Digital Access for Students in Higher Education and the ADA

An ADA Knowledge Translation Center Research Brief

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What is the ADA?

The Americans with Disabilities Act (ADA) was passed in 1990 and is a civil rights law that prohibits discrimination based on disability. The ADA protects people with disabilities by recognizing disability as a source of discrimination, similar to "race, color, religion, sex, or national origin" within the Civil Rights Act of 1964. The ADA had bipartisan support and promotes disability inclusion in multiple aspects of public life. Under the ADA, people with disabilities can challenge discrimination in the realms of employment, public services, and places of public accommodations. The overarching goal of the ADA is to promote equal opportunity, full participation, independent living, and economic self-sufficiency for Americans with Disabilities.

Disability Rights Laws, Higher Education, and Digital Access

Access to higher education for people with disabilities is important for achieving the goal of the ADA. People with disabilities are less likely to earn a post-secondary degree and less likely to be employed than people without disabilities (BLS, 2018). However, there is an increasing number of students with disabilities enrolling in higher education. In fact, during the 2015-2016 academic year, 19% of undergraduate students reported having a disability in the U.S (NCES, 2019). Additionally, higher education is changing as students are choosing to enroll in distance or online classes. According to the National Center for Education Statistics, almost 7 million students were enrolled in distance education courses at post-secondary institutions in the U.S. in the fall of 2018 (NCES, forthcoming). This number is likely much higher in current times, considering the widespread use of technology and online education as a response to the COVID-19 pandemic.

There are multiple disability rights laws that impact digital access in higher education in the U.S. Title II and Title III of the ADA, prohibit public and private institutions of higher education (except those run by a religious entities) from discriminating on the basis of disability and requires the provision of disability-based accommodations and services. Additionally, Section 504 of the Rehabilitation Act requires entities that receive funding from the federal government to ensure facilities and communications, such as websites, are accessible. Despite mandates to use accessibility guidelines, concerns about digital access in higher education still exist. There have been a number of legal cases regarding post-secondary education and digital accessibility. For example, when   students with disabilities have taken legal action against institutions of higher education because of violations of disability rights laws. Examples of these cases include institutions failing to caption online courses (*National Association of the Deaf v. Harvard University and Massachusetts Institute of Technology*) and having library websites that are not screen reader accessible (*National Federation of the Blind v. Pennsylvania State University settlement*) (Carlson, 2020). There are multiple cases that hold institutions responsible for creating accessible online content and ensuring access for students with disabilities.

There are challenges of applying disability rights law to the online environment, and it has been argued that these policies may create "separate but unequal" online experiences (Wentz et al., 2011). This brief highlights many of the barriers to digital access for students with disabilities identified prior to the pandemic. Trends in these studies point to the growing gaps and service needs experienced by students with disabilities. With the increased use of online and e-learning resources as a response to the pandemic (Johnson et al., 2020), it is even more important to consider disability and digital access in higher education.

HIGHLIGHTS OF FINDINGS

- There is limited research-based information about digital access and online learning for students with disabilities in post-secondary education.
- Students with disabilities face several barriers to digital access in higher education, such as the digital divide, impact of impairments, and inaccessible technology.
- Students with disabilities in higher education also report benefits of online learning such as less stress, greater flexibility in schedule, increased control of the learning process, and being able to access programs without limits of geographic location.
- Faculty and staff need additional training and support to enhance digital access in university settings.
- Accommodations are major topic in research regarding digital access in higher education.

Research on Higher Education and Digital Access

Overview

Despite the increasing enrollment of students with disabilities, research is limited on the experiences or outcomes of students with disabilities in post-secondary settings (Alamri & Tyler-Wood, 2017; Erickson & Larwin, 2016; Peña, 2014). A review of some of the most well-known higher education journals found that only 1% of the articles published from 1990 to 2010 were about students with disabilities (Peña, 2014). Additionally, there is limited information about the success of college students with disabilities in online education environments and information about the effectiveness of online learning for students with disabilities (Alamri & Tyler-Wood, 2017).

This brief will highlight research about digital access in higher education and summarize research on barriers to digital access, potential benefits of online learning for students with disabilities, accommodations in digital environments, and practical research about how to improve digital access.

Digital Divide

A key concept when talking about digital access in higher education is the "digital divide," which refers to differences in use of technology and access to the internet between people with and without disabilities. Reviews about technology and internet use show that people with disabilities often have less engagement with and access to online resources (Lissitsa & Madar, 2018). To learn more about the digital divide, please view the research brief on digital access and the ADA (Digital Access Research Brief).

