, unavailable when assistance was needed.

Another respondent stated additional time to complete class assignments should be given to students with visual impairments. According to the respondent, sometimes visually impaired students need more time to complete their assignments because of the shortage of note takers available. The respondent said often times faculty members seem reluctant about allowing additional time. Consequently, the lack of extra time has contributed to assignments being left incomplete. Another respondent stated the an automated door to a classroom building was not working when the respondent tried to enter the building, and it should have been tested periodically to avoid such a problem. The respondent also stated that, often times, elevators are crowded and that students in wheel chairs have to wait an excessive length of time before they can use elevator. Another respondent said visually impaired students have had a difficult time in reading notes on the chalkboard. This respondent also indicated it would be helpful to visually impaired students if professors would provide notes to them whenever note takers are not available.

*Residence Halls* - All the respondents stated more changes were not necessary to make the residence halls accessible. They said the university has done a good job in renovating rooms to accommodate their particular needs. Ramps and automated doors have been installed in residence halls to make them accessible to disabled students.

*Campus Libraries* - Most of the respondents expressed their dissatisfaction with the campus libraries. One respondent did indicate that no changes were needed to make the facilities more accessible. However, three out of four respondents complained of the shortage
of staff to assist disabled students when using the library. Disabled students in wheel chairs found it extremely difficult in trying to get assistance in retrieving books or other reading materials. One respondent stated that on a large campus such as the University of Maryland, if non-disabled students have a difficult time getting assistance in the library, it is even worse for disabled students. Another respondent stated that students with visual impairments have problems trying to read signs in the library that are either not at eye level or whose print is relatively small.

**Student Union** - Most of the respondents indicated that the student union was accessible to them. However, two of the respondents noted that an elevator needs to be installed to reach all floors, especially the top floor in the union. The current situation prevents students in wheel chairs from accessing the top floor in the union. The respondents stated that student organization groups have offices on the top floor of the union. Also, the top floor has grand ballrooms for special events and some disabled students indicated that they have not been able to attend events held on the top floor of the union. Another respondent stated that there should be more signs in the union identifying bathrooms that are accessible to disabled students.

**Campus Administrative Offices** - Three out of four respondents stated that changes should be made in the campus administrative offices to make them more accessible to disabled students. Many respondents complained that entrances in the building were not accessible to them. Most respondents reported that the building lacks automated doors and ramps for disabled students entering the campus administration building.
Learning Labs/Computer Facilities - All the respondents stated that the learning labs and computer facilities on campus were accessible to them and needed no significant changes. Only one respondent felt that no changes were needed to make the facilities more accessible. In this respondent's opinion, it would be more helpful to disabled students if more staff were hired to assist them in learning labs and computer facilities.

Sidewalks/Parking Facilities - Most of the respondents spoke positively about the commitment that the university has demonstrated in its efforts to add curb cuts on sidewalks and to make parking/parking ramps available so that students in wheel chairs can access campus. All the respondents stated their only complaint has been that often times there are not enough parking spaces allocated for disabled students. The respondents noted that some non-disabled students park in spaces designated for disabled students. The respondents also indicated that it would be helpful if the parking area were monitored more closely to keep non-disabled students from using designated areas for disabled students. Otherwise, the students indicated that no changes were needed for sidewalks or for parking.

Summary This section provides information relating to research questions 3 through 5: (3) How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? (4) Are these differences in the changes identified by both disabled students and the Director of Disabled Students on each campus? and (5) What additional changes are identified by disabled students on each campus as being needed to make their campus more accessible? Overall, according to key findings, most respondents indicated that the university has made progress toward making campus facilities accessible to
them. According to the respondents, further changes are needed to make their campus more accessible to disabled students, now and in the future. Most respondents stated that there was a need to hire additional staff to assist disabled students campus-wide, specifically in the campus libraries. The lack of staff to assist disabled students resulted in a great deal of frustration when using the library facilities. Hearing impaired students would also benefit from hiring additional note takers. While the student union was acknowledged as being accessible, some respondents indicated an elevator should be installed to make all floors accessible to disabled students in wheel chairs. Finally, the campus administration building received much criticism by most respondents for being inaccessible. In the following section, disabled students were asked to rate the sensitivity of non disabled groups to their needs since the ADA became law.

**Interview Question 6**

6. How would you rate the sensitivity of the following groups (non-disabled students, faculty, support staff, administrators, student affairs staff, and other groups) to the needs of disabled students since the ADA was signed into law (much more sensitive, more sensitive, no change, less sensitive, much less sensitive)?

The researcher used a five-point Likert scale for the purpose of allowing participants to rate how they perceive the sensitivity of non-disabled groups to disabled students on their campus since the ADA became law. The Likert scale was not used for the purpose of conducting a statistical analysis because of the small number of participants.

The selection of non-disabled groups used for this part of the study was discussed and agreed upon by the graduate committee. The groups included: (a) non-disabled students; (b) faculty; (c) support staff; (d) administrators; (e) students affairs staff; and (f) other
groups/Greek organizations. The respondents were asked to give their perceptions of the attitudes of the non-disabled groups on their campus toward disabled students and to rate their sensitivity to the needs of disabled students since the ADA became law. A Likert-type scale of 1 to 5 was used, with 1 = much more sensitive; 2 = more sensitive; 3 = no change; 4 = less sensitive; or 5 = much less sensitive. The assessment of groups provided the perception of how the disabled students viewed the non-disabled groups on their campus. Table 6 provides a breakdown of how the respondents rated each group.

When asked to rate non-disabled student on campus, three of the respondents indicated that they viewed non-disabled students as more sensitive to their needs since the signing of ADA into law, whereas two respondents indicated that they experienced no change since the ADA was signed into law. Of the five respondents who rated the faculty, one respondent indicated the faculty seemed much more sensitive to the needs of disabled students while the other four respondents rated the faculty simply as being more sensitive to the needs of disabled students since the ADA became law. Support staff were also rated as more sensitive by four respondents, however, one respondent indicated no perceived change among support staff regarding the needs of disabled students. The administrators on campus were rated as much more sensitive by one respondent and more sensitive by three respondents, whereas one respondent indicated no change. Among the student affairs staff, four respondents rated them more sensitive to their needs, while one respondent indicated that there was no change among the staff. All of the respondents rated no change among the other student groups to their particular needs.
Table 6. Perceived sensitivity rating by respondents to the needs of disabled students since the passage of the Americans with Disabilities Act of 1990

<table>
<thead>
<tr>
<th>Category</th>
<th>Much more sensitive</th>
<th>More sensitive</th>
<th>No change</th>
<th>Less sensitive</th>
<th>Much less sensitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-disabled students</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support staff</td>
<td></td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrators</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student affairs staff</td>
<td></td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other groups/Greek</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>organizations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key: 1 = much more sensitive; 2 = more sensitive; 3 = no change; 4 = less sensitive; and 5 = much less sensitive

Summary This section provides information relating to research questions 2 and 3: (2) What changes have the Directors of Disabled Students seen on their campus since the ADA became law? and (3) How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? Overall, key findings indicated that most respondents rated non-disabled groups on their campus as more sensitive to their needs since the ADA became law. In spite of the positive rating provided by the respondents, two respondents indicated there was no change among non-disabled students, and one respondent indicated there was no change among support staff, administrators, and student affairs staff. In rating the other groups/Greek organizations, five respondents indicated no change. In the next section, the disabled student respondents were asked to rate their disabled student service officer's understanding of their needs.
Interview Question 7

7. How do you rate the disabled student service officer’s understanding of the needs of disabled students on your campus (excellent understanding, good, understanding, limited understanding, or no understanding)?

This interview question provides information related to research question 3: How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? When the respondents were asked to provide their assessment of how well the disabled student services officer understands their needs, two respondents gave a rating of “excellent”, two respondents rated the officer as “limited in understanding”, and one respondent rated the officer’s understanding as “good”. There were no set criteria given for each rating provided by the respondents.

Interview Question 8

8. What campus transportation systems (buses or other) are available for disabled students?

This interview question provides information related to research question 1: What changes have physically disabled students seen on their campus since the ADA became law? All respondents answered in the affirmative when asked if the University of Maryland campus buses were accessible to disabled students. The respondents further stated that the drivers were very courteous and willing to assist disabled students in need of assistance.

Interview Question 9a

9a. Describe the positive aspects of the services for disabled students on your campus, and state the best services/facilities.

Each respondent was asked to describe the positive aspects of services rendered to
disabled students on their campus. A variety of responses were provided to describe some of the positive aspects of services for disabled students on campus. Most respondents said support and assistance provided by the disability support services officers had been exceptionally helpful. Activities had been provided by the office to lend support to disabled students. For example, new disabled students were invited to attend a special event to meet with current disabled students and to learn more about their campus. Also, the disabled student services office has an event in the fall where disabled students meet with campus administrators, faculty members, staff and students. Furthermore, respondents acknowledged the office's commitment to improving the campus environment by offering programs in the residence halls at which the ADA and the needs of disabled students on campus were discussed. Other welcomed features were the symposiums held during the spring, focusing on the ADA and the various ways to improve the campus environment for disabled students.

When asked to describe some of the positive aspects of services for disabled students on campus, one respondent commented: "... for me it has been extremely helpful to be able to get note takers while attending classes. However, unless you request the services of a note taker in advance, one may not be available when needed. For the most part, the combination of note takers and readers has helped to improve my grades."

Another respondent said: "...for myself as a visually impaired student, the voluntary reader service on campus has been extremely helpful to me. This service has provided me and other visually impaired students with a reader who transcribes reading materials. In addition, the availability of books on tape has kept me from falling behind in reading materials and class.
A third respondent commented: "... it has been extremely helpful to attend classes or programs and to see an interpreter available for deaf students. Because of this service, I am able to participate in classes and receive the same instruction as other students. Also, providing an interpreter in classes and programs around campus makes it enjoyable for me and other hearing impaired students."

**Summary** The section provides information related to research question 3: How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? Overall, key findings showed that most of the respondents indicated the university has made progress to heighten the awareness of disabled students on campus by offering programs that discuss the ADA and the needs of disabled students. Additionally, the respondents seemed pleased with the services that are available to assist disabled students when attending classes or other programs held on campus.

**Interview Question 9b**

9b. Describe the most negative aspects of your campus and the most negative experiences as a student with a disability that you have encountered since you have been a student at the university.

Most of the respondents indicated to the researcher that their overall experience at the University of Maryland has been positive. However, some negative experiences were reported. One respondent stated that, while the university has done a relatively good job in making the campus accessible for disabled students in wheel chairs, it needs to do better in
assisting visually impaired students. The respondent noted that the university is not well equipped for visually impaired students, because the university lacks enough readers to assist them with assignments. The lack of readers available when crucial assignments need to be completed has contributed to assignments being turned in late or sometimes incomplete. Another respondent indicated during the interview, that as a visually impaired student, the library facilities are difficult to use. This respondent complained that signs are not always placed at eye level and the print appears extremely small making it difficult to see. Because of limited vision, it is imperative that print be large enough so that the visually impaired can read it. Shortage of staff has also made it difficult for visually impaired students to use the library facilities. This same respondent indicated that, with the current budget cuts, the library will continue to operate with reduced services and staff.

Another respondent's most negative experience involved a professor who did not seem to understand the need for the student to be absent from class for a period of time because of her disability. In addition, she said the professor did not want to allow her extra time to complete her assignments. Eventually, after further discussion, the professor did grant the respondent some additional time to complete her assignments.

A hearing impaired student noted difficulty in getting note takers and interpreters on a few occasions. According to the respondent, this has caused him to miss some notes from the lectures. Most of the respondents indicated that their negative experiences centered around the shortage of staff available to assist disabled students. Respondents also stated that overall, the university was making progress in their attempts to meet the needs of disabled students.
Summary

This section provides information related to research question 3: How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? Overall, key findings showed that most of the respondents indicated that the had few negative experiences at the university. However they voiced a critical concern over the shortage of staff available to assist them in class and with their assignments. The respondents cited that, sometimes, not enough readers were available to assist the visually impaired when needed. They also said that not enough note takers or interpreters were available to assist the hearing impaired as needed.

Interview Question 9c

9c. How can your campus environment be improved for you?

Most of the respondents stated that changes have been made to improve the quality of life for disabled students since they had arrived on campus. Classrooms, residence halls and other buildings had been made more accessible. However, most of the respondents stated that the University of Maryland should continue to improve the campus environment by having more dialogue on campus among administrators, faculty members, students and other members of the university community concerning the needs of disabled students.

In response to the question, How can your campus environment be improved for you? one respondent commented: “... hopefully, with campus discussions about the ADA, it will continue to heighten the awareness of disabled students and encourage administrators, faculty members, students and other to be more sensitive to disabled students and their needs.”

Another respondent said: “The university needs to continue making more buildings
wheel chair accessible. It would be helpful if an elevator was installed in the student union allowing students in wheel chairs to go to the top floor and participate with student organization groups.”

A third respondent stated: “Hiring additional staff in the library to assist disabled students would be a tremendous help.”

A fourth respondent shared: “The university should provide textbooks in Braille for blind students.”

Finally, a fifth respondent commented: “Because of this shortage of note takes and interpreters, I have failed classes because they were not available when requested.”

**Summary** This section also provides information related to research question 3: How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? According to the key findings, most of the respondents indicated that the university could continue to improve the campus environment for them by having more dialogue within the campus community among campus administrators, faculty members, students and other concerning the ADA and the needs of disabled students. Most of the respondents strongly emphasized the need for additional staff to be hired to address their particular needs. Additionally, it was recommended that the university should continue to make more buildings wheel chair accessible.
Responses of the Director of Disability Support Services

Dr. William Scales, the Director of the Office of Student Services, was interviewed by the researcher on February 24, 1995. He has been with the University of Maryland for 15 years in various positions. Following is a summary of his responses to the same interview questions given to students. The questions presented to Dr. Scales were in the same order as to the students.

