

## 21<sup>st</sup> Century Distance Education Initiatives for Students With Disabilities<sup>1</sup>

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This paper explores the implications of the growing distance education movement for people with disabilities. Technological advancement has broadened educational, employment and training opportunities for students and adults with disabilities and nontraditional students via distance education. Advancing knowledge of accessible technology and universal design concepts has coincided with the distance education movement, and with federal mandates for accessible technology. Distance education rapidly is becoming a prized tool of K-12, higher education, and vocational training. Moreover, distance education is proving to be a moneymaker for educational programs and the information and communications technology firms that serve them. However, studies of website accessibility and applications designed to deliver online learning question whether these tools permit equal and effective participation by people with varying disabilities.

### Distance Education and Learners With Disabilities

The unique selling point of distance learning programs is the flexibility they provide to potential students in terms of schedules and physical location. Distance education programs provided via mail, telephone, television, and fax services have been in existence for decades. Today, distance learning courses utilize a range of technologies and varying degrees of access to course materials, interaction with instructors and peers, and tools to complete course requirements. K-12 and higher education recognize the inherent benefits of online learning for “promoting 21st century skills and global citizenship.” The 2006 United Nations Global Audit of Web Accessibility, in part, concluded:

The Internet is the most vital tool to emerge in the last 50 years for enhancing the lives of people with disabilities. It offers unprecedented access to information and services, overcoming many of the obstacles that people with disabilities previously experienced. It should be easier to shop online than choose clothes from a retail outlet that you can't see. It ought to be easier to bank online than manoeuvre a wheelchair up the steps to the bank building.

For the more than 20 million working age adults with disabilities, 15 million children with disabilities, and the millions of students attending any one of the 10,793 public schools (11.9% of all) failing to make adequate yearly progress for two consecutive years, distance education may offer hope that an affordable alternative is available to facilitate their academic, technical, or professional achievement necessary to live independent and self-determined lives. In 2001, 48% of U.S. two- and four-year colleges and universities received requests for accommodations by persons with disabilities seeking to take their

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distance education courses. Larger and public institutions received more requests than medium/smaller and private institutions, respectively.

Much like school choice and voucher programs (i.e., other alternative educational tools with rising popularity), distance education is susceptible to significant criticisms and drawbacks. Both present concern with (a) inconsistent or unproven effectiveness and accountability, (b) intentional or inadvertent “creaming” (i.e., selection of students), (c) the absence of teacher preparation and professional development standards for the unique environments of distance education, and (d) the national shortage of highly trained special education teachers.

Barriers to the accessibility of technologies are caused largely by three categories of problems: technical, design, and intrapersonal barriers. Technical barriers occur because of either limitations in hardware (e.g., lack of computer memory) or because of a user’s lack of knowledge about a technology’s usage (e.g., no alternative strategies when an application does not work as expected). Design barriers occur when applications lack design characteristics that will make information accessible. For example, the most common barrier to university web pages is the lack of alternative text for images. Intrapersonal barriers occur when the learning environment does not meet the needs of individual learner characteristics. For example, a two-hour web conference may tax the stamina of a person with chronic fatigue syndrome.

### **Disability Law and Policy**

A key goal of the Americans with Disabilities Act of 1990 (ADA) was to remove the physical and social barriers to equal opportunity for individuals with disabilities and to ensure their full integration throughout society. Barriers take many forms and impede not merely physical access (e.g., a hotel room or public restroom), but access to meaningful communication (e.g., telephone, television, email, or lecture), participation (e.g., in a classroom, board room, or parent-teacher or community association meeting), and benefit of programs and services (e.g., enrolling for social security benefits, healthcare coverage, or university courses). ADA Titles II and III, which apply to public and private post-secondary education and training schools, respectively, have obligations to remove these barriers.

ADA Title II requires state and local governments to ensure they do not exclude qualified persons with disabilities from their programs, services, and benefits by reason of disability. In *Martin v. Metropolitan Atlanta Rapid Transit Authority* (2002), a federal district court concluded that bus and transit service scheduling information on the transit authority website must be accessible to persons who are blind. When a student with a disability meets the essential eligibility requirements for participation in state or local universities, colleges and trade schools, the school cannot turn the student away. Moreover, the Office for Civil Rights in the U.S. Department of Education (1997) determined that Title II:

. . . requires a public college to take appropriate steps to ensure that communications with persons with disabilities ‘are as effective as communications with others.’  
 ‘[C]ommunication’ in this context means the transfer of information, including (but not limited to) the verbal presentation of a lecture, the printed text of a book, and the resources of the Internet.