The digital divide is complex and often impacted by factors like age, digital literacy (i.e. knowledge on how to use digital technology), socioeconomics (i.e. higher poverty rates among people with disabilities), among others (Lissitsa & Madar, 2018). Additionally, other research focused on digital access for young people with disabilities and found that "offline capital", such as supportive families and

financial resources, are related to increased access to the internet and technology (Newman et al., 2017).

Other research has explored issues with digital access for students with disabilities in post-secondary settings (Khalid & Pedersen, 2016). In a systematic literature review, authors highlight three broad categories related to the digital divide and exclusion in higher education. These categories include social exclusion (i.e. income disparity, lack of motivation, and physical or mental disability), digital exclusion (i.e. lack of devices and internet services) and accessibility (i.e. division between rural and urban areas, and disparities in digital literacy) (Khalid & Pedersen, 2016). These issues provide context to other barriers to digital access in university settings. The importance and growing influence of technology makes digital access, and especially understanding the digital divide, a major issue to address in higher education and online settings (Selwyn, 2010).

Challenges Online Learning

Understanding digital access is important as many students with and without disabilities take online classes. A survey of college students, found that 34% of respondents with a documented disability had enrolled in an online degree program; and 71.6% of all respondents (both with and without disabilities) had taken online courses (Roberts et al., 2011).

The growth of online courses has often been assumed to automatically increase access to higher education (Lee, 2017). However, greater investigation has shown that access to online learning is more complex, particularly for students with disabilities (Greer & Deshler, 2014). For example, online courses are not always designed to be accessible. A review of online courses using the WAVE accessibility checker found several accessibility issues, with the most common being: course content is incompatible with screen readers, use of JavaScript which requires the use of a mouse, opening of pop-up windows, problematic links to text, and tables without headers (Massengale & Vasquez, 2016).

Additional studies have identified challenges for college students with disabilities related to the demands and structure of online learning environments (Cole, 2019; McManus et al., 2017; Murphy et al., 2019; Verdinelli & Kutner, 2016). Examples of this include strains of sitting at a computer (Verdinelli & Kutner, 2016), stress of having to minimize the presence of disabilities (Cole, 2019), and difficulty concentrating (Murphy et al., 2019). In fact, survey results indicate that 46% of respondents with a disability shared that they felt their disability acted as a barrier to being successful in online classes (Roberts et al., 2011). However, some researchers have speculated that the perceived negative impact of a disability could be because of inaccessibility in online environment and fear of discrimination when disclosing a disability status (Chadwick & Wesson, 2016).

Other barriers to learning in online environments have been found. Students with disabilities describe feeling isolated when taking online courses (Cole, 2019; Verdinelli & Kutner, 2016) and having difficulty communicating or miscommunication with faculty (Cole, 2019; Murphy et al., 2019; Verdinelli & Kutner, 2016). Additionally, students with disabilities have expressed challenges in finding resources and navigating institutions to find information about accommodations and other resources (Cole, 2019; Verdinelli & Kutner, 2016). Barriers to online education influence how students are able to engage with their coursework and have been shown to impact their overall wellbeing (McManus et al., 2017).

Assistive technology in the classroom also poses potential increased access to course content. However, research highlights that assistive technology users and officers should be aware of potential barriers such as inadequate training, limited use of devices, lack of available supports, and difficulty with navigating multiple sources of information (McNicholl et al., 2019). These barriers can limit the effectiveness of assistive technology and negatively impact engagement with the university environment (McNicholl et al., 2019).

Benefits of Online Learning

Students with disabilities also highlight several positive aspects to enrolling in online classes. For example, students with disabilities described experiencing less discrimination and less stress or anxiety in online settings versus traditional classrooms (Murphy et al., 2019; Verdinelli & Kutner, 2016). Some students reported having more comfort in interacting online than face-to-face (Cole, 2019). Furthermore, students with disabilities describe feeling like they have more control over the learning process with examples like more time to respond to questions, increased study time, and opportunities to set the pace for learning in online environments (Cole, 2019; Murphy et al., 2019; Verdinelli & Kutner, 2016). Students also shared increased confidence, connection to peers, and advocacy both for themselves and others when they are able to fully engage in online learning (Cole, 2019).

Additionally, students also shared that online courses allowed for greater management of their disability needs (Murphy et al., 2019; Verdinelli & Kutner, 2016). Flexibility in schedule is a key reason that both students with and without disabilities enroll in online courses (Murphy et al., 2019; Verdinelli & Kutner, 2016). Other reasons for choosing online classes include practical reasons like being able to stay in the same geographic location, selecting a particular program or specialization that's not offered at other locations (Verdinelli & Kutner, 2016) and avoiding commutes to in person classes (Murphy et al., 2019). Overall, online learning offers several benefits for students with disabilities in higher education.

