

ACCESSIBILITY FOR ONLINE STUDENTS WITH DISABILITIES: RECOMMENDATIONS FOR EDUCATORS

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ABSTRACT

The increasing demand for distance education, paired with the increasing numbers of students being identified as having exceptionalities, requires that faculty be keenly aware of accessibility issues for students with disabilities. This paper examines some of the most critical accessibility issues in an online environment, such as Attention Deficit/Hyperactivity Disorder, Visual Impairment, and Mobility Impairment. The responsibilities of the various parties involved in the learning process are discussed, and some recommendations are offered on accommodations that better promote accessibility for all distance education students.

INTRODUCTION

A primary purpose of distance education is to allow students access to educational materials, no matter what their physical proximity to a college or university may be. If these courses are designed with accessibility in mind, the playing field can truly be leveled for college students with disabilities, whether these disabilities are cognitive, learning, or physical in nature. Some examples of the issues facing our students include visual and hearing impairments, mobility impairments, mental health/psychiatric impairments, and learning disabilities. Designed correctly, distance learning courses can create learning opportunities for these students. If the design of these courses ignores the needs of those with disabilities, the courses themselves become additional barriers to accessing an education. Our goal must be to make learning accessible to anyone and everyone.

With the ever-increasing numbers of individuals with disabilities, there will undoubtedly be increases in the number of college students with disabilities. According to the U.S. Census Bureau, nearly 1 in 5 persons in the United States has some type of disability; 14.3 million Americans age 15 and older have a mental disability, 3.5 million of which have learning disabilities. Accessible design can help everyone, not just those with disabilities.

Students with disabilities often face difficult challenges navigating a large university campus, so online courses seem an attractive alternative to the traditional classroom. As Peter Drucker stated in 1997, "Distance learning is coming on fast." This point is well taken when one considers the rapid growth of online learning in education and industry during the last decade. Several factors have caused a rise in virtual instruction, including greater access to and affordability of personal computers, and more demand for flexible courses to accommodate the hectic lifestyles of adult students (Ricketts, Wolfe, Norvelle, and Carpenter, 2000).

There are many advantages associated with distance education. Some of these positives include increased convenience, access to courses which may not be available locally, and flexibility for those who wish to combine an education with full-time employment and family responsibilities (Jenkins and Downs, 2003). Virtual education also provides a platform that assists professors in presenting material in alternative ways that better meet the diverse learning styles of their students. In addition to these advantages, studies have shown that distance education students are often self-disciplined and motivated, and achieve comparable, and often better, educational results than their peers in a traditional classroom.

Distance education will continue to play a critical role in the growth of student enrollment at universities throughout the United States. Research has shown that online education is often the most expedient way for students to earn a degree (Jenkins and Downs, 2003). As distance education increasingly becomes a standard part of our business curriculum, it is imperative that we learn more about the students in these courses and develop creative ways to deliver course content.

COMMON STUDENT DISABILITIES

Federal and state laws require that public universities provide reasonable accommodations for students with disabilities. Accommodations, however, do not require professors to drastically change their course content or expectations. Rather, accommodations are generally associated with the manner in which the course content is delivered.

Accommodation provides a method whereby a disabled student can demonstrate his or her knowledge and abilities when traditional methods are inadequate. Accommodation in no way implies giving someone an unfair advantage over other students. Students with disabilities are required to meet the same academic standards as other students. Each student has a specified plan designed to illustrate accommodations that can be provided for their particular disability.

Students with disabilities are affected in how they take in information, how they process it, and how they retain and/or express their understanding of the information. Challenges include accessing information contained in spoken words, printed words, videotaped/televised or webcast information, audiotaped information and computer-based information. The most common difficulties encountered with such students include reading comprehension, spelling, writing, math computation and/or problem solving. These students may also have difficulties with organization, time management and social skills. Some online students with disabilities may not be able to see graphics or hear audio, and many may have difficulty navigating unorganized sites. Students with disabilities encounter many challenges in gaining knowledge and demonstrating that knowledge.