**Interview Question 2**

2. What physical changes to classrooms, residence halls, libraries, the student union, administration building, learning labs, computer facilities, sidewalks, and parking/ramps have been made to make your campus more accessible to disabled students?

When the Director of Disabled Students was asked if any physical changes had been made on campus, Dr. Scales responded, “Yes!” He said that in most buildings where classes are held, the university has installed ramps, automated doors and elevators to make the building more accessible to disabled students. Residence hall renovations have been made to make units accessible for disabled students. This provision allows them to live with other students and not be isolated in a separate residence hall designed exclusively for disabled students. Dr. Scales commented that additional staff needs to be hired at the library to assist all students. He indicated that the library has had Braille placed on the elevators for visually impaired students. The library also has textbooks on tape as well as computers with voice output.
When asked about the Student Union, Dr. Scales commented, "The university plans to renovate the building next year." Dr. Scales further stated, "The building is already accessible, with automated doors and ramps in place. The bookstore in the union is accessible to disabled students and the student organizations floor is accessible with an elevator moving up and down to assist disabled students."

However, the campus administration building is not accessible. Funds have been allocated for the 1995-96 school year to make this building accessible beyond the first floor to disabled students. Dr. Scales stated during the interview that the learning labs for disabled students were already accessible prior to the ADA. According to him the university has done a good job in making the computer facilities accessible to disabled students. These facilities had been accessible prior to the ADA.

Since the ADA, Dr. Scales noted further changes have included the university making more curb cuts into sidewalks. Also, the university has built parking facilities on campus to accommodate the needs of both non-disabled students as well as disabled students, with specific areas on campus designated for disabled students to park.

**Interview Questions 3 and 4**

3. For which disabilities have physical changes on your campus been directed?
4. What changes have been made to address the needs of hearing impaired, speaking impaired, seeing impaired, walking impaired, moving impaired, and other disabilities?

Dr. Scales responded that he did not think physical changes had been directed at students with certain disabilities. However, he did indicate changes on campus had been directed at students with different disabilities.
Dr. Scales noted that interpreters are provided to assist hearing impaired students when requested. If a student has a speech impairment, usually the problem is discussed with the student's professors and whatever assistance is needed is provided. For seeing or visually impaired students, textbooks on tape and note takers have been provided. For students with mobility or moving impairments, the university offers door-to-door campus transportation for mobility between classes.

**Interview Question 5**

5. What changes to classrooms, residence halls, libraries, student union, the administration building, learning labs, computer facilities, sidewalks, and parking/ramps are needed to make your campus facilities more accessible?

During this segment of the interview, Dr. Scales provided his assessment on whether changes needed to be made to the campus facilities to make them more accessible. He stated the classrooms were in good shape and that residence halls were accessible. The libraries were also accessible, although more library staff was needed to handle the number of students—both disabled and non-disabled—who use these facilities.

When asked if changes were needed for both the student union and the campus administration building, Dr. Scales commented: “The student union and the campus administration building will be renovated the following year to make them more accessible to disabled students.”

According to Dr. Scales, additional changes were not needed in the learning labs or computer labs, since they were already accessible to disabled students. Outside the buildings, curb cuts had been added to the sidewalks making them accessible for disabled students.
Interview Question 6

6. How would you rate the sensitivity of the following groups (non-disabled students, faculty, support staff, administrators, student affairs staff, and other groups) to the needs of disabled students since the ADA was signed into law (much more sensitive, more sensitive, no change, less sensitive, much less sensitive)?

Dr. Scales' assessment of groups on campus sensitivity to the needs of disabled students since the passage of the ADA Act of 1990, is summarized in Table 7.

Interview Question 8

8. What campus transportation systems (buses or other) are available for disabled students?

Dr. Scales commented earlier in the interview that the university has a campus vehicle that provides door-to-door transportation for disabled students. In addition, all buses have

Table 7. Sensitivity rating by Dr. Scales to the needs of disabled students since the Americans with Disabilities Act of 1990

<table>
<thead>
<tr>
<th>Category</th>
<th>Sensitivity rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Much more sensitive</td>
</tr>
<tr>
<td>Non-disabled students</td>
<td>✓</td>
</tr>
<tr>
<td>Faculty</td>
<td>✓</td>
</tr>
<tr>
<td>Support staff</td>
<td>✓</td>
</tr>
<tr>
<td>Administrators</td>
<td>✓</td>
</tr>
<tr>
<td>Student affairs staff</td>
<td>✓</td>
</tr>
<tr>
<td>Other groups/ Greek organizations</td>
<td>✓</td>
</tr>
</tbody>
</table>
lifts to enable students using wheelchairs to enter and exit the bus. Seating is provided at the front of the bus for students who need assistance.

**Interview Question 10**

10a. Has a self-evaluation study been conducted on your campus?
10b. Is there a university committee in place to study issues and concerns of disabled students on campus?
10c. Are there any long term plans or future plans to make changes to the campus to make it more accessible to disabled students?
10d. Have any surveys been conducted by the disabilities support services office on issues and concerns of disabled students on campus?

Dr. Scales was asked some additional questions that were not included in the questionnaire. Wiersma (1991) asserts that "... in conducting an interview it provides the researcher the opportunity to ask additional questions or do an in-depth probing when necessary" (p, 190).

The first question asked was: *Has a self-evaluation study been completed on your campus?* A self evaluation study was completed in 1993. An ADA Task Force was appointed by President Kirwan to conduct the self-evaluation and included representatives from all segments of the campus community including individuals with disabilities. The report found that, overall, the campus was in compliance with the ADA. However, the report indicated that there are approximately a dozen directives needed for improvement. Details on the directives were not released by the university, and, unfortunately, Dr. Scales did not provide any details on the directives, only to say that some of the areas had been previously discussed.

Second, Dr. Scales was asked *if there was a university committee in place to study*
issues and concerns of disabled individuals on campus. Dr. Scales reported that the university has had the President's Committee on Disabilities in place for ten years. This committee gives monthly reports directly to the President on issues and concerns that affect both students and employees. In addition, this committee holds ADA forums four times each year to discuss the law as well as issues and concerns affecting disabled individuals. Unfortunately, the university did not feel comfortable in providing copies of the monthly reports to this researcher.

When asked if there are any long-term plans or future plans in place to make changes to the campus, Dr. Scales stated a plan is forthcoming by the end of 1996, to implement changes around campus whereby all buildings will be made more accessible. Dr. Scales noted the University of Maryland has contracted with an outside agency to evaluate each building by the end of 1995, to determine if the facilities are in compliance with the ADA and are accessible to disabled students.

Dr. Scales was asked if student surveys were conducted by the Disabilities Support Services. He replied that disabled students are surveyed annually, at the beginning of the year and at the end, to note their concerns and issues. A copy of the survey form used is shown in Appendix D. Dr. Scales also noted that $250,000-$300,000 was allocated for major capital improvements around campus. Adaptive technology is being established in the form of separate computer facilities for disabled students, which will be housed in the undergraduate library. These facilities will be under construction during the summer of 1995.
Summary This section provided information related to research questions 2, 3, 4, and 6: (2) What changes have the Directors of Disabled Students seen on their campus since the ADA became law? (3) How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? (4) Are these differences in the changes identified by both disabled students and the Director of Disabled Students on each campus? and (6) What additional changes are identified by the Director of Disabled Students on each campus as being needed to make their campus more accessible? Overall, key findings indicated that most disabled students attending the University of Maryland reported changes had been made to their campus to improve the quality of life and to make it more accessible since the ADA became law in 1990. Only one disabled student perceived changes had not been made to improve campus accessibility.

In many instances during the researcher's interviews, similar responses were made by the disabled students and by Dr. Scales, the Director of Disabled Student Services. When asked if changes had taken place in the classrooms, both disabled students and the director reported that automated doors and ramps had been installed in most buildings to make them wheelchair accessible. However, only the students reported that classes had been moved to an accessible building to accommodate disabled students in wheelchairs.

When addressing the question that asked whether changes had occurred in the residence halls, both groups agreed that renovations had been made to accommodate disabled students. The students were more specific in their responses, while the director merely stated
that renovations had been made to make the units accessible to disabled students. The students also reported that some of the changes included automated doors installed to accommodate those students in wheelchairs. Other changes noted by the disabled students included single and larger rooms being made available for disabled students in wheelchairs. The students also reported that the room renovations included rails installed in the showers and the lowering of shelves in closets to arm reach level to accommodate students in wheelchairs.

When asked if the campus libraries were more accessible, Dr. Scales stated that the library had installed Braille in the elevators to accommodate visually impaired students and provided textbooks on tape. Dr. Scales also commented that the campus libraries had computers with voice output. While most of the students who were interviewed indicated that they thought no specific changes had been made to improve accessibility for disabled students, they agreed with Dr. Scales that additional staff needs to be hired to assist disabled students using the libraries.

When asked if the student union was more accessible to disabled students, neither Dr. Scales nor the students indicated any additional changes had been made. The students indicated that the automated doors and ramps were already in place when they arrived on campus. In addition, some of the students indicated the biggest problem they faced in using the student union was that the elevator did not go to the top floor of the union. This contradicted Dr. Scales' assertion that the elevator in the union moved to all floors.

When asked if the campus administration building was more accessible, the students
and Dr. Scales concurred that the building was not accessible. Dr. Scales commented that plans were in place for 1995-96 to make the building fully accessible.

Both groups agreed that the learning labs were already accessible when asked if changes had been made. Dr. Scales and the students also stated that the computer labs were already accessible when they arrived on campus.

When asked if changes had been made to the sidewalks, both groups reported that the university had done a good job to add curb cuts to the campus sidewalks. The students indicated that they had noticed more curb cuts were added each year since that arrived on campus.

In regard to parking facilities, most of the students stated that no changes had been made in these facilities. Typically, most students pointed out the need for more parking spaces on campus for disabled students. Dr. Scales indicated that, like most campuses, parking was a problem, but the University of Maryland had built parking facilities on campus to accommodate all students.

In conclusion, while most disabled students who were interviewed seemed satisfied with the progress made since the ADA became law in 1990, they cited several areas where improvement was still needed (see Figure 3). The legal counsel at the U.S. Equal Employment Opportunity Commission in Washington, D.C., advised the researcher that, because of the nature of the study, the EEOC would not recommend giving a personal assessment of any observations concerning the two campuses.
There is a need to provide:

• additional note takers for hearing impaired students
• additional interpreters for the hearing impaired students
• additional readers and Kurzweil Readers for visually impaired students
• additional time for the visually impaired to complete assignments and exams
• priority for disabled students when using campus elevators
• an elevator in the Student Union for disabled students in wheel chairs to access the top floor
• an elevator in the Administrative Building so that disabled students in wheel chairs can go beyond the first floor
• additional library staff to assist disabled students in using the facilities
• Braille and flashing lights on all elevators for the seeing and hearing impaired
• additional parking spaces for disabled students
• ticketing and/or towing of unauthorized vehicles illegally parked in spaces designated for disabled students

Figure 3. Improvements suggested by student respondents to make campus facilities more accessible at the University of Maryland

Responses to interview questions from students at George Washington University

Participants from George Washington University responded to each of the key research questions used in the study. Seven disabled students were interviewed individually during November 1994, and were asked a series of questions to determine whether changes have been made to make their campus more accessible for the physically challenged since the ADA was signed into law in 1990. Their responses are discussed in the same manner that was used to describe information provided by students from the University of Maryland.

Interview Question 2

2. What physical changes to classrooms, residence halls, libraries, the student union, administration building, learning labs, computer facilities, sidewalks, and parking/ramps have been made to make your campus more accessible to disabled students?
Of the seven respondents interviewed, five respondents stated they thought physical changes had been made to the George Washington University campus since the ADA was signed into law in 1990. Two respondents indicated they had noticed no physical changes at the institution. Two of the seven respondents indicated that they believed changes had not occurred on their campus, therefore, they could not adequately respond to questions 2, 3, and 4. The following analysis provides an assessment of some of the changes that have taken place in (1) classrooms, (2) residence halls, (3) campus libraries, (4) the student union, (5) the administration building, (6) learning labs, (7) computer facilities, (8) sidewalks, and (9) parking facilities.

Classrooms - Of the five respondents who said changes had occurred on their campus since the ADA was signed into law, only three respondents indicated changes had occurred in classrooms. The respondents indicated changes included the addition of more automated doors to some of the buildings. Two respondents indicated ramps were added to buildings to make it easier for disabled students to enter and exit the buildings. Respondents also indicated that classes have been moved to buildings that are accessible. Two respondents indicated to their knowledge there had been no changes in the classrooms to make them more accessible for disabled students.

Residence Halls - When asked if changes had been made to the residence halls to make them more accessible, four of the five respondents indicated that changes had been made. One respondent reported shelves had been lowered to arm reach level for students in wheelchairs. The respondent also indicated other changes included better lighting in the
residence halls for visually impaired students. Rails have been placed into bathrooms to make them more accessible. In addition, rooms had been enlarged for students in wheel chairs.

Campus Libraries - Four of the five respondents indicated some changes have taken place to make the libraries more accessible to disabled students. The respondents indicated ramps and automated doors had been added to the entrances and exits to make them accessible for students in wheel chairs and other disabled students using the library facilities. One respondent indicated that the bathrooms had been made accessible by having door openers at arm reach levels. Another respondent stated that Braille signs had been installed on elevators to make them accessible for visually impaired students. In addition, a respondent noted the libraries had computerized their catalog system making it accessible to disabled students.

Student Union - When asked if the student union building has been made more accessible to disabled students, four of the five respondents stated there had been no additional changes to make this facility more accessible. The respondents indicated the ramp and automated doors were in place when they arrived on campus. They noted that the bathrooms were already wheel chair accessible. Overall, the respondents stated that the student union building was accessible to disabled students. One respondent indicated the union had made some additional changes to the cafeteria to be more accessible, including providing more entrances and exits for students in wheel chairs.

Administrative Facilities - Most of the respondents indicated there have been no changes to the campus administration building to make it more accessible. Only one of the
five respondents said there had been changes to the administration building. This respondent indicated ramps and automated doors had been installed in the building.