Inaccessibility Outside the Classroom

Digital access in higher education is not limited to online classes. Other digital resources and technology related to higher education have also been found to be inaccessible. Oswal (2014) conducted a literature review to identify blind screen reader users' access issues and difficulties with online databases at university libraries. Online databases are essential to finding academic work and learning within higher education. Findings of the literature review show that many studies are from the perspective of developers rather than people with disabilities. Key issues identified in the review reflect this by highlighting barriers such as the complexity of designing digital content, assumed limited markets for accessible products, and time lags between when digital content is originally made and when it is made to be accessible. The authors expand on the impact of inaccessible online databases not only as physical access, but also the creation of social exclusion of staff, faculty, and students with disabilities in higher education.

Another study reviewed the accessibility of college writing center websites and services (Quinn et al., 2019). Authors found that only two of the 35 writing center offices had a mission statement that identified supports for students with disabilities. Over two-thirds (71%) of the writing center websites had at least some inaccessible content, ranging from 21-70% of all content on the website.

Additionally, a study by Taylor (2020) reviewed 450 university financial aid websites. University websites have been found to be largely inaccessible in general (Acosta-Vargas et al., 2016), and this study focused exclusively on financial aid features, as it is an important aspect of being able to attend college in the U.S. Many of the reviewed financial aid websites had nearly 40 web accessibility errors (Taylor, 2020). In fact, only 16% of the websites were accessible enough for students with disabilities to navigate from the home landing page to pages with instructions about the federal student aid application. Promoting digital access for the disability community in higher education is broad and requires action in both classrooms and other parts of post-secondary settings.

Teachers/Faculty Need Support for Engaging in Online Environments/Technology

Another concept related to digital access in higher education is the need for supporting staff and faculty

when engaging in online environments. One study found that institutions recommended and provided workshops about accommodations for students with disabilities for both in person and online courses, but few professors actually volunteered to participate in the trainings (Heiman et al., 2017). Other research found that many faculty members are under-prepared to support students with disabilities in the classroom (Hsiao et al., 2019). Researchers have called for greater understanding by faculty members about the need for digital access and the availability of trainings on designs for accessible courses (Gladhart, 2010). Training has been shown to enhance accessibility in higher education by increasing educators' willingness to accommodate students with disabilities and create more inclusive learning environments (Hsiao et al., 2019).

Accommodations and Digital Access

Accommodations are adjustments to coursework or classroom settings that allow students with disabilities to participate in and complete coursework and are protected through disability rights laws. In order to receive accommodations, students with disabilities usually must disclose, or share a disability status along with required documentation, with a university disability service center and faculty who teach their classes. Students are less likely to request and/or receive accommodations in higher education compared to K-12 school settings (Betts et al., 2013). In fact, it has been found that students with disabilities are not always aware of available accommodations nor about their right to accommodations under U.S. disability rights laws (Gabel & Miskovic, 2014).

Research about digital access in higher education has touched on similarities and differences regarding accommodations and disclosure between online and in-person settings. One study found that students with disabilities did not report different attitudes when asked about requesting accommodations in online versus in-person classes (Barnard-Brak & Sulak, 2010). However, students with visible disabilities did seem to have more positive attitudes about requesting accommodations in online versus in-person settings when compared to students with invisible disabilities (Barnard-Brak & Sulak, 2010). Another study found that students with disabilities felt that they often received accommodations they requested in online courses (Roberts et al., 2011). In fact, 45% of students reported they were very satisfied or satisfied with their institution's response to accommodating their disabilities, and only 6% were dissatisfied (Roberts et al., 2011).

Digital access through accommodations is important for students with various types of impairments. While most studies about digital access is usually considered for learning and sensory disabilities, one study found that 7% of students with mental health conditions requested adaptive computer software as a reasonable accommodation in higher education (Salzer et al., 2008).

There are limits of focusing solely on accommodations or accessibility guidelines when designing digital access in higher education (Seale, 2013). First, not all accessibility guidelines are able to address all needs of students with disabilities within all technology. Additionally, students with disabilities have noted that digital inclusion is not only about technology but also includes social and cultural aspects of well. For example, Seale (2013) suggests that universities should attempt to cultivate cultures where accommodations are not suspect of perceived "unfair advantages" and instead are supported as part of creating digital access for all.