Many students with visual impairments are not completely blind. The degree of visual impairment will determine the types of accommodations needed for each individual. Some individuals will be able to read with enlarged print, while others who are completely blind will need their textbooks and exams converted to Braille or read to them by a screen reader. This will require ALT tags and descriptions of images. An ALT tag is a sequence of key strokes used in HTML coding to indicate to a screen reader that a non-text item is present in the document, such as a line, border, graph, picture, etc. If an ALT tag is not used with a non-text object, a screen reader will see it as an "unidentified object" and the student will not know what the screen reader has encountered and whether it is important or not.

Color blindness is the inability to perceive differences between some or all colors that other people can distinguish. It is most often of a genetic nature but may also occur because of eye, nerve, or brain damage. Many different types of color blindness exist, such as "green-red" (cannot distinguish between

green and red), “yellow-blue” (cannot distinguish between yellow and blue), and monochromic blindness (cannot distinguish any colors at all from gray).

Not all students who are deaf or hearing impaired require the same types of services. Most will require captions for audio and/or video and possibly extended exam time.

Attention Deficit/Hyperactivity Disorder (AD/HD) is generally characterized by an inability to pay close attention to detail, difficulty sustaining attention, forgetfulness in daily activities and other related symptoms. Students who are diagnosed with AD/HD may require some accommodation to accomplish academic requirements. AD/HD is often the most commonly encountered disability at many universities. There are many different strategies that an instructor may use within the learning environment to address Attention Deficit Disorder such as visual aids, structured assignments, and clear outlines of requirements and timeframes or schedules so students can plan ahead and pace themselves.

The orthopedic and mobility impairment group is composed of a multitude of disability types. Spinal cord injuries, cerebral palsy, multiple sclerosis, arthritis, AIDS, and amputated limb are examples of these types of impairments. Because of the wide range of function within this group, accommodation is different for each individual.

There are no specific teaching techniques for working with this disability group, but special consideration should be given with regard to each individual's needs. Communication with students is essential for providing accommodation for each individual. In addition to extended exam taking time, the professor should ensure that the Blackboard site can be navigated by keyboard alone.

FEDERAL DISABILITY LAWS

Three major laws deal specifically with the issues of accessibility. These laws include the Americans with Disabilities Act (ADA) of 1990; Section 508 of the Rehabilitation Act of 1973, and Section 255 of the Telecommunications Act of 1998.

The ADA states that all public colleges and universities must make reasonable accommodations for students with disabilities, and provide full access to all programs. This means that all students must have access to the same information and communication involved in the course. University of Washington's DO-IT (Disabilities, Opportunities, Internetworking and Technology) program states that an accommodation for an individual is NOT “reasonable” if providing it would: 1) pose a direct threat to the health or safety of others; 2) result in a substantial change in an essential element of the curriculum; 3) require a substantial alteration in education opportunities or service provision; and/or 4) impose an undue financial or administrative action.

Congress amended the Rehabilitation Act in 1998 to require federal agencies to make their electronic and information technology accessible to people with disabilities. Inaccessible technology interferes with an individual's ability to obtain and use information quickly and easily. Section 508 was enacted to eliminate barriers in information technology and to make available new opportunities for people with disabilities. Under Section 508 (29 U.S.C. '794d), agencies must give disabled employees and members of the public access to information that is comparable to the access available to others.

Section 255 of the Telecommunications Act requires that the manufacturers of hardware and software ensure the products are usable by persons with disabilities. This may involve accessibility aids commonly used by persons with disabilities. This applies to any hardware or software that transfers information over the internet, networks or phone lines. Our publishing representatives have assured us

that their companies comply with this law and that all course content materials, including Blackboard cartridges, are fully accessible.

EXPLANATION OF RESPONSIBILITIES

The following lists include the responsibilities of the various parties involved in the delivery of accessible online education. Some responsibilities are shared between the various parties, while others are the responsibility of certain individuals. The simplest way to ensure that the process is effective is for everyone to work together to provide the necessary accommodations.

Student Responsibilities:

- 1) Register with Disability Support Services (DSS) at his/her respective institution.
- 2) Notify the instructor of disability and accommodations required.
- 3) Obtain and use needed assistive technology and necessary equipment.
- 4) Request proctor for exam.
- 5) Notify DSS of test accommodations for proctor (read aloud, screen reader, etc.).
- 6) Pay any costs associated with the use of a proctor or assistive technology or tutoring.
- 7) Save and/or print all information for the course in a format compatible with the assistive technology used (print in black ink only, save documents as text only, etc.).
- 8) Notify instructor immediately of any problems they encounter accessing course information whether it is from documents, links, etc.