Learning Labs - When asked if changes have been made to make the learning labs more accessible, all of the respondents stated that no changes had been made to make the facilities more accessible to disabled students.

Computer Facilities - Four out of five respondents said no changes had taken place to make the computer facilities more accessible to disabled students. Most of the respondents did say that the computer facilities were accessible to them and that the staff was always willing to assist them whenever there was a problem. Only one respondent said that additional computers had been installed on campus.

Sidewalks - Students were asked if any changes have been made to the sidewalks to make them more accessible. Three of the five respondents indicated changes had been made to improve accessibility, particularly for those in wheel chairs. The three respondents stated during the interviews that sidewalks had been made smooth for students in wheel chairs. Two respondents further stated more curb cuts were added and widened to make them more accessible.

Parking Facilities - When asked about parking facilities, four respondents complained that there were not enough parking spaces designated for disabled students. They complained frequently of other students using handicapped spaces. However, the respondents said that other students were warned not to use spaces designated for disabled students. Because their campus is urban and located close to the business district, parking is a major problem in the
area. Typically, disabled students have to compete with others members of the university community for parking.

Summary

This section provides information relating to research question 1 which asks: What changes have physically disabled students seen on their campus since the ADA became law? Overall, according to key findings, most disabled students indicated that changes had been made on their campus to make it more accessible since the ADA became law. According to the respondents, changes had been made to improve most facilities on campus. However, most respondents cited that no changes had been made to the student union, the administration building, learning labs, or the computer facilities. The respondents indicated that most of these facilities were already accessible to them when they arrived on campus. The learning lab facilities, located in Stuart Hall, were currently being renovated to make them fully accessible to disabled students, and should be completed by the 1995-96 academic year.

Interview Questions 3 and 4

3. For which disabilities have physical changes on your campus been directed?
4. What changes have been made to address the needs of hearing impaired, speaking impaired, seeing impaired, walking impaired, moving impaired, and other disabilities?

The majority of respondents indicated some changes have been directed at selected disabilities. Five of the respondents indicated changes have occurred more frequently for disabled students in wheel chairs than for students with other disabilities. Most respondents stated more automated doors were added to buildings to make them more accessible to
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students in wheel chairs. One respondent indicated rest room facilities and the cafeterias were made more accessible to accommodate the needs of students in wheel chairs. Another respondent stated classes have been moved to buildings that are accessible to accommodate students in wheel chairs. Respondents did not specify what classes have been moved to an accessible building. Two respondents stated they were unsure if physical changes had been directed at certain disabilities.

Each respondent was asked if changes have taken place to address the needs of students with particular impairments. When asked if changes have been made to address the needs of those who are hearing impaired, four out of five respondents stated that changes have occurred to make the campus more accessible for hearing impaired students. Two respondents indicated interpreters have been provided in classrooms for hearing impaired students. To further assist hearing impaired students, interpreters have been provided at events held on campus so that hearing impaired students may benefit from those activities. Another respondent stated in some buildings elevator lights blink for hearing impaired students to indicate that the elevator has reached the desired floor. Another respondent noted that dorm rooms have been renovated for deaf students to include a system connecting the doorbell to a blinking light. This will allow deaf students to know when someone is at their door. Of the five respondents who indicated changes have occurred on their campus for physically disabled students, none of them knew of any particular changes made to address the needs of speech impaired students.

Most respondents stated during their interview that they did not notice any changes
made to address the needs of students who are seeing or visually impaired. Two out of five respondents mentioned during their interviews that changes have occurred to address the needs of visually impaired students. One respondent noted that there were more Braille signs in buildings. In this respondent's opinion, instructors were more willing to provide extra assistance to visually impaired students when requested, and to allow the students additional time in completing assignments. Another respondent stated additional staff have been added to the library to assist the visually impaired and other disabled students. The respondent indicated that this has been helpful to students with physical impairments.

When asked if changes have been made to address the needs of students who are walking or mobility impaired, five respondents indicated the most noticeable changes have taken place on campus for students with these impairments. Most the of the respondents indicated curb cuts have been added to sidewalks to make it easier for students in wheel chairs to move around campus. The respondents also stated more automated doors and ramps have been added to some of the older buildings as well as to the newer buildings. One respondent stated classes have been moved to another building to accommodate students in wheel chairs.

Summary This section provides information relating to research questions 1 through 4: (1) What changes have physically disabled students seen on their campus since the ADA became law? (2) What changes have the Directors of Disabled Students seen on their campus since the ADA became law? (3) How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? and (4) Are these differences in the changes identified by both disabled students and the Director of Disabled Students on
each campus? Overall, key findings showed most disabled students indicated that more changes have been made on their campus to benefit disabled students in wheel chairs than for other disabled students. Students reported that more automated doors and ramps had been installed, and in several cases, classes were moved to other buildings to accommodate students in wheel chairs. While these changes have occurred for students in wheel chairs, the respondents reported that changes had also been made in other areas to accommodate students with other disabilities.

Interview Question 5

5. What changes to classrooms, residence halls, libraries, student union, the administration building, learning labs, computer facilities, sidewalks, and parking/ramps are needed to make your campus facilities more accessible?

During this segment of the interview, the respondents were asked if they thought changes were needed to make their campus facilities more accessible. Most of the respondents indicated that the university was trying to provide an environment and campus where disabled students could feel comfortable. However, some of the respondents felt that the university needed to do more to make the campus more accessible for disabled students. The respondents were frank about discussing changes needed to make their campus more accessible for them.

Classrooms - The respondents were asked if they believed changes were needed to make their classrooms more accessible. Four out of the seven responded in the affirmative, whereas three of the respondents interviewed thought that no changes were needed for the classrooms. Specifically, one respondent stated that faculty members on campus need to
become more aware of the needs of disabled students. This respondent indicated that, while the university has had symposia to discuss issues pertaining to disabled students, the student was not sure whether the dialogue was reaching faculty on campus. The respondent noted that a faculty member seemed reluctant to allow him additional time to complete an assignment. This respondent indicated that faculty members should try to familiarize themselves with the needs of disabled students. As a result, faculty members may become more sensitive when disabled students request additional time to complete their assignments.

One respondent stated that better lighting needs to be installed in the classrooms for visually impaired students. She commented: "...for someone with very limited vision in both eyes, it would be helpful to me and other visually impaired students if brighter lights were installed in the classrooms."

Another respondent said that, while George Washington University has made much progress in making campus buildings accessible to disabled students, some buildings still remain virtually inaccessible to disabled students. In particular, the psychology building was still not wheelchair accessible and needed to have automated doors and ramps installed.

Another respondent complained that the university had not done enough to make their buildings wheelchair accessible, particularly the Psychology Building.

*Residence Halls* - The respondents indicated overall the university has done a good job to ensure that residence halls were wheelchair accessible and able to accommodate the needs of disabled students living there. Most of the respondents indicated that some of the rooms were large enough to accommodate students in wheelchairs. The respondents also
said that the bathrooms were wheelchair accessible and had rails in them to assist those students in wheelchairs.

**Campus Libraries** - When the respondents were asked if changes were needed to make the libraries more accessible, most of the respondents interviewed indicated that some changes were needed to better accommodate the needs of disabled students. Four out of seven respondents said that improvements are needed to make the library more accessible to disabled students. One of the respondents thought the library staff needed more training on how to assist disabled students using the library. This respondent stated that the library staff was not as familiar with the needs of disabled students as they should be. The respondent also said that additional staff needs to be hired to assist disabled students in gathering books and other library materials.

Three respondents complained that the computers located in the library were not accessible for students in wheelchairs. The respondents said that the computers and photocopy machines were not at arm reach level for students in wheelchairs. All three visually impaired respondents stated it would be helpful if the libraries had computers with large print for them. These respondents complained that the computer print was extremely small, making it very difficult for visually impaired students. One of the visually impaired respondents also said the call numbers and signs in the libraries were too small to be read.

**Student Union** - Most respondents indicated to the researcher that some changes were needed to make the student union more accessible for disabled students. Four out of seven respondents indicated changes were needed to make the union more accessible for disabled
students. One of the respondents indicated that more staff was needed to assist disabled students. This respondent also indicated it would be helpful if the university offered some training to educate the staff on assisting disabled students.

Another respondent stated the bookstore located in the union was not completely wheelchair accessible. This respondent indicated the second floor of the bookstore was not accessible to students in wheelchairs. Another respondent said that some of the bathrooms in the student union were not wheelchair accessible. This respondent said it was sometimes difficult to locate a wheelchair accessible bathroom in the union because the signs were not always visible.

**Administrative Facilities** - All of the students said no changes were needed to make the campus administration building accessible. They indicated the building was accessible for disabled students, particularly those in wheelchairs. Six respondents indicated that no changes were needed to make the learning labs more accessible for disabled students. Only one respondent out of seven indicated that any changes were needed to make the facilities accessible. This respondent indicated that for visually impaired students, charts and graphs were often difficult to read because of the small size of the print.

**Computer Facilities** - Three out of seven respondents indicated changes were needed to make the computer facilities more accessible to disabled students. Three respondents stated computers on campus need to have screens with large print for visually impaired students. Respondents complained of the shortage of the staff available to assist visually impaired students in reading the screens. One respondent said that the university should have
more computers reserved for disabled students use. This respondent noted that, while some computers are reserved for disabled students, there still are not enough to accommodate the population of disabled students on campus.

Sidewalks - When the respondents were asked if changes were needed to make the sidewalks more accessible, all of the respondents stated that the university had done a good job in making them accessible by adding curb cuts. The respondents stated curb cuts have been placed on most sidewalks adjacent to the university campus and are very accessible for students in wheel chairs.

Parking Facilities - All of the respondents stated they did not think that any significant changes needed to be made in terms of parking. Two respondents did say it might be helpful if more parking close to campus was designated for disabled students.

Summary  This section provides information relating to research questions 3 through 5: (3) How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? (4) Are these differences in the changes identified by both disabled students and the Director of Disabled Students on each campus? and (5) What additional changes are identified by disabled students on each campus as being needed to make their campus more accessible? Overall, key findings indicated most George Washington University respondents reported that progress had been made to improve their campus and to make it more accessible to them. However, the respondents indicated that there was still a need for further changes to improve the quality of life for disabled students. The students commented that there needs to be more dialogue among faculty members so that they may
become more familiar and sensitive to the needs of disabled students. In general, several areas need changes for campus accessibility: additional library staff needs to be hired and trained to assist disabled students with specific disabilities; the student union also needs additional staff to assist disabled students; the bookstore should be renovated to be wheel chair accessible on all floors; and accommodations should be made in all areas to provide computers with larger screens for visually impaired students.

**Interview Question 6**

6. How would you rate the sensitivity of the following groups (non-disabled students, faculty, support staff, administrators, student affairs staff, and other groups) to the needs of disabled students since the ADA was signed into law (much more sensitive, more sensitive, no change, less sensitive, much less sensitive)?

Respondents were asked to rate the sensitivity of groups on their campus toward the needs of the disabled. A breakdown of ratings by the respondents is provided in Table 8. When the respondents were asked to rate the sensitivity of non-disabled students to disabled students, four out of seven respondents indicated they perceived non-disabled students as being more sensitive to the needs of disabled students since the ADA was signed into law. Three respondents indicated that they did not notice any change in the attitudes of non-disabled students toward disabled students. Six respondents rated the faculty members as being more sensitive to the needs of disabled students since the ADA was signed into law. One respondent indicated that there was no perceived change among the attitudes of the faculty toward disabled students.

The respondents gave the support staff a favorable rating. Six out of seven
Table 8. Perceived sensitivity rating by respondents to the needs of disabled students since the passage of the American Disabilities Act of 1990

<table>
<thead>
<tr>
<th>Category</th>
<th>Much more sensitive</th>
<th>More sensitive</th>
<th>No change</th>
<th>Less Sensitive</th>
<th>Much less sensitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-disabled students</td>
<td>4</td>
<td></td>
<td>3</td>
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<tr>
<td>Faculty</td>
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<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support staff</td>
<td>6</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Administrators</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student affairs staff</td>
<td>6</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other groups/ Greek organizations</td>
<td>6</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

respondents rated the support staff as being more sensitive to the needs of disabled students.

All of the respondents rated the administrators as being more sensitive toward disabled students since the signing of the ADA into law. Six out of seven respondents rated the student affairs staff as being more sensitive, with one respondent indicating that there has been no change in the attitudes of student affairs staff toward disabled students.

Summary This section provides information relating to research questions 2 and 3: (2) What changes have the Directors of Disabled Students seen on their campus since the ADA became law? and (3) How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? Overall, according to key findings, most
respondents rated non disabled groups on their campus as being more sensitive to the needs of disabled students since the ADA became law. Among the groups, only three respondents indicated that there was no change among non disabled students.

**Interview Question 7**

7. How do you rate the disabled student service officer's understanding of the needs of disabled students on your campus (excellent understanding, good, understanding, limited understanding, or no understanding)?

This interview question provides information related to research question 3: How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? The respondents were asked to provide their assessment of the disabled student services officer on their campus. Four out of seven respondents said that the disabled student services officer possessed an excellent understanding of the needs of the disabled students, whereas three respondents said that the disabled student services officer had a good understanding of the needs of disabled students on their campus.

**Interview Question 8**

8. What campus transportation systems (buses or other) are available for disabled students?

This interview question provides information related to research question 1: What changes have physically disabled students seen on their campus since the ADA became law? The respondents were asked if campus buses were accessible to disabled students on their campus. All of the respondents informed the researcher that the university does not provide a campus bus service for their students. Disabled students use the public transportation system
provided in Washington, D.C. The public transportation system provides bus and subway services. Both the bus and subway systems are equipped and accessible for accommodating disabled students. Within the past year the subway system became wheel chair accessible and elevators have been installed in the subway tunnels to enter and exit from the street. The machines that dispense subway tickets are now capable of processing Braille systems for individuals who are visually impaired. In addition, students with disabilities are granted a lower rate when boarding the subway or bus. Finally, the subway station is located directly on the campus of George Washington University, making it accessible for disabled students.