Public colleges and universities have an affirmative duty to (a) make reasonable modifications to policies, practices, and procedures, (b) administer services in the most integrated setting appropriate, (c) remove architectural, communication, and transportation barriers, and (d) provide necessary auxiliary aids and services to ensure students with disabilities have opportunities equal to that of their peers without disabilities to receive services and participate in programs and activities. For instance, a state college needs to provide alternative (e.g., text to speech, Braille) formats of course syllabi, applications, school rules, course directories, and signage to ensure that a student who is blind can enjoy, comply with, and

contribute to the college's programs and services. The Title II entity, however, does not have to make modifications that fundamentally alter the nature of its programs and services.

Private colleges, universities, trade schools, and businesses may not deny a student with a disability the full and equal enjoyment of their services and facilities on the basis of disability. ADA title III requires public accommodations (e.g., cinemas, department stores, restaurants, and other entities with operations that affect commerce) ensure students with disabilities have "full and equal enjoyment of the goods, services, facilities, privileges, advantages, or accommodations" (42 U.S.C. § 12182(a)). Title III entities specifically include private nursery schools, elementary and secondary schools, colleges and other places of education. Title III discrimination includes the "failure to make reasonable modifications in policies, practices, or procedures" to accommodate a student with a disability, unless the school demonstrates that modifications would "fundamentally alter" the nature of their services (§ 12182(b)(2)(A)(iii)).

Although it is not settled law whether public accommodations offering services via the Web are subject to the ADA, the evolving majority position indicates persons with disabilities cannot be excluded from their web-based services if the Title III entity has a nexus to a permanent physical location. The Eleventh Circuit Court of Appeals in *Access Now, Inc. v. Southwest Airlines* (2002) found that Congress intended ADA Title III to apply to public accommodations with a physical concrete presence and not solely a virtual presence.

The Section 508 amendments to the Rehabilitation Act of 1973 require electronic and information technologies (E&IT) used by federal employees with disabilities, and those utilized to provide federal services to persons with disabilities, are accessible{ TA \l "29 U.S.C. § 701(b)(1) (2000)" \s "29 USCA § 701(b)(1)" \c 4 }. These products and services include federal websites, telecommunications, software, information kiosks, transaction machines, multimedia, office equipment, and others{ TA \l "29 U.S.C. § 701(b)(1) (2000)" \s "29 USCA § 701(b)(1)" \c 4 }. Additionally, federal agencies may not procure, develop, use or maintain E&IT that is not comparably accessible to persons with and without disabilities, unless accessibility would pose an undue burden upon the agency. Though § 508 does not apply to Title II or Title III entities, several states have adopted similar standards, in part to comply with Title II, impacting the accessibility of state and local government agency products, programs, and services for employees and members of the public with disabilities.

Before the Individuals with Disabilities Education Act (IDEA), half of all U.S. children with disabilities were warehoused in state institutions, commonly offering squalid conditions and no educational opportunity. Since 1975, the IDEA has entitled children with disabilities to a free and appropriate public education (FAPE), provided in the least restrictive environment, including the necessary individualized educational and related services, and specialized instruction to provide educational benefit. Students eligible for and receiving special education services comprise 14% (or 6.6 million) of all children in U.S. schools.

In passing the ADA, Congress found that "the Nation's proper goals regarding individuals with disabilities are to assure equality of opportunity, full participation, independent living, and economic self-sufficiency" (42 U.S.C § 12101(a)(8)). Facilitating these achievements for children with disabilities, however, requires specialized instructional methods, strategies, and materials, highly qualified special education teachers, and effective transition planning.

Central to these services is the annual development of an individualized education plan (IEP). Specifically, the IEP (a) identifies the child's present competencies and needs; (b) articulates measurable goals and short-term objectives to remediate the needs; (c) designates specialized services, modifications, supports, and supplementary aids to implement the goals and objectives; and (d) determines the least restrictive environment(s) in which services will be provided. Online distance learning services provided

by state or local education agencies to students receiving special education services must conform to the individual child's IEP. Yet distance learning may pose significant accessibility barriers. Moreover, such services may run afoul of the FAPE mandate if inaccessibility impedes educational benefit or imposes costs on the family such as having to purchase assistive technologies, or if the services remove the student from the least restrictive or impose a more restrictive environment.