Office of Online Programs Responsibilities (or comparable unit at your campus):

- 1) Obtain and coordinate proctors for students with disabilities.
- 2) Create a presentation for faculty teaching distance education courses informing them of requirements and alternative teaching strategies to ensure accessibility of online courses.
- 3) Record faculty attendance of presentation and report to the Dean's office.
- 4) Train graduate assistants to assist faculty in performing accessibility functions such as checking documents, creating ALT tags, getting videos and multimedia captioned, etc.

Office of Disability Support Services Responsibilities (or comparable unit at your campus):

- 1) Verify that student has a disability and the nature of said disability.
- 2) Determine accommodations needed by student and provide student with documentation to present to instructor, including those accommodations specific to online material.
- 3) Assist with captioning of video, ALT tags and other conversion of course materials, including textbooks, into accessible formats.
- 4) Identify and recommend appropriate hardware and software to meet students' needs.

Faculty Responsibilities:

- 1) Ensure course content is accessible to students with disabilities.
- 2) Include an ADA statement on all syllabi.
- 3) Implement all accommodations required by student.
- 4) Offer text equivalents and alternative deliveries of content.
- 5) Provide alternative ways for students to earn chat credit if this is a graded item.
- 6) Utilize accessibility software or website to ensure online materials are accessible.

- 7) Provide a disclaimer for any video material that may flicker or be viewed over a slow internet connection (flickering is associated with epileptic seizures).
- 8) Respond promptly to any accessibility problems encountered by any student.

SUGGESTED ACCOMMODATION POLICIES

Many accommodations for online students often require practicality and flexibility. The following recommendations will be stated in “Required” and “Recommended” terms. The “Required” items will include those things which every online course must have or do to be in compliance with the federal disability laws and/or college policies. Non-compliance with the college requirements would result in loss of online teaching privileges at the discretion of the administration. These required items pertain to all components used in an online course. The “Recommended” items will include those things that will allow a student with a disability to most effectively complete the course. These items will be listed by individual components or programs.

General Requirements:

The components of the latest version of Bb (6.3) are ADA compliant, except the Chat function. Blackboard is currently in the process of addressing this issue. If Chat is a grade component, there must be an alternative equivalent, such as recording and archiving the chat and allowing the disabled student to write a response or discussion. Professors should record Chats even if a grade is not involved, so that all students have access to what was discussed in the Chat. Individual websites are allowed, but the professor is responsible for ensuring that the web pages are accessible. Faculty web pages, as well as college web pages, should be assessed for accessibility.

The primary requirement for each faculty member involved in online teaching is to provide an equivalent alternative delivery method for information presented in the course. The information may need to be provided in text, video, and audio formats. If other methods are not available, a text equivalent is required. Multimedia files (audio, video, streaming, etc.) must at a minimum have a text equivalent document. The key is to provide the student with a disability the same opportunity as the student without a disability, so they are able to understand, learn, and apply the information.

It is suggested that some type of “universal design” be used so that faculty do not have to “reinvent the wheel” whenever a student with a disability is encountered. This simply means that professors should be proactive in the manner in which they design their course so that the most common accommodations have already been met. In accordance, all documents must include the following characteristics: clean, undecorated font types that are easy to read; high contrast between text and background; column and row headings for tables or charts; ALT tags for images; ease of navigation through the document using the keyboard only; page or screen organized into manageable “chunks” of information; diagrams labeled so they are not dependent on color; and elimination of flickering, flashing, or unnecessary motion.

In addition to course delivery, professors need to be aware of the required accommodations for exams and quizzes. As with the face-to-face classes, instructors must provide extended time for all timed exams and quizzes. Generally, extended time consists of time and a half allotted for the completion of the graded assignment.

Accessibility Requirements:

No matter what tool is used to deliver the information to the online student, the following items are required to ensure accessibility and compliance with federal and state laws.