Interview Question 9a

9a. Describe the positive aspects of the services for disabled students on your campus, and state the best services/facilities.

One respondent stated the most positive service available on campus has been the Kurzweil Personal Reader. The Kurzweil Personal Reader is a computer that can verbally read materials to visually impaired students. The Kurzweil Personal Reader is located in the campus library and is extremely helpful to visually impaired students with documents that need to be read. The respondent stated often times when handouts are provided in class, she is able to use the Kurzweil Personal Reader.

Another positive aspect has been the Disabled Student Services Office. This office has made available work study students to assist visually impaired students by reading assignments on tape for listening at a later time. The respondent also credited the Director of Disabled Student Services for doing a good job of ordering books on tape.
Most respondents stated the Director of Disabled Student Services and her staff have provided tremendous support when needed. The respondents said that the office has been extremely helpful in assisting them with problems around campus. Some respondents said that the Disabled Student Services Office has been helpful in increasing general campus awareness of the ADA together with the needs of disabled students on their campus. They also indicated that several symposia have been organized to discuss the ADA and the varied ways to improve the quality of life for disabled students on the George Washington University campus. The Disabled Student Services Office organizes a week-long program each April on disabled student awareness. During this special week, speakers are invited to campus and a variety of workshops are held to discuss issues pertaining to disabled students. In addition to raising campus awareness of disabled students, these programs have helped establish dialogue on campus concerning disabled students. The respondents also said that the Disabled Students Services Office has been helpful in providing programs in the residence halls to discuss issues and concerns of disabled students. Most of the respondents indicated that this office has served a viable and important function on campus for disabled students.

One respondent indicated the class relocater service has been a tremendous source of help for individuals in wheel chairs. Through this service, disabled students can request that a class be moved to a building that is accessible.

Additionally, the university offers a proctor test program which allows students more time to complete exams while being proctored. Although the proctor service is offered at George Washington University, it became very clear during the interviews that not all of the respondents are aware that this service is being offered. This suggests that the Disabled
Student Services Office needs to promote general awareness of the programs and services that are available to the disabled students on the George Washington University campus. While most of the respondents interviewed indicated that their experiences have been positive at the university, most of them stated there is a need for more educational awareness of the needs of disabled students across the university.

**Summary**  This section provides information related to research question 3: How are these changes perceived by both disabled students and the Director of Disabled Students on campus? Overall, according to key findings, most respondents reported that the university had improved the quality of life on campus for disabled students. The respondents emphasized the strong support received by the Disabled Student Services Office. This office has provided a variety of services to disabled students, as well as offering programs during the academic year to increase the awareness of the ADA and the needs of disabled students.

**Interview Question 9b**

9b. Describe the most negative aspects of your campus and the most negative experiences as a student with a disability that you have encountered since you have been a student at the university.

Each respondent was asked by the researcher to describe his or her most negative experience as a disabled student on their campus. Two of the respondents indicated that they had had no negative experience. Most of the respondents indicated that the university has been responsive in addressing their particular needs. However, some problems were noted.

Two respondents indicated to the researcher that some faculty members appear to be insensitive toward allowing visually impaired students additional time to complete exams.
These professors seem to be in a rush to collect exams and are not sensitive toward the students' disabilities. In addition, faculty members seem reluctant to allow visually impaired students the opportunity to take exams outside of the classroom setting, in spite of their being proctored.

Another respondent said his most negative experience has been other students avoiding being around him because of this disability. This respondent indicated that, as a visually impaired student, some students have had a tendency to avoid interacting with him in class as much as they do with other students.

The respondent also indicated that he had experienced difficulty in locating a restroom in the union that was accessible to disabled students. Signs were not sufficiently visible to provide adequate direction to the restrooms that were accessible for individuals confined to wheel chairs. Some respondents said it would be helpful if someone were available in the union to provide instructions or guidance when needed. In addition to these concerns, most respondents indicated that additional library staff should be hired to assist disabled students while using the facilities.

Summary This section provides information related to research question 3: How are these changes perceived by both disabled students and the Director of Disabled Students on campus? Overall, according to key findings, most respondents indicated the university had been responsive to their particular needs. However, respondents expressed concern that some faculty members were not sensitive to the needs of disabled students. Another concern expressed was that some non-disabled students avoided individuals with
disabilities. Some respondents indicated a need for additional staff to assist disabled students campus-wide.

**Interview Question 9c**

9c. How can your campus environment be improved for you?

Two out of the seven respondents stated that they were not sure how the campus environment could be improved. One respondent indicated that the best way to improve the campus environment would be through continued dialogue on the needs of disabled students among administrators, faculty members and students. One respondent stated that in doing so, she hopes that the university community would become more knowledgeable about the needs of disabled students.

Several respondents said that the university should invite a panel of experts to campus periodically to discuss issues pertaining to disabled students. Another respondent said that it might be helpful to offer workshops and training on how to deal with students with various disabilities. Such training and workshops should be open to the entire university community. The respondent also said that the university should continue to make more buildings accessible, and perhaps consider providing a bus service to pick up and discharge disabled students at the nearby subway stations.

In spite of fiscally difficult times faced by George Washington University, one respondent indicated it would be helpful if more readers, note takers and interpreters were hired to assist students with various disabilities. Another respondent noted that better lighting in and around the buildings may help students that are visually impaired.
Summary  This section provides information related to research question 3: How are these changes perceived by both disabled students and the Director of Disabled Students on campus? According to key findings, George Washington University respondents also reported a need for more dialogue within the university community to discuss the ADA and the needs of disabled students. Most respondents indicated a need for additional staff to be hired campus-wide to address their particular needs. These were similar to the views expressed by disabled students from the University of Maryland.

Responses of Director of Disabled Student Services

Ms. Christy Willis agreed to a personal interview in her office on the George Washington University campus on February 24, 1995. She had been with the George Washington University for eleven years in various positions before becoming Director of Disabled Students Services. Ms. Willis was asked the same set of questions that were asked of all participants in the study.

Interview Question 2

2. What physical changes to classrooms, residence halls, libraries, the student union, administration building, learning labs, computer facilities, sidewalks, and parking/rams have been made to make your campus more accessible to disabled students?

Ms. Willis responded that in most buildings where classes are being held, automated doors and ramps have been installed to accommodate the needs of disabled students. She also stated that Stuart Hall, where the campus learning labs are located, was not accessible at present for disabled students. However, she said Stuart Hall will be under renovation in
Summer 1995 to make it accessible to disabled students. For disabled student convenience, classes have been moved to accessible buildings.

On a positive note, since the ADA, some of the residence halls have been renovated to accommodate disabled students. The renovation has included making rooms larger to accommodate students in wheel chairs and installing railings in bathrooms. A new residence hall is scheduled to be built next year to accommodate all students—disabled and nondisabled.

Additional staff needs to be hired in the library to assist disabled students. The student union bookstore area presented a problem for students in wheel chairs because students in wheel chairs were unable to move to all levels of the store. Plans are being made to have the bookstore renovated sometime next year.

Regarding the campus administration building, no physical changes have been made to make it more accessible since it was already accessible to disabled students.

The computer facilities have been fully accessible to disabled students. In addition, the university also has Kurzweil Personal Reader computers for use by disabled students with visual disabilities.

The sidewalks around campus had curb cuts made into them, however, no real changes had been made in terms of parking. The director indicated that there was space available to disabled students around campus, but these spaces were often taken by non-disabled students who tended to park wherever they could find a space.

**Interview Questions 3 and 4**

3. For which disabilities have physical changes on your campus been directed?
4. What changes have been made to address the needs of hearing impaired, speaking impaired, seeing impaired, walking impaired, moving impaired, and other disabilities?
Ms. Willis responded that changes were being made to accommodate students with various disabilities. She indicated that she did not think preference was being directed at any one disability.

Ms. Willis noted that telecommunication device for the deaf phones and interpreters were available on campus to assist the hearing impaired. In addition, the university offered special assistance to students with speech impairments.

Students who are visually impaired have access to an escort service upon request. Braille has been placed in the elevators around campus for visually impaired students, and note takers have been made available as well.

Disabled students who have a mobility impairments may also utilize the escort service to assist them in getting around campus.

**Interview Question 5**

5. What changes to classrooms, residence halls, libraries, student union, the administration building, learning labs, computer facilities, sidewalks, and parking/ramps are needed to make your campus facilities more accessible?

Ms. Willis indicated that the classrooms were already accessible and that classes could be moved to an accessible building to accommodate disabled students. She noted that she had not heard any complaints from disabled students concerning the residence halls. A new residence hall is being built; also, the bookstore will be renovated next year according to ADA guidelines. The administration building and computer labs are already accessible to disabled students. Curb cuts have been made to the sidewalks on campus. She indicated that she did not think any changes were needed to the parking facilities in and around campus.
Interview Question 6

6. How would you rate the sensitivity of the following groups (non-disabled students, faculty, support staff, administrators, student affairs staff, and other groups) to the needs of disabled students since the ADA was signed into law (much more sensitive, more sensitive, no change, less sensitive, much less sensitive)?

Ms. Willis' assessment of the sensitivity of groups on campus to the needs of disabled students since ADA is shown in Table 9.

Table 9. Sensitivity rating by Ms. Willis to the needs of disabled students since the passage of the American with Disabilities Act of 1990

<table>
<thead>
<tr>
<th>Category</th>
<th>Sensitivity rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Much more sensitive</td>
</tr>
<tr>
<td>Non-disabled students</td>
<td>✓</td>
</tr>
<tr>
<td>Faculty</td>
<td>✓</td>
</tr>
<tr>
<td>Support staff</td>
<td>✓</td>
</tr>
<tr>
<td>Administrators</td>
<td>✓</td>
</tr>
<tr>
<td>Student affairs staff</td>
<td>✓</td>
</tr>
<tr>
<td>Other groups/ Greek organizations</td>
<td>✓</td>
</tr>
</tbody>
</table>

Interview Question 8

8. What campus transportation systems (buses or other) are available for disabled students?

Ms. Willis stated that the university does not have a campus bus available for disabled students. She indicated disabled students use public transportation to get to and from campus.
Interview Question 10

Ms. Christy Willis was asked some additional questions based on the qualitative nature of the study:

10a. Has a self-evaluation study been conducted on your campus?
10b. Is there a university committee in place to study issues and concerns of disabled students on campus?
10c. Are there any long term plans or future plans to make changes to the campus to make it more accessible to disabled students?
10d. Have any surveys been conducted by the disabilities support services office on issues and concerns of disabled students on campus?

In reply to whether a self-evaluation study was conducted at George Washington University, Ms. Willis stated that a study was completed in May 1993. She added that an ADA Task Force meets monthly to discuss issues and concerns of disabled individuals on campus as well as areas where facilities need to be improved for accessibility.

Because of the nature of the study and the fact that George Washington University is a private institution, Ms. Willis was reluctant to discuss long-term plans or the dollar amount of funds available to implement changes on campus. She did note that students are surveyed each year to gather information for discussions about issues and concerns.

Summary This section provided information related to research questions 2, 3, 4, and 6: (2) What changes have the Directors of Disabled Students seen on their campus since the ADA became law? (3) How are these changes perceived by both disabled students and the Director of Disabled Students on each campus? (4) Are these differences in the changes identified by both disabled students and the Director of Disabled Students on each campus? and (6) What additional changes are identified by the Director of Disabled Students on each
campus as being needed to make their campus more accessible? Overall, key findings indicated that most disabled students perceived George Washington University has made significant progress in making campus facilities more accessible. Only two disabled students perceived that changes had not been made on their campus since the ADA became a law in 1990. During this researcher's interviews with individual disabled students and with the Director of Disabled Student Services, often times similar responses were provided.

When asked if changes had been made in the classrooms to make them more accessible, the disabled students reported that more ramps and automated doors had been installed to make it easier to enter and exit buildings. The Director of Disabled Student Services concurred that these changes had taken place.

When asked if changes had been made in the residence hall, the disabled students and the director agreed that changes had been made to make the facilities more accessible. Both groups had reported that the rooms had been enlarged to accommodate students in wheelchairs. They also stated that the bathrooms had been made more accessible through the installation of hand rails. Students further commented that additional changes included the lowering of shelves to arm reach level for students in wheelchairs, as well as installing improved lightning for students with visual impairments.

When asked if changes had been made in the campus libraries, only the students indicated that changes had been made. They indicated that automated doors and ramps were installed to make the library facilities accessible for students in wheelchairs. They also reported that additional changes included the installation of Braille signs on elevators for the
visually impaired, and the installation of a computerized catalog system to accommodate disabled students. During an interview with the researcher, Director Christy Willis stated that additional staff was still needed in the library to accommodate disabled students.

When asked if the student union building had been made more accessible, the disabled students reported these facilities were already accessible and that no additional changes had been made. Ramps and automated doors were in place when the students arrived on campus. However, Christy Willis noted that the student union bookstore area was a problem for students in wheelchairs because all floor levels were not accessible to them. The director did report that plans were being made to renovate the bookstore during the following year.

Both the disabled students and Director Christy Willis reported that no additional changes had been made to the administration building. When asked if the building was accessible, everyone commented that it was already accessible to disabled students.

When asked if changes had been made to the learning lab facilities, the disabled students stated that no additional changes had been made to make the facilities more accessible. The Director, however, indicated that the learning lab located in Stuart Hall was not accessible to disabled students. She also stated that plans were in place to have these facilities renovated the following year.

When asked if changes had been made to the sidewalks on campus, both the director and the disabled students reported that more curb cuts and been constructed to accommodate students in wheelchairs. According to both groups, this has made the urban campus more accessible and easier for students to move around in wheelchairs.
While most disabled students had indicated during their interviews that changes had been made at George Washington University, they cited areas where improvement was still needed to make their campus more accessible (see Figure 4). As previously stated, the Legal Counsel at the U.S. Equal Employment Opportunity Commission in Washington, D.C., advised the researcher that, because of the nature of the study, the EEOC recommended against providing a personal assessment of any observations.