Digital access and the pandemic

Experiences specifically of students with disabilities continues to be under-researched, though there is a growing body of information about higher education overall during the pandemic. As response to the

pandemic, institutions of higher education had to rapidly adjust their day-to-day activities. Faculty quickly adjusted to providing online coursework, regardless of their previous experience with online learning or providing accommodations in the e-learning environment (Johnson et al., 2020). Additionally, there is concern that colleges and universities are not placing enough emphasis on providing disability accommodations during the pandemic (Charmatz, 2021). As higher education classrooms have moved to virtual settings in response to the coronavirus, access to technology and internet infrastructures have been found to be the primary factors that facilitate participation in online learning (Doyumgaç et al., 2021). This is especially important considering the aforementioned digital divide for students with disabilities (Lissitsa & Madar, 2018). Furthermore, students are concerned about their educational experiences. In a national study in the U.S., college undergraduate students expressed concern and stress related to the impact of the pandemic on their educational success and outcomes (Cohen et al., 2020). More information about students with disabilities' experiences with digital access is needed in order to respond to the identified barriers and service gaps and understand how these gaps are compounded in the current context.

Applied Research

Researchers also offer actionable research or guidance for institutions of higher education to enhance digital access and inclusion. For example, Nganji (2012) asked students with disabilities to provide feedback and categorized the recommendations based on type of disability. These broad recommendations also highlight the diversity of disability experiences. Other suggested practices from the digital access research include (Hamburg & Lütgen, 2019):

- Involving students with disabilities in technology development.
- Having a standard evaluation about access in developed technology.
- Having a standard and consistent approach to including students with disabilities in online learning.

Many of these reflect the principles of universal design in learning and create settings that are accessible for all students, not just students with disabilities.

Conclusion

In conclusion, this brief has summarized various research about digital access in higher education. There are several challenges that hinder accessibility in university settings. First is the digital divide, where people with disabilities have less access to the internet and technology than people without disabilities. Additionally, online learning is often not designed to be accessible. Inaccessibility is not limited to online classes, as it has been found that other aspects of university settings also do not meet the needs of students with disabilities. Despite these challenges, students with disabilities choose to enroll in online courses for several reasons and have been found to benefit from online learning environments. Faculty and staff need additional support and training to enhance accessibility in post-secondary settings. Accommodations also continue to be an important topic and resource for students with disabilities in online environments. Overall, digital access is an increasingly important topic to fully embrace the spirit of the ADA and to help achieve greater access for people with disabilities.

Examples from The ADA National Network

Below are a few examples of how the ADA National Network is addressing the issues raised in this brief. For further information on how the ADA Centers can help with issues related to the ADA, please contact the [ADA National Network](#).

- A new ADA coordinator at a college reached out to their regional ADA Center about training and professional development opportunities. The technical assistant at the regional center gave information about available training, which includes considerations for various access needs, disability rights law, and requirements of public universities and colleges, including digital materials and online courses.

- One regional center had a college disability service worker reach out regarding online classes and accessibility. A student reported that some videos provided in their online course were captioned and another section had only transcripts instead of captions. The ADA Center technical assistant provided relevant and detailed information from the *Web Content Accessibility Guidelines 2.0 and 2.1.* This information helped the disability service worker better understand the need for clearly labeled transcripts of videos and supported the best practice of available captions, particularly in pre-recorded materials.

- A representative from a nursing college reached out to their regional ADA Center to ask for clarity about providing captioning in online coursework for a student who had profound hearing loss. Leadership at the nursing college expressed concern about having to provide captioning and about the ability of the student to become a nurse due to their disability. The ADA Center technical assistant provided information about the responsibilities of the nursing college to provide auxiliary aids and services to ensure effective communication; and explained that as long as the student met all other requirements for the program, denying admission or reasonable accommodations was a potential violation of the student's rights through the ADA.

- One regional center received a message from a college disability support service worker who explained that a professor was using a particular program to create videos that did not have captioning capabilities, which affected the participation of a deaf student. The computer program company would not allow the university to add captions, since they were the "owners" of the generated content. A technical assistant (TA) at the ADA Center provided information about *Section 504,* the *Web Content Accessibility Guidelines 2.0*, and the ADA to the disability support service worker. The TA also described potential actions that could be done to make the videos accessible for the student and to help the university maintain compliance.

- A hospital employee called the regional ADA Center about a student with a visual disability in the hospital's medical assistant internship program. The caller wanted information about the hospital's responsibilities to provide supports and assistive technology. The technical assistant talked through the needs of the student, helped negotiate accommodations, talked with the hospital's IT department about screen reader interfaces, and provided other resources available in the hospital's area regarding assistive technology and digital access.

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