1. Provide an equivalent delivery alternative for all course materials (such as text alternative or captioning for video).
2. Use common fonts (Arial, Times New Roman, Helvetica, etc.) and avoid extremely decorative fonts.
3. Utilize high contrast between text and background.
4. Organize text into manageable chunks with headings to separate the information.
5. Use column and row headings for tables and charts.
6. Use ALT tags, captions, or description with images.
7. If animation is used, text equivalent must be provided.
8. Ensure that documents with color are understandable for people who cannot perceive color (color blindness). If color is used to convey important information, an alternative indicator such as an asterisk (*) must be used.
9. Use the clearest and simplest language appropriate for the document's content and refrain from using slang or regional language.
10. Make each hyperlink descriptive of the content to which it links. For example, when referring a student to a web page, give a brief explanation of the content of the web page or the actual web page address. Do not use "Click here" since a screen reader would not understand "here."
11. If creating PDF documents with Adobe Acrobat, use version 5.0 or higher since earlier versions are not ADA compliant. The later versions have features that are critical for the accessibility of PDF documents. They also have an accessibility checker which was not present in previous versions of the product.
12. All documents must include page numbers to facilitate navigation.

Program-specific Recommendations:

In addition to the general requirements above, faculty are responsible for ensuring that all tools used in distance education meet the necessary accessibility requirements. We are providing recommendations for some of the most commonly used programs and features in an online environment. These recommendations deal with the delivery of the online course, not the content. By designing online courses with accessibility in mind, fewer changes will be necessary in the future if a student with a disability enrolls in the course. Full access must be provided to students with disabilities to the extent that accommodations are "reasonable" and "doable."

Microsoft Word

1. Make text equivalents short and to the point.
2. Use automatic bullets and numbering to format lists and outlines (for screen readers).
3. Create a table of contents.
4. Specify the meaning of each acronym or abbreviation when first used.

Microsoft Excel

1. Label each worksheet with a meaningful name.
2. Provide descriptive notes for each chart or graphic displayed.
3. Repeat column and row headings for end of column or end of row totals.
4. Avoid abbreviations and acronyms when possible in headings.
5. Expand column widths to accommodate full length of text. Screen readers cannot distinguish wrap-around text.

Microsoft PowerPoint

1. Presentations in HTML format must use ALT tags.
2. Make sure all links are clearly visible and are not hidden behind other objects.
3. Provide text equivalent for any audio (applause, speech, sounds).
4. Avoid unnecessary animation.
5. Avoid using backgrounds that are overly busy or cluttered.
6. Create a consistent style in the presentation.
7. Specify the meaning of each acronym or abbreviation when first used.
8. Ensure black and white view of presentation conveys all information properly.

Adobe Acrobat

1. Tag all documents, lists, and data tables using Acrobat's Tag Palette.
2. All important or relevant parts of the document should be part of the document structure (if importing files, make sure all headers, page numbers, etc. are tagged).
3. Group similar illustrations together into one illustration using the Group command (allows for one entry of alternative text).
4. If the PDF is sufficiently long, create an index for easier navigation.

Audio/Video (Camtasia, streaming video, webcasts, etc.)

1. Allow students to pause audio or video if possible.
2. Make sure audio is clear and easy to understand.
3. Provide text equivalent for audio if reasonable.
4. Provide text equivalent or captioning/subtitles for video.
5. Make sure video is of sufficient brightness.
6. Make videos available in common formats (WMV, MPG).

E-mail

1. Provide high contrast between text and background.
2. Use proper grammar and punctuation so that a reader for visually impaired students can read the message properly.
3. Include a signature line on all e-mail messages (to assist screen readers).
4. Include a text equivalent for all images in an e-mail.
5. Ensure that all e-mail attachments are accessible.

Blackboard Chat

1. Chats should be recorded.
2. Attempt to keep a moderate pace in the chat.
3. If importing visual or sound items, provide a text equivalent.
4. If participation in chat is part of the student's grade, alternative options must be available.

In addition to these requirements and recommendations, faculty should always attempt to proactively accommodate students' diverse needs.

FUTURE OUTLOOK

If online instruction continues to grow as projected, a college or university can expect the number of students with disabilities to grow as well. Government regulation (ADA, FCC) in the area of online education will continue to be redefined and expanded upon. To ensure compliance with the federal and state laws, it is imperative that all colleges and universities be proactive in staying abreast of changes in the requirements for online accessibility for students with disabilities. Eventually it may be determined that a compliance officer at the university or college level is necessary to evaluate all online instruction. In order to effectively meet the needs of our students with disabilities, colleges and universities must continue to develop and strengthen relationships with all constituents involved in the instructional process.

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