- more dialogue campus-wide on the ADA and other issues pertaining to disabled students
- better lighting in classrooms for disabled students
- more buildings need to made accessible to disabled students by installing more ramps and automated doors
- additional readers and note takers
- additional tutors
- additional library staff need to be hire and additional training of library staff to better assist disabled students in using the facilities
- computers and photocopy machines in the library should be lowered so that by students in wheel chairs can use them
- larger signs for the visual impaired
- additional staff hired in the Student Union to assist disabled students
- additional designated parking
- better ticketing of non-disabled students using these parking spaces

Figure 4. Improvements needed at George Washington University as suggested by student respondents
CHAPTER 5. SUMMARY, FINDINGS, IMPLICATIONS, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The final chapter of this study is organized into three sections. The first section presents the summary and conclusions of the study. The second section focuses on the limitations of the study, while the third sections presents recommendations for future research.

Summary

The purpose of this pilot study was to determine whether the University of Maryland and the George Washington University campuses have made physical changes since the ADA became law in 1990. The researcher interviewed students with disabilities from each of the two campuses. Five disabled students from the University of Maryland campus were interviewed, while seven students were interviewed from the George Washington University campus. The interviewed students were pursuing degrees in a variety of majors. Their classifications on campus ranged from sophomore to senior.

As discussed in Chapter 4, the interview questions were developed based on the research questions. As matrix was constructed (see Table 7) to show the relationship between each research question and the interview questions. Key findings were identified from these interview questions based on the responses provided by those who were interviewed.

The following research questions guided the study:

1. What changes have physically disabled students seen on their campus since the ADA became law?

2. What changes have the Directors of Disabled Students seen on their campus since the ADA became law?
3. How are these changes perceived by both disabled students and the Director of Disabled Students on each campus?

4. Are these differences in the changes identified by both disabled students and the Director of Disabled Students on each campus?

5. What additional changes are identified by disabled students on each campus as being needed to make their campus more accessible?

6. What additional changes are identified by the Director of Disabled Students on each campus as being needed to make their campus more accessible?

Following is a summary of the findings for disabled students and the Director of Disabled Student Services from both campuses and conclusions of the study.

Findings

The findings of this study were based on the responses provided by the disabled students from the University of Maryland and George Washington University, and by the directors of Disabled Students Services from both campuses.

Physical changes on The University of Maryland campus

Perceptions by disabled students  The findings of the study are based on the perceptions of disabled students in response to the interview questions of the study and are summarized as follows:

2. What physical changes to classrooms, residence halls, libraries, the student union, administration building, learning labs, computer facilities, sidewalks, and parking/ramps have been made to make your campus more accessible to disabled students?

   While one disabled student did not notice any changes, most disabled students
indicated physical changes had been made to make their campus more accessible. These physical changes are denoted in nine areas: (a) Classrooms; (b) Residence Halls; (c) Campus Libraries; (d) Student Union; (e) Administrative Facilities; (f) Learning Labs; (g) Computer Facilities; (h) Sidewalks; and (I) Parking Facilities.

a. *Classrooms* - Automated doors have been installed in most buildings and classes can be moved to an accessible building to accommodate students in wheel chairs.

b. *Residence Halls* - Automated doors have been installed in residence halls. Single rooms and larger rooms have been provided to disabled students, shelves have been lowered to arm reach level in closets, and rails have been installed in bathrooms.

c. *Campus Libraries* - There were not enough staff employed to assist disabled students when retrieving books and other reading materials. Because of this shortage of staff, the disabled students often had to wait to ask questions or to obtain assistance when using the Xerox machines or obtaining books and other materials.

d. *Student Union* - Most disabled students cited no additional changes to the student union. The majority of them indicated that automated doors were already in place. The most significant problem identified was the need for an elevator to go to the top floor. They indicated the inaccessibility has prevented them from participating with student groups.

e. *Administrative Facilities* - Most of the disabled students complained the building
was not accessible for students in wheel chairs. They also indicated ramps and automated doors needed to be installed.

f. Learning Labs - Most disabled students said the learning labs were already accessible when they arrived on campus. Additional changes had not been made.

g. Computer Facilities - Most disabled students viewed these facilities as accessible to them. A university committee was in the process of studying ways to improve these facilities for disabled students.

h. Sidewalks - Most disabled students thought the university has done a good job adding curb cuts for individuals in wheel chairs.

i. Parking - Most disabled students complained of the need for additional parking spaces on campus. Some disabled students indicated spaces on campus designated for them have been used by non-disabled students.

3. For which disabilities have physical changes on your campus been directed?

Most of the disabled students said that physical changes had been directed at students in wheel chairs. The physical changes frequently mentioned were related to mobility impaired students such as the installation of automated doors and ramps, and the relocation of classes, when necessary, to a building that is accessible to students in wheel chairs.

4. What changes have been made to address the needs of hearing impaired, speaking impaired, seeing impaired, walking impaired, moving impaired, and other disabilities?

Most disabled students indicated no changes had been made to address the needs of hearing impaired. Only one disabled student said the university was doing a good job in providing interpreters for the hearing impaired. Most disabled students stated no changes had
been made to address students with speaking impairments.

Some disabled students thought no changes had occurred for visually impaired students, while other disabled students reported the following changes for visually impaired students: professors allowing additional time to complete assignments and exams; text books made available on tapes in the campus libraries; and readers provided to assist visually impaired.

Most disabled students indicated changes were made for walking or mobility impaired such as a shuttle bus with special seating particularly for those in wheel chairs, and the installation of ramps and automated doors in many buildings.

5. What changes to classrooms, residence halls, libraries, student union, the administration building, learning labs, computer facilities, sidewalks, and parking/ramps are needed to make your campus facilities more accessible?

Most disabled students indicated progress had been made to make the campus more accessible. However, they cited areas where improvement is needed to make the campus more accessible.

a. Classrooms - More note takers should be made available in classes for hearing impaired; more interpreters need to be hired to assist hearing impaired; additional time needs to be given to visually impaired students in completing assignments and exams; automated doors need to be checked periodically; priority needs to be given to disabled students who use the elevator; and professors need to provide notes to visually impaired students.

b. Residence Halls - Disabled students indicated no additional changes were needed
to make residence halls accessible.

c. *Campus Libraries* - Additional staff needs to be hired to assist disabled students, and visually impaired students have problems trying to read signs that are either not at eye level or the print is relatively small.

d. *Student Union* - An elevator needs to be installed that would go to the top floor of the student union, and more signs identifying accessible rest room facilities for disabled students are needed.

e. *Administrative Facilities* - Automated doors and ramps need to be installed.

f. *Learning Labs* - Current facilities were already accessible.

g. *Computer Facilities* - Disabled students requested no changes to the facilities, 

h. *Sidewalks* - Most disabled students acknowledged the university had done a good job in its effort to add curb cuts to the sidewalks.

i. *Parking Facilities* - Additional parking is needed for disabled students, and parking facilities need to be monitored to prohibit non-disabled students from parking in designated areas for disabled students.

6. How would you rate the sensitivity of the following groups (*non-disabled students, faculty, support staff, administrators, student affairs staff, and other groups*) to the needs of disabled students since the ADA was signed into law (*much more sensitive, more sensitive, no change, less sensitive, much less sensitive*)?

Most disabled students rated non-disabled students as more sensitive to their needs since the ADA became law, while a few disabled students indicated that they had experienced no change among non-disabled students.

The majority of disabled students rated both faculty and support staff as more sensitive
to their needs since the ADA became law in 1990. However, one disabled student indicated no changes among this group.

The majority of disabled students indicated that the administrators seemed more sensitive. Only one disabled student indicated no change among administrators. Finally, all of the disabled students indicated no change among other groups on campus.

7. How do you rate the disabled student service officer’s understanding of the needs of disabled students on your campus (excellent understanding, good, understanding, limited understanding, or no understanding)?

Disabled students expressed mixed views in their rating of the Disabled Students Officer on their campus. Two participants gave a rating of excellent, two other participants rated the officer as limited in understanding and one student rated the officer as having a good understanding of their needs.

8. What campus transportation systems (buses or other) are available for disabled students?

All respondents stated that campus buses were accessible to disabled students.

9a. Describe the positive aspects of the services for disabled students on your campus, and state the best services/facilities.

Disabled students gave the following responses in identifying some of the positive services on campus for disabled students: support and assistance provided by the Disability Support Services Officer; symposia held on campus to discuss the ADA and the various ways to improve the campus environment for disabled students; voluntary reader service available to visually impaired students; books available on tapes for visually impaired students; and interpreters available in class or at programs to assist deaf students.
9b. Describe the most negative aspects of your campus and the most negative experiences as a student with a disability that you have encountered since you have been a student at the university.

Overall, most disabled students stated their experiences have been quite positive at the University of Maryland. However, they reported the following negative experiences in the study: not enough readers available to assist visually impaired students; signs in the libraries are not at eye level for visually impaired students; shortage of staff available in the library to assist disabled students; reluctance of a professor to allow a student to be absent from class due to a disability; and a difficult time in getting note takers and interpreters for hearing impaired because of the shortage of staff.

9c. How can your campus environment be improved for you?

Disabled students cited several ways to improve campus environment: more campus-wide dialogue about the mandates of the ADA and the needs of disabled students; elevators installed in the student union to go to the top floor; improvement in the library facilities; and additional staff to assist disabled students.

Perceptions by the University of Maryland Disabled Student Services Officer

The findings of the study are based on the perceptions of disabled student services officer in response to the interview questions of the study and are summarized as follows:

2. What physical changes to *classrooms, residence halls, libraries, the student union, administration building, learning labs, computer facilities, sidewalks, and parking/ramps* have been made to make your campus more accessible to disabled students?

Dr. William Scales responded that physical changes had been made on campus since
the ADA was signed into law. Dr. Scales identified the following changes that have been made, as well as, areas where improvement is needed.

a. **Classrooms** - Automated doors, ramps, and elevators have been installed in buildings.

b. **Residence Halls** - Rooms have been enlarged for disabled students, particularly for those in wheel chairs.

c. **Campus Libraries** - Additional staff needs to be hired to assist disabled students; Braille has been placed on elevators for visually impaired students; text books are available on tapes; and computers are available with voice prompts.

d. **Student Union** - The building is accessible with automated doors and ramps; the bookstore is accessible to disabled students; and the elevator in the union moves to all floors.

e. **Administrative Facilities** - Currently the administrative building is not accessible to disabled students in wheel chairs. However, funds have been allocated for next year to make this building accessible.

f. **Learning Labs** - The learning labs were accessible prior to the ADA.

g. **Computer Facilities** - The computer facilities were also accessible prior to the ADA.

h. **Sidewalks** - Additional curb cuts have been made into sidewalks.

i. **Parking Facilities** - Parking facilities have been built with specific areas designated for disabled students.
2. **Have physical changes on your campus been directed to certain disabilities?**

Dr. Scales stated during the interview that he did not think specific physical changes had been directed at certain disabled students.

3. **For which disabilities have changes been made?**

Dr. Scales cited the following areas where changes have been made: interpreters have been provided to assist hearing impaired students; text books are available on tapes in the libraries for visually impaired students; note takers are provided to visually impaired students upon request; and campus transportation is available from door-to-door for disabled students with walking or moving impairments.

4. **Do you think changes are needed to make your campus more accessible to disabled students?**

Dr. Scales stated the following changes were needed to make the campus facilities more accessible: the student union building will be renovated next year to make it more accessible; and renovations will be made next year to the campus administration building. He also stated that two areas which did not require improvement were classrooms and residence halls.

5. **How sensitive has the university community been toward the needs of disabled students on your campus since the ADA was signed into law in 1990?**

Dr. Scales rated non-disabled students as more sensitive since the ADA became law in 1990. Disabled students rated faculty as much more sensitive to the needs of disabled students, while support staff were rated as more sensitive. The other groups, particularly Greek organizations, were rated as more sensitive to the needs of disabled students. Finally,
administrators were rated as more sensitive to the needs of disabled students since the ADA became law in 1990.

6. How would you rate the understanding of the disabled student services office to the needs of the disabled student population on your campus?

   Dr. Scales stated the office responded well to the needs of disabled students on campus.

7. Are the campus bus vehicles accessible to disabled students? If no, are there other transportation systems available to disabled students?

   Dr. Scales commented during the interview that the university provides buses that offer door-to-door service on campus for disabled students.

**Summary** Overall, according to Dr. Scales, the University of Maryland has met the needs of disabled students in most areas that were discussed. The only area where Dr. Scales differed from the students was the elevator in the Student Union. Whereas Dr. Scales said the elevator made all floors accessible, some students indicated the elevator did not go to the top floor and they were not able to attend some activities. Nevertheless, the Student Union will be renovated next year to improve accessibility.

The remainder of the study will discuss the findings from both disabled students and the Director of Disabled Students from George Washington University. Then, the implications of the study, the conclusion, limitations of the study and recommendations for further research will be discussed.
Physical changes on the George Washington University campus

Perceptions by disabled students  The findings of the study are based on the perceptions of disabled students in response to the interview questions of the study and are summarized as follows:

2. What physical changes to classrooms, residence halls, libraries, the student union, administration building, learning labs, computer facilities, sidewalks, and parking/ramps have been made to make your campus more accessible to disabled students?

Only two respondents indicated they did not notice any physical changes to the campus, however, most disabled students indicated during their interviews that physical changes had been made to make their campus more accessible. The changes are listed according to their appearance on the questionnaire:

a. Classrooms - Automated doors and ramps have been installed to buildings, with some classes moved to an accessible building when needed by disabled students.

b. Residence Halls - Shelves have been lowered in rooms to accommodate students in wheelchairs; improved lighting has been installed in the residence halls for visually impaired students; rails have been placed in bathrooms to make them more accessible; rooms have been enlarged to facilitate better movement for students in wheelchairs; and ramps and automated doors have been added to make building more accessible.

c. Campus Libraries - Ramps and automated doors with arm-reach openers have been installed in the entrances and exits to accommodate individuals in wheelchairs; and Braille signs have been installed on elevators to assist individuals who
are visually impaired.