### **Instructing Learners with Disabilities**

Students with disabilities are a diverse population with varying abilities, interests, impairments and skills. Facilitating academic achievement for children with disabilities, and successful post-secondary education, training, and employment for adults with disabilities requires specialized instructional strategies, materials, modifications and accommodations, highly qualified special education teachers for K-12, effective transition planning, and instructors/faculty willing to meet individual learner needs. As such, students with disabilities may have significantly differing needs and require individualized methods for equal and accessible distance learning opportunities. Investigators at the Southeast Disability & Business Technical Assistance Center in 2005 concluded that effective distance learning opportunities for students with disabilities, however, is less about their abilities and more about the accessibility of the course itself. Students with disabilities are gaining opportunities via online distance learning and Internet resources to have individualized learning experiences (e.g., assignments and feedback), extra practice, automated progress tracking and reporting to invested partners (e.g., teachers, parents), active participation in cooperative learning activities, and to review simulations and skill modeling. As a tool the Internet is more cost effective to school systems compared with assistive technologies, because of its multiple applications for multiple learners rather than singular use for specific users. The Web provides vast, inexpensive or free resources for the instructors of students with disabilities, including electronic journals and databases, synchronous and asynchronous communication tools (e.g., email, chat, public assignment or event calendaring), for organizing information, multimedia literacy instruction, and multimedia portfolio assessment.

Persons with vision, hearing, fine motor, or speech impairments, attention or seizure disorders, learning and other disabilities nonetheless find that many E&ITs pose barriers to their full participation in online activities. Persons with visual impairments do not get a structural overview of a web page when first encountering it as do persons without visual impairments. Graphic images that convey imbedded information are not accessible to persons with significant visual impairments. Audio conferencing may exclude persons with speech impairments, or persons with hearing impairments in the absence of closed captioning. Video presentations without closed captioning or a live sign language interpreter (onsite or remotely) pose these barriers to persons with hearing impairments. Instant messaging poses barriers to persons with fine motor impairments and persons with specific learning disabilities in reading or writing. The cost of voice recognition software, alternative input devices, screen readers, and other assistive technologies, which provide access for persons with varying impairments, may be prohibitive.

### **Emerging Best Practices and Policy Recommendations**

With increasing integration of the Internet and Web in education, several best practices have emerged to ensure and facilitate accessibility in online courses. Universally designed technologies and services provide for input and interaction in multiple alternative and equally effective ways (e.g., keyboard, mouse, or voice input; visual graphic or text output). The IDEA supports universally designed technology, "as a vehicle for maximizing curricular accessibility for all students, including those with disabilities." The Center for Applied Special Technology suggests the following Universal Design for Learning guidelines: (a) multiple means of representation (i.e., both technical and content presentation), (b) multiple means of expression (i.e., ways for student to represent knowledge), and (c) multiple means of engagement (i.e., addressing affect and motivation).

Developing a course to be accessible from the onset is less expensive and easier to design than trying to modify or redesign existing inaccessible course materials. Creating accessible web page templates and cascading style sheets, to be used as the framework to create all distance learning courses by an institution, can facilitate compliance with accessibility standards. People with disabilities often know what does and does not work for them. Meaningful involvement of students with disabilities is essential for identifying specific barriers to their full participation in distance learning activities. Administrators and faculty can demonstrate their respect for student expertise and time by providing course credit, tuition reduction, or stipends commensurate with the time required to evaluate distance education materials and to make recommendations for overcoming barriers.

Hands-on training and lab demonstrations are effective methods for developing staff awareness of the access needs of students and faculty with disabilities, and developing skills in creating accessible distance learning opportunities. Blue Ridge Community College developed *The Faculty Resource Guide to Removing Information and Education Barriers to Students with Disabilities* (2004) to increase awareness about accessible ICT and the impact of different disabilities on a student's ability to function successfully in an academic setting. When faculty and web designers are trained to focus on the needs of the user, the accessibility of the end product is much higher.

Designers must understand the range of barriers (e.g., fine motor, visual, stamina, hearing, attention, memory) for students with disabilities that arise with online learning opportunities, and how these affect course content, presentation, and web page formatting. For example, people with visual disabilities need descriptions for graphics; adequate space around links might be necessary for people who have fine motor difficulties using a mouse, and high rates of flickering or motion on a web site may induce a seizure for persons with seizure disorders, or prove highly distracting for persons with Attention Deficit Disorder. Placing questions at the end of a course segment, rather than at the end of a module (i.e., comprised of multiple segments), eases the strain on students with cognitive disabilities, such as traumatic brain injury, to focus on and retrieve relevant information. Providing proactive technical assistance to instructors for making web sites and online learning opportunities accessible, such as specific onsite or telephone consultation, the creation of templates and online tutorials, archiving workshops, training materials, and curricula online is strongly recommended.

### **Conclusion**

U.S. disability law and policy mandate people with disabilities have the same rights to independent and self-determined lives, to pursue meaningful careers, and to enjoy full participation and integration in the political, economic, educational, and social mainstream as persons without disabilities. Universal design principles offer a framework for the design of distance learning technologies and services that provide effective access and meaningful benefit to the most diverse range of learners. Public and private educators and businesses must ensure their programs and services provide equal benefit to diverse learners with disabilities.