**d. Student Union** - Most of the disabled students stated during their interviews that no additional changes have been made to the student union. Students commented that ramps and automated doors were in place when they arrived on campus. Most participants indicated that the bathrooms were wheelchair accessible. Only one student indicated that additional entrances and exits were installed in the cafeteria.

**e. Administrative Facilities** - Most disabled students indicated that no additional changes have been made to this building. However, one student said that ramps and automated doors have been installed.

**f. Learning Labs** - All of the respondents indicated no changes have been made to improve the accessibility of learning labs for disabled students.

**g. Computer Facilities** - Most of the participants said during their interviews that no changes have been made to the facilities. The computer facilities were accessible to them when they arrived on campus.

**h. Sidewalks** - The sidewalks have been made smoother for students in wheelchairs, and more curb cuts have been added and widened to make them more accessible for those in wheelchairs.

**i. Parking Facilities** - There was a lack of parking spaces available for disabled students. Non-disabled students have been using parking spaces designated for disabled students. Most disabled students noted that parking has been a recurring problem because the university is located in an urban area and is situated close to a major business district.
3. For which disabilities have physical changes on your campus been directed?

Most disabled students indicated during their interviews that the most significant changes around campus have occurred for students in wheel chairs. Changes frequently mentioned were: more automated doors were added to building; restroom facilities and the cafeteria were made more accessible for those in wheel chairs; and classes have been moved to an accessible building to accommodate students in wheel chairs.

4. What changes have been made to address the needs of hearing impaired, speaking impaired, seeing impaired, walking impaired, moving impaired, and other disabilities?

Disabled students commented that changes had been made to address the needs of the hearing impaired through interpreters provided in classrooms and at other events held on campus and by the renovation of dorm rooms to connect the doorbell to a blinking light to let someone deaf know that someone is at the door.

The majority of the students stated no particular changes had made to address the needs of the speaking impaired. Visually impaired students noted there were more Braille signs in buildings and that instructors allowed additional time for visually impaired students to complete assignments.

Changes made for walking or moving impaired students included: curbs cuts added to most sidewalks to make it easier for students in wheel chairs to get around; more automated doors and ramps added to older and newer buildings; and the moving of classes to an accessible building to accommodate students in wheel chairs.

5. What changes to classrooms, residence halls, libraries, student union, the administration building, learning labs, computer facilities, sidewalks, and parking/ramps are needed to make your campus facilities more accessible?

Typically, the disabled students expressed satisfaction concerning the progress that has
been made to improve their facilities. They indicated changes are needed to make the following facilities more accessible.

a. **Classrooms** - Better lighting needs to be installed in the classrooms for visually impaired students. While progress has been made to make campus buildings accessible, further work is still needed to make some buildings wheelchair accessible. The psychology building still remains inaccessible to wheel chairs.

b. **Residence Halls** - Most disabled students indicated that the university had done a good job of making residence halls more accessible to accommodate disabled students living there. According to them, no changes are needed in the residence halls.

c. **Campus Libraries** - Additional staff needs to be hired by the library to assist disabled students in need of assistance in gathering books or other reading materials. Further, additional staff is needed to assist disabled students in using the Xerox machines, particularly students in wheel chairs.

d. **Student Union** - Additional staff needs to be hired to assist disabled students, and all staff needs training to learn how to assist disabled students. The bookstore is not completely accessible to disabled students. Also, signs need to be more visible regarding the location of restrooms that are accessible to disabled students.

e. **Campus Administrative Facilities** - Most disabled students reported the campus administrative building is accessible for disabled students, particularly for those in wheel chairs.

f. **Learning Labs** - Most participants indicated no changes were needed to make the learning labs more accessible. One participant indicated, however, that charts and
graphs are often difficult to read because of the small print.

g. **Computer Facilities** - Computers need to have screens with displays large print for the visually impaired; additional staff needs to be hired to assist visually impaired students in reading the computer screens; and more computers need to be reserved for disabled students to use.

h. **Sidewalks** - All of the participants indicated no changes were needed to make the sidewalks more accessible.

i. **Parking Facilities** - A disabled student cited the need for more designated parking spaces closer to campus.

6. How would you rate the sensitivity of the following groups (non-disabled students, faculty, support staff, administrators, student affairs staff, and other groups) to the needs of disabled students since the ADA was signed into law (much more sensitive, more sensitive, no change, less sensitive, much less sensitive)?

   Most disabled students rated non-disabled students as more sensitive to their needs since the ADA was signed into law. A few disabled students indicated no change among this group.

   The majority of disabled students rated faculty members as more sensitive to their needs. Only one disabled student perceived no change among the attitude of faculty members. Most disabled students rated the support staff as more sensitive to their needs. Only one disabled student perceived no change among the support staff. Other groups, such as Greek organizations were rated as more sensitive to the needs of disabled students.

7. How do you rate the disabled student service officer's understanding of the needs of disabled students on your campus (excellent understanding, good, understanding, limited understanding, or no understanding)?

   Overall, disabled students gave a favorable rating to the Disabled Student Services
Officer on their campus. Four participants gave a rating of excellent and three participants rated the officer as having a good understanding of their needs.

8. What campus transportation systems *(buses or other)* are available for disabled students?

The respondents all said the university does not have a campus bus service available to students. Disabled students use public transportation provided by the Washington D.C. Metropolitan Area Transit Authority. The public transportation system provides bus and subway systems that are both accessible to disabled students.

9a. Describe the positive aspects of the services for disabled students on your campus, and state the best services/facilities.

Disabled students gave several responses in identifying some of the positive services on campus for disabled students. The Kurzweil Personal Reader has been extremely helpful to visually impaired students.

   The Disabled Student Services Office has assisted disabled students in dealing with their problems. It has sponsored several symposia to discuss the ADA and issues pertaining to disabled students, and it organizes a week long program each April to promote disabled student awareness. In addition, programs have been provided in residence halls to discuss issues and concerns pertaining to disabled students.

   The class relocator service has been beneficial to moving classes to an accessible building for disabled students in wheel chairs, and the proctor test program has allowed disabled students additional time for exams while being proctored.

9b. Describe the most negative aspects of your campus and the most negative experiences as a student with a disability that you have encountered since you have been a student at the university.

   Typically, most disabled students indicated that their overall experiences have been
more positive. However, they did comment on some negative experiences to be included in the study.

Negative statements included: some faculty members seemed insensitive toward allowing additional time to visually impaired students to complete exams; some faculty members seemed reluctant to allow visually impaired students the opportunity to take exams out of the classroom setting while being proctored; some non-disabled students seemed reluctant to interact with disabled students even in the classroom; and there is difficulty in trying to find restroom facilities accessible in the student union because of the lack of visible signs.

9c. How can your campus environment be improved for you?

Disabled students cited several ways to improve the campus environment. Having more dialogue on issues pertaining to disabled students among administrators and faculty members, and providing workshops and training for the entire university community on how to deal with students with various disabilities would be helpful. The university should continue to make more buildings accessible and better lighting in and around buildings on campus would be helpful. A campus shuttle bus should be provided to pick up students at nearby subway stations. To assist disabled students academically, additional staff such as readers, note takers and interpreters need to be hired.

Perceptions by the George Washington University Disabled Student Services Officer

The perceptions of the interview with Christy Willis, Director of Disabled Student Services, are summarized according to her responses to the questions of the study.

2. What physical changes to classrooms, residence halls, libraries, the student union,
administration building, learning labs, computer facilities, sidewalks, and parking/ramps have been made to make your campus more accessible to disabled students?

Ms. Willis stated the following physical changes that had been made on campus since the ADA was signed into law.

a. **Classrooms** - Automated doors and ramps installed; classes have been moved to an accessible building based on need;

b. **Residence Halls** - Renovations have been made to some residence halls. Renovations included larger rooms for students in wheel chairs and hand rails installed in bathrooms. A new residence hall is scheduled to be built next year to accommodate both disabled and non-disabled students.

c. **Campus Libraries** - Additional staff needs to be hired in the campus libraries to assist disabled students, particularly those in wheel chairs, who need books or other reading materials, or who need to use the Xerox machines.

d. **Student Union** - The book store will be renovated next year to make all floors accessible to disabled students.

e. **Campus Administrative Facilities** - The campus administration building is already accessible to disabled students. There are no plans to make any changes.

f. **Learning Labs** - The learning labs located in Stuart Hall are not accessible to disabled students. These labs are expected to be under renovation in the summer of 1995 to make them fully accessible to disabled students, particularly those using wheel chairs.
g. **Computer Facilities** - Computer facilities have been fully accessible, and the University has provided Kurzweil Personal Readers, computers that verbally talk to visually impaired students.

h. **Sidewalks** - Curb cuts have been installed in the sidewalks.

i. **Parking Facilities** - No changes are planned to provide any additional parking for disabled students.

3. For which disabilities have physical changes on your campus been directed?

Ms. Willis said during the interview that she did not think any physical changes had been directed any particular group of disabled students.

4. What changes have been made to address the needs of hearing impaired, speaking impaired, seeing impaired, walking impaired, moving impaired, and other disabilities?

Ms. Willis cited the following areas where changes have been made: TDD (Telecommunication Device for the Deaf) phones and interpreters are available to assist hearing impaired students; an escort service is available upon request for visually impaired students; and Braille signs have been placed on elevators for visually impaired students.

5. What changes to classrooms, residence halls, libraries, student union, the administration building, learning labs, computer facilities, sidewalks, and parking/ramps are needed to make your campus facilities more accessible?

Ms. Willis commented on the following areas that may require changes to improve accessibility: the student union building will be renovated during the following year to comply with ADA guidelines, and Stuart Hall, where the learning labs are located, will be renovated by the Summer of 1995.
Ms. Willis gave the following ratings to non-disabled groups since the ADA was signed into law. She commented:

"I would rate non-disabled students, faculty members, support staff, administrators, and student affairs staff as more sensitive. In addition, I would rate other groups on campus, such as Greek organizations, as more sensitive to the needs of disabled students."

8. What campus transportation systems (buses or other) are available for disabled students?

Ms. Willis commented that the university does not provide campus buses to their students. Disabled students, like other students, use public transportation.

Summary
Overall, according to Ms. Christy Willis, George Washington University has met the needs of disabled students in most areas that were discussed. The students agreed, however, they felt services to disabled students using the library could be improved by hiring additional staff.

Implications
This study was conducted as a pilot study to initiate research in obtaining information from disabled students on college campuses. The researcher believes that this study has provided the groundwork for identifying some of the critical issues and concerns affecting physically disabled students on college campuses. The lack of literature available on physically disabled students on college campuses makes this study important and a possible vehicle for future research.
This study has attempted to identify some of the areas where improvement is still needed to make these campuses more accessible for disabled students. In addition, this study has served a valuable purpose by listening to the voices of disabled students on the issues and concerns that they face daily on these campuses. Only by listening to the voices of disabled students has the researcher learned of some of the challenges they face in pursuing an education at institutions of higher learning.

Based on the literature, the enrollment of disabled students on college campuses is expected to continue to increase into the 21st century. The researcher strongly believes it will be necessary for institutions of higher learning to critically assess whether they are accommodating the needs of disabled students on their campuses. This is significantly important if institutions want to avoid costly litigation or the embarrassment of unfavorable media coverage. Institutions need to begin conducting a self evaluation of their own facilities to determine if they are in compliance of the law and serving the needs of disabled students on their campuses. One way to do this is through interviews with disabled students currently attending their institutions. This research undertaking was designed to conduct a preliminary investigation on the impact of the Americans with Disabilities Act of 1990 on two major urban university campuses and could serve as a guide for those institutions who may consider to complete a self study.

As college campuses are becoming more technologically advanced in their ability to serve the needs of non disabled students, it will become important, even imperative, for such institutions to allocate funds to provide the same services to disabled students. It will also be important for provide training for university staff so that they can assist disabled students in using adaptive technologies.
Additionally, in order to create a barrier-free environment, institutions of higher learning must not only make their buildings accessible, but they must also work to change the negative attitudes held by non-disabled students. Attitudes are a central element in the success of disabled students in postsecondary education. The attitudes of non-disabled students, faculty and administrators can have a profound impact on how successfully disabled students integrate into the academic community. This study has attempted to focus on how disabled students perceive the attitudes on non-disabled groups since the ADA became law.

Based upon the results of this study, the researcher concludes that institutions of higher learning should conduct surveys by interviewing incoming disabled students at the beginning and conclusion of the academic year to determine if their particular needs have been met. Furthermore, these surveys could be used to determine areas where improvement is still needed to create a barrier-free environment for disabled students now and in the future. Even though a study of this nature may not be able to resolve all the immediate concerns, hopefully it can serve as a vehicle to remedy some of the long-term problems facing disabled students on college campuses.

Conclusions

Disabled students from the two campuses expressed satisfaction with the changes made to make their campus more accessible. The disabled students and the Directors of Disabled Student Services from the two campuses indicated the most significant changes that have taken place on their campuses since the ADA involved improving the accessibility for students in wheel chairs, although changes have also been directed at improving the quality of life for other students with different disabilities.
Changes have been made on both campuses to make buildings more accessible by installing ramps and automated doors to buildings to make it easier for disabled students to enter and exit the buildings. In addition, several interior renovations have been made to make buildings more accessible for disabled students included installing automated doors, ramps and elevators. In campus residences, such renovations as larger rooms with shelves at arm-reach level and bathrooms with hand rails have made facilities more accessible for those with wheelchair disabilities, while blinking lights connected to sound systems have been made for the hearing impaired.

However, in spite of the progress made, the disabled students from both campuses have indicated that further changes are needed to accommodate and serve the needs of disabled students now and in the future. As the population of disabled students continues to increase, it will become more critical for institutions to hire additional staff to assist them. Both universities have made attempts to increase the general campus awareness of disabled students by sponsoring speakers and having symposia to discuss issues pertaining to disabled students. These events are open to the entire campus community. In addition, to accommodate disabled students now and in the future, it will be crucial for institutions to hire individuals who are sensitive to the needs of disabled students and to provide them with appropriate training so they can assist these students.

The most significant criticism voiced by students from both campuses concerned the shortage of staff to assist disabled students. For example, in classrooms additional note takers and interpreters are needed to assist hearing impaired students. Hiring additional part-time staff or seeking volunteers willing to be trained would help to assist disabled students on both campuses and would fit within their budgets.
Most disabled students and the Directors of Disabled Student Services agreed that both universities had done a good job in making residence halls more accessible to disabled students. Changes have included enlarged rooms with rails installed in bathroom facilities to accommodate students in wheel chairs. Other changes included relocating installed shelves to a level within arm reach for students in wheel chairs.

In spite of the changes that have been made to make the campuses more accessible, disabled students continue to echo the sentiment for more staff to be hired to assist disabled students. Particularly in the libraries on both campuses, the students complained of the shortage of staff available to assist disabled students. Disabled students also complained that signs in the library were either too high or the print too small. The addition of larger signs and more staff would be an indication of positive support for the disabled students both now and in the future.

Disabled students from both campuses complained the student union was not fully accessible to them. At the University of Maryland, some disabled students complained the top floor of the union was not accessible by elevator. This assertion contradicts the statement made by the Director of Disabled Student Services, Dr. Scales. Therefore, no conclusion could be reached on this matter. However, Dr. Scales said plans are in place for the student union to be renovated during 1995-96. Some disabled students at George Washington University stated the bookstore in the union was not accessible to them. Ms. Willis informed the researcher the bookstore will be renovated in 1995-96 to accommodate disabled students.

The campus administration building at George Washington University was reported as
accessible to disabled students. However, disabled students from the University of Maryland indicated their building was not accessible to them. Specifically, they said the building lacked automated doors and ramps. Dr. Scales supported this assertion and acknowledged that the building is not accessible to disabled students. Further, he said funds have been allocated to have this building renovated and fully accessible during 1995-96.

Learning labs facilities on both campuses were reported as accessible to disabled students. However, Mr. Willis, Director of Disabled Students Services, contradicted the assertion made by disabled students from George Washington University. She commented that learning lab facilities in Stuart Hall were not accessible to disabled students. Perhaps this contradiction exists because Ms. Willis stated during her interview that tutors from Stuart Hall were willing to meet with disabled students at a time and place convenient for them. Renovations are expected during the 1995-96 school year to make these facilities fully accessible to disabled students.

Concerning the computer facilities on both campuses, disabled students and the Director of Disabled Students Services acknowledged these facilities had been accessible prior to the ADA.

Disabled students indicated that the sidewalks on campus had been made accessible for wheel chairs. Disabled students did not complain about any campus sidewalks being inaccessible.

Parking was a problem. Because these two universities were located in urban metropolitan areas, additional parking facilities would be helpful to accommodate disabled
students. Typically, disabled students complained of the lack of spaces available because their spaces were often used by other, non-disabled drivers. Careful monitoring of these facilities would be helpful to eliminate unlawful use of parking spaces designated for disabled students.

Respondents generally agreed, however, that more work needs to be done to ensure on-going dialogue across the university community to increase awareness of the complex needs of disabled students on campus. To improve awareness, the respondents suggested that faculty and administrators should be encouraged to attend workshops and training sessions where they might have the opportunity to offer their support and advice on ways to address issues pertaining to disabled students.

As more disabled students continue to pursue a higher education, universities will need to be more concerned about making their campus more accessible and committed to foster a learning environment that is comfortable for disabled students. In addition, universities will need to hire faculty members and administrators in key positions to provide diversity, and to challenge the negative perceptions and prejudices held by some individuals on their campuses. While most universities are facing serious budgeting constraints, another recommendation would be for universities to hire additional part-time employees or seek volunteers who are willing to be trained in assisting disabled students on college campuses. Finally, universities should consider conducting self evaluations of their programs and services to find out if they are meeting the needs of disabled students, as well as, developing a plan for implementing improvement.

Based upon the results of the study, the researcher concludes that disabled students
from both the University of Maryland and the George Washington University perceive that changes have been made to make buildings more accessible to disabled students on their campuses since the Americans with Disabilities Act became law in 1990. These two universities have made progress in providing accessible buildings for classes and residence housing that meets the needs of students with disabilities. In addition the physical environment of both campuses has been made more accessible for students with disabilities by the installation of curb cuts and sidewalks that are accessible for wheel chairs.

The disabled students perceived that non-disabled groups, faculty members, administrators, student affairs staff and other students are now more aware of the ADA and sensitive to their particular needs. However, students from both campuses have indicated that further changes are needed to accommodate and serve the needs of disabled students now and in the future.

**Limitations of the Study**

The study has the following limitations:

1. The sample size was small because only a limited number of students with physical disabilities from both campuses were willing to participate in the study.
2. Disabled student populations may vary among public and private institutions.
3. The ADA is still a relatively new legislation. There has been insufficient time for institutions of higher learning to make needed changes to be in compliance.
4. This researcher’s analysis was limited by the information provided by the universities studied.
5. There was a lack of literature available on physically disabled students on college campuses.

6. Each student had different limitations due to his or her disability; thus, it was necessary to consider each student's individual limitation when structuring the interviews.

7. Due to the various disabilities of each student and his or her class scheduling, it was not feasible for the disabled students to be interviewed in person.

8. Because the researcher was interviewing students who were hearing impaired, visually impaired, and mobility impaired with various limitations, the researcher had to limit each interview to 30 minutes and no more than 10 - 15 questions per interview.

9. The researcher was not able to access key documents regarding the self studies that had been conducted on each campus.

Recommendations for Further Research

Much needs to be learned about the effect of the Americans with Disabilities Act on institutions of higher learning. Disabled students from both universities reported during their interviews that changes have occurred on their campuses to improve accessibility. However, some disabled students have indicated that they still face difficulties in pursuing a higher education.

One disabled student commented: “As a hearing impaired student, I have failed some classes because I was unable to get a note taker or an interpreter when needed. Because of the shortage of staff available, it will probably take longer than four to five years to earn my degree.”
Another disabled student said: "As a visually impaired student, I need additional time to complete my assignments and sometimes professors seem reluctant to allow it. As a result, some of my assignments have been left incomplete."

A third student shared: "I am visually impaired and some students have a tendency to avoid interacting with me in class as much as they do with other students."

In an effort to create a barrier-free environment, future research should address these concerns. As an initial study of two urban university campuses, the findings of the present study, led the researcher to make the following recommendations for further research. Based on this research, extensive study should be conducted to assess the following:

1. The perceptions of learning disabled students on the changes that have occurred on their respective campuses since the ADA was signed into law;

2. The perceptions of non-disabled students about disabled students since the ADA was signed into law;

3. The impact of the ADA on the hiring of faculty members, staff, and administrators;

4. The graduation rate of disabled students on campus since the ADA, in comparison to the rate prior to the ADA;

5. The graduation rate of disabled students on campus since the ADA, in comparison to the rate of non-disabled students;

6. The attitude of faculty and administrators toward disabled students since the ADA became law;

7. The lives of disabled students on college campuses since the ADA based upon their
different types of disabilities; and

8. The types of accommodations that are provided to disabled faculty member and administrators since the ADA became law.

While the researcher conducted this study as a pilot study for future research on the perceptions of physically disabled students at the University of Maryland and George Washington University toward the changes made since the ADA, this study did not focus on the accessibility of these campuses prior to the ADA. According to disabled students and the Disabled Student Services Officer on both campuses, progress has occurred to make these universities more accessible. However, it would be interesting to note the results of a study to determine what changes, if any, had occurred on these campuses prior to the ADA. This could be carried out by requesting a list of interested participants from the Director of Disabled Student Services who were on campus prior to the ADA and surveying them. Additionally, a follow-up study should be conducted to verify if these institutions have implemented any changes since this pilot study, to make campus facilities more accessible.

Based on the results of the present study, this researcher recommends that, if college campuses are to create a barrier-free environment for disabled students, they must begin by first examining their administrative policies, practices and services provided to disabled students. In addition, institutions should examine their facilities to determine if and how accessible they are accessible to disabled students. Furthermore, institutions of higher learning need to examine the attitudes of non-disabled students, faculty, administrators, and other student services personnel. The attitudes of these individuals can have a profound impact on
the success or failure of the disabled students on their campuses.

Increasing understanding should be considered as a possible means of decreasing negative attitudes and prejudice against students with disabilities. This researcher strongly recommends that institutions educate and/or provide appropriate training to all personnel in the university community on issues and concerns affecting disabled students. Additionally, training should include scenarios or role-playing to allow non-disabled individuals to experience what it may be like to be disabled so these individuals can focus on problem-solving, not only to gain an understanding of some of the challenges faced daily by disabled students but also to provide some meaningful suggestions on how to create a barrier-free environment for all disabled individuals.

While this study may not answer all of the questions and concerns facing disabled students on college campuses, hopefully, it will encourage institutions to examine their own facilities, programs, practices and services to determine if they are meeting the needs of disabled students. As the enrollment of disabled students on college campuses continues to increase into the 21st century, it will become more imperative that the entire university community be educated and trained to provide equal access to disabled students, not only to ensure compliance to the Americans with Disabilities Act, but also to provide equal opportunity for all individuals to earn a higher education degree.
REFERENCES


ACKNOWLEDGMENTS

I am grateful to so many people for their support throughout my studies leading to the culmination of my doctoral degree. I am especially thankful to my major professor, Dr. Larry Ebbers, for his guidance and support throughout my program of studies. I am grateful for the support of my committee members: Dr. George Jackson, for my assistantship; Dr. Richard Warren, for his guidance in statistics; Dr. Dan Robinson, for his belief in me; and Dr. Tom Walsh, for his interest in my area of research; and Dr. Kniker, for serving on my initial committee. Finally, Dr. Trevor Howe, thank you for stepping in the eleventh hour for my final defense.

To my family, especially my mother, Ruby Williams, for her belief in me to reach toward my dreams. She has always reminded me to "Never give up." To my father, Samuel Williams, although you are not here to see me, I feel your presence from above. "Thanks, dad!" To my grandmother, Helen Whiteside, thank you for your love, prayers and confidence in me. To my brothers: Sam, Jr., Anthony who is not here but will always be remembered, Dwight, and Leon—thank you all for your support and encouragement.

Several people have made lasting contributions to my academic development and emotional well-being. Mrs. Aurelia Sutton, my "mother" on the job who always supported my endeavors and reminded to finish. Clementine Jackson, my dear friend who was always willing to listen to me. Mrs. Mineta Greene Clemmens, a friend who has encouraged me through the whole process. Mr. Edward Alston, my co-worker and friend. Mr. Lawrence Parker, a personal friend who has always been there for me. Special thanks to Mrs. Dorothy
Ashe who has been my "second" mother. Also, thanks to my good friends Mr. Roosevelt Hatcher, Mr. Chuck Hicks, Mrs. Ingrid Gaven Parks, and Ms. Barbara Brown.

To my Iowa State friends: Dr. Mike Sutton, Dr. Pearl Jefferson, Dr. Vera Lang, Dr. Anna Marie Evans, and Dr. Dava James—we came through the program together and I will always think of y'all as lifelong friends. I especially would like to remember my fraternity brothers of Phi Beta Sigma, Inc., for their support while I was at ISU. To my best friend and roommate, Curtis Ashe, I remember the many good and hard times we spent together.

Thank you Dr. Laura Fleet and Dr. Richard Wright from Howard University. Your support and assistance provided me with several views to consider.

I am especially grateful to Dr. Scales, Disabilities Support Services Director, at the University of Maryland and Ms. Christy Willis, Disabled Student Services Director, at George Washington University. This study was made possible through your effort and cooperation.

To Pat Hahn, my editor, I couldn’t have made it without you. Thank you for your careful attention to detail. Your knowledge of the thesis format helped me to put this work together in its final form.

Finally, and most importantly, I thank God for giving me the ability and talent, and the wisdom to use them to reach for His will in my life.
APPENDIX A: CORRESPONDENCE
October 19, 1994

Ms. Christy Willis
Director of Disabled Student Services
George Washington University
2121 I Street, NW
Rice Hall
Suite 401
Washington, DC 20052

Dear Ms. Willis:

Thank you for agreeing to assist me with my dissertation research: Impact of the Americans with Disabilities Act: Perceptions of select individuals at two major urban universities.

Your institution was selected to participate in this study because George Washington University has one of the largest disabled student populations in the Washington, D.C. metropolitan area. We are seeking your assistance in identifying 25 disabled students on your campus with various disabilities to participate in an interview. The interview will take approximately 15-20 minutes to complete and will remain confidential. We would appreciate your assistance in providing a list of disabled students, telephone numbers and the dates and times that these students may be reached. I may be reached for questions by phone 202.663.4885 (daytime) or 202.371.2030 (after 4:30 p.m.). Participation in this study is voluntary, but your cooperation in this project will continue your tradition of support and innovation in the field of higher education.

Thank you for assisting us with our study.

Sincerely,

Maurice L. Williams
Doctoral Student

Dr. Larry Ebbers
Major Professor
Iowa State University
Ames, IA
Dear Members of the Dissertation Research Committee:

I am delighted to cooperate with Maurice Williams' dissertation research: The Americans with Disabilities Act of 1990: Changes at two major universities as a result of this act.

Please feel free to contact me at (202) 994-8250 if you have any questions. Thank you.

Sincerely,

[Signature]

Christy Willis, Director
Disabled Student Services
October 19, 1994

Dr. William Scales  
Disability Support Services  
The University of Maryland  
Shoemaker Building  
Room 0126  
College Park, MD 20742

Dear Dr. Scales:

Thank you for agreeing to assist me with my dissertation research: Impact of the Americans with Disabilities Act of 1990: Perception of select individuals at two major urban universities.

Your institution was selected to participate in this study because The University of Maryland has one of the largest disabled student populations in the Washington, D.C. metropolitan area. We are seeking your assistance in identifying 25 disabled students on your campus with various disabilities to participate in an interview. The interview will take approximately 15-20 minutes to complete and will remain confidential. We would appreciate your assistance in providing a list of disabled students, telephone numbers and the dates and times that these students maybe reached. I may be reached for questions by phone 202.663.4885 (daytime) or 202.371.2030 (after 4:30 p.m.). Participation in this study is voluntary, but your cooperation in this project will continue your tradition of support and innovation in the field of higher education.

Thank you for assisting us with our study.

Sincerely,

Maurice L. Williams  
Doctoral Student  

Dr. Larry Ebbers  
Major Professor  
Iowa State University  
Ames, IA
December 1, 1994

Dear Mr. Williams;

The purpose of this letter is to confirm the willingness of the University of Maryland and the Disability Support Service to participate in data collection for your study. Your study has cleared our Human Subjects Review Committee.

Should you desire additional information, please feel free to contact us.

Sincerely,

Dr. William Scales
Director
Disability Support Service
October 26, 1994

Dear Student:

We are currently conducting a study of the Impact of the Americans with Disability Act of 1990: Perceptions of select individuals at two major urban universities. Your institution has been selected to participate in this study because The University of Maryland has one of the largest disabled student populations in the Washington, DC metropolitan area.

We are requesting your participation in this study. This study will allow you a unique opportunity to share your experiences at the University of Maryland as a disabled student.

This study will be qualitative in nature and data will be primarily collected through interviews with the research participants. The data will be collected and used in a dissertation. The interview will take approximately 15-20 minutes to complete and will remain confidential.

To confirm your interest in participating in this study, please complete the bottom portion of this letter. Please be advise that your participation in this study is voluntary. I may be reached for questions by phone at 202.663.4885 (daytime) or 202.371.2030 (after 4:30p.m.).

Thank you for assisting us with our study.

Sincerely,

Maurice L. Williams
Doctoral Student
Dr. Larry Ebbers
Major Professor
Iowa State University
Ames, Iowa

Name: ________________________________________
Telephone Number: ______________________________
Day & Time To Contact You: ______________________
APPENDIX B. HUMAN SUBJECTS APPROVAL FORMS
Information for Review of Research Involving Human Subjects
Iowa State University
(Please type and use the attached instructions for completing this form)
The Americans with Disabilities Act of 1990: Changes at two
major universities as a result of this act

1. Title of Project

2. I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are
protected. I will report any adverse reactions to the committee. Additions to or changes in research procedures after the
project has been approved will be submitted to the committee for review. I agree to request renewal of approval for any project
continuing more than one year.

Maurice L. Williams
Typed Name of Principal Investigator

3. Signatures of other investigators

4. Principal Investigator(s) (check all that apply)
☐ Faculty ☐ Staff ☒ Graduate Student ☐ Undergraduate Student

5. Project (check all that apply)
☐ Research ☒ Thesis or dissertation ☐ Class project ☐ Independent Study (490, 590, Honors project)

6. Number of subjects (complete all that apply)
☐ # Adults, non-students ☐ # ISU student
☐ # minors under 14 ☐ # minors 14 - 17
☐ 25-Disabled Students GMU ☐ 25-Disabled Students U. W.
☐ 50 other (explain)

7. Brief description of proposed research involving human subjects: (See instructions, Item 7. Use an additional page if
needed.)
The study will be conducted to determine if any changes have taken place at a public
and private university to make them more accessible for disabled students as a
result of the Americans with Disabilities Act of 1990. The study will examine for
changes in the following ways: (1) alteration of buildings, (2) classrooms, and
(3) residence halls.

The method of data collection will be by conducting telephone interviews with a
sampling of disabled students on two university campuses. The two universities that
have chosen to study are the University of Maryland and the George Washington University.
Currently, these institutions have the largest disabled student population in the
Washington, D.C. metropolitan area. The Director of Disabled Student Services on
campuses have agreed to help me in identifying disabled students and their
telephone numbers that maybe willing to participate in this study.

(Please do not send research, thesis, or dissertation proposals.)

8. Informed Consent: ☐ Signed informed consent will be obtained. (Attach a copy of your form.)
☒ Modified informed consent will be obtained. (See instructions, item 8.)
☐ Not applicable to this project.
9. **Confidentiality of Data**: Describe below the methods to be used to ensure the confidentiality of data obtained. (See instructions, item 9.)

10. **What risks or discomfort will be part of the study?** Will subjects in the research be placed at risk or incur discomfort? Describe any risks to the subjects and precautions that will be taken to minimize them. (The concept of risk goes beyond physical risk and includes risks to subjects' dignity and self-respect as well as psychological or emotional risk. See instructions, item 10.)

    The subjects participating in the study will not be at any risk or discomfort.

11. **CHECK ALL** of the following that apply to your research:

    - A. Medical clearance necessary before subjects can participate
    - B. Samples (blood, tissue, etc.) from subjects
    - C. Administration of substances (foods, drugs, etc.) to subjects
    - D. Physical exercise or conditioning for subjects
    - E. Deception of subjects
    - F. Subjects under 14 years of age and/or Subjects 14 - 17 years of age
    - G. Subjects in institutions (nursing homes, prisons, etc.)
    - H. Research must be approved by another institution or agency (Attach letters of approval)

    If you checked any of the items in 11, please complete the following in the space below (include any attachments):

    **Items A - D** Describe the procedures and note the safety precautions being taken.

    **Item E** Describe how subjects will be deceived; justify the deception; indicate the debriefing procedure, including the timing and information to be presented to subjects.

    **Item F** For subjects under the age of 14, indicate how informed consent from parents or legally authorized representatives as well as from subjects will be obtained.

    **Items G & H** Specify the agency or institution that must approve the project. If subjects in any outside agency or institution are involved, approval must be obtained prior to beginning the research, and the letter of approval should be filed.
Checklist for Attachments and Time Schedule

The following are attached (please check):

12. [ ] Letter or written statement to subjects indicating clearly:
   a) purpose of the research
   b) the use of any identifier codes (names, #s), how they will be used, and when they will be
      removed (see Item 17)
   c) an estimate of time needed for participation in the research and the place
   d) if applicable, location of the research activity
   e) how you will ensure confidentiality
   f) in a longitudinal study, note when and how you will contact subjects later
   g) participation is voluntary; nonparticipation will not affect evaluations of the subject

13. [ ] Consent form (if applicable)

14. [ ] Letter of approval for research from cooperating organizations or institutions (if applicable)

15. [ ] Data-gathering instruments

16. Anticipated dates for contact with subjects:
   First Contact          Last Contact
   8/10/94                12/10/94
   Month/Day/Year         Month/Day/Year

17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual
    tapes will be erased:  

18. Signature of Departmental Executive Officer     Date     Department or Administrative Unit
    
19. Decision of the University Human Subjects Review Committee:
    [ ] Project Approved         [ ] Project Not Approved         [ ] No Action Required

   Patricia M. Keith          11-4-94
   Name of Committee Chairperson       Date     Signature of Committee Chairperson

- GC: 1/90
PRINCIPAL INVESTIGATOR: Maurice L. Williams

PROJECT TITLE: Americans with Disabilities Act of 1990

PROJECT APPROVED: X NOT APPROVED: ___ EXEMPT: ___

DATE: 10/31/94

EXEMPTION NUMBER:

Human Subjects Committee Chair
APPENDIX C: INTERVIEW QUESTIONS
Interview Questions

Each research participant was asked to respond to a series of ten questions developed by the researcher. Telephone interviews were conducted with twenty-five disabled students on each of the two campuses. Interview questions were designed to elicit information to determine from disabled students specific changes that have been made to make their campus accessible since the Americans with Disabilities Act of 1990 became law. The following interview questions were asked of each participant.

1. How long have you been on campus? ______ years

2. Since you have been on campus, have any physical changes been made to make your campus more accessible to disabled students?

   _____ Yes     _____ No     _____ Don't Know

If yes, have changes been made to the following facilities to make your campus more accessible to disabled students? Please specify the changes.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Specify change(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Classrooms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Residence Halls</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Libraries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Student Union/Student Center</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Administration Building</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learning labs for Disabled Students</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Computer Facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sidewalks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parking/Parking Ramps</td>
</tr>
</tbody>
</table>
3. Have physical changes on your campus been directed at certain disabilities?

   _____ Yes   _____ No   _____ Don't know

   If yes, please specify which disability. ________________________

4. Have changes been made to address the needs of the following? If yes, please specify the change(s).

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Specific Change(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Hearing Impaired</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Speaking Impaired</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Seeing Impaired</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Walking Impaired</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moving Impaired</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other</td>
</tr>
</tbody>
</table>

5. Do you believe changes are needed to make your campus facilities more accessible? If yes, please specify what changes are needed?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Specify needed change(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Classrooms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Residence Halls</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Libraries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Student Union/ Student Center</td>
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<tr>
<td></td>
<td></td>
<td>Administration Building</td>
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<tr>
<td></td>
<td></td>
<td>Learning labs for Disabled Students</td>
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<td>Computer Facilities</td>
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<td></td>
<td></td>
<td>Sidewalks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parking/Parking Ramps</td>
</tr>
</tbody>
</table>
6. For each of the following groups, how would you rate their sensitivity to the needs of disabled students since the ADA was signed into law? Please rate accordingly.

<table>
<thead>
<tr>
<th>Group</th>
<th>Much More Sensitive</th>
<th>More Sensitive</th>
<th>No Change</th>
<th>Less Sensitive</th>
<th>Much Less Sensitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Disabled Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Support Staff</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Administrators</td>
<td></td>
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</tr>
<tr>
<td>Student Affairs Staff</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Other Groups/please specify</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Does the disabled student services officer on your campus understand the needs of the disabled student population? Please state whether it is:

Excellent Understanding Good Understanding Limited Understanding No Understanding

8. Are the campus buses accessible to disabled students?

_____ Yes   _____ No   _____ Don't Know

If no, are there other transportation systems available for disabled students?
9A. Please describe the positive aspects of the service for disabled students on your campus. Also, please state what are the best services/facilities.

9B. Please describe the most negative aspects of your campus and the most negative experiences as a student with a disability that you have encountered since you have been a student at the university.

9C. How can your campus environment be improved for you?

10. Could we collect some demographic data to analyze?
   
   _____ Yes  _____ No

(Proceed if yes)

   _____ Male  _____ Female

   Age:
   _____ Under 20
   _____ 20-24
   _____ over 24

   ________________ Dis ability

   _____ Year in College ________________ Classification

   ________________ Major
APPENDIX D: FOLLOW-UP QUESTIONNAIRE FOR THE DISABILITY SUPPORT SERVICE AT THE UNIVERSITY OF MARYLAND
FOLLOW-UP QUESTIONNAIRE FOR THE DISABILITY SUPPORT SERVICE (DSS)

We appreciate your response even if you only visited the DSS office once, or if you are still using our services.

Please respond to each item - mark an X for your degree of agreement or disagreement

<table>
<thead>
<tr>
<th>Which of the following best describes your disability?</th>
</tr>
</thead>
<tbody>
<tr>
<td>d. Physical Disability</td>
</tr>
</tbody>
</table>

Circle the appropriate number for the following questions:

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Agree</th>
<th>Does not apply to me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1. IMPRESSION OF YOUR FIRST USE OF THE DSS SERVICE:

<table>
<thead>
<tr>
<th>a. Understood my needs</th>
<th>b. Helped me work on my needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

2. SUBSEQUENT CONTACTS WITH DSS:

<table>
<thead>
<tr>
<th>a. Understood my needs</th>
<th>b. Helped me work on my needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

3. SATISFACTION AND IMPACT:

<table>
<thead>
<tr>
<th>a. I am satisfied with the results of my DSS service</th>
<th>b. My work with DSS was important in my continued enrollment here (vs. withdrawing, dropping out, or transferring)</th>
<th>c. It is important for this University to have DSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

4. WHEN I COMPARE MY SITUATION NOW WITH WHEN I SOUGHT DSS ASSISTANCE, I NOTICE IMPROVEMENT IN:

<table>
<thead>
<tr>
<th>a. My level of concentration</th>
<th>b. Efficiency in my study methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>
c. My grades earned  
| 1 | 2 | 3 | 4 | 5 | 6 |

d. My ability to access the UMCP campus  
| 1 | 2 | 3 | 4 | 5 | 6 |

e. My ability to request specific accommodations from my instructors  
| 1 | 2 | 3 | 4 | 5 | 6 |

f. My ability to plan an educational program to meet my needs  
| 1 | 2 | 3 | 4 | 5 | 6 |

g. My interaction with other students (or people, in general)  
| 1 | 2 | 3 | 4 | 5 | 6 |

h. My sense of belonging to the University Community  
| 1 | 2 | 3 | 4 | 5 | 6 |

i. Other (please describe)  
| 1 | 2 | 3 | 4 | 5 | 6 |

5. FREQUENCY OF DSS CONTACT:

Approximately how frequently have you used the services of DSS  
a. During the past academic year:  
| 0 | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | 25 | More than 25 |

b. Since my enrollment at UMCP:  
| 0 | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | 25 | More than 25 |

6. QUALITY OF SERVICE RECEIVED:

At DSS, most clientele are students with disabilities seeking one or more of the services listed below. Please rate each service you have used according to the scale provided.

<table>
<thead>
<tr>
<th>Service</th>
<th>Excellent</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
<th>Does not apply to me</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Interpreting Services</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>b. Reading</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>c. Test Administration Services</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>d. Pre-Registration Services</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>e. Note-Taking Service</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>f. Counseling</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>g. Assistance with Physical Accessibility (Room changes and classroom accommodations)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>h. Information and/or Referral</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>i. ParaTransit (Shuttlebus) Service</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>j. Consultation with Faculty on Academic Accommodations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
7. PRESENT STATUS (Please be as specific as possible)

a. Education: What major are you now in or planning for?

b. Career: What job or career are you now planning for?

8. SUGGESTIONS