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Maximizing Accessibility in Online Courses

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Introduction

The population of students with disabilities at the postsecondary level in the United States has grown from 9% in 2000 to nearly 11% in 2008; this upward trend is expected to continue in the future [1]. At the same time, the number of postsecondary courses offered online has also increased substantially. According to a report commissioned by the Sloan Consortium [2], more than 20% of higher education students in the United States were enrolled in at least one online course in the fall of 2007, representing a 12% increase over 2006. It seems likely, then, that the number of students with disabilities enrolled in online courses will increase as well.

In their creation of online courses, instructional designers may inadvertently overlook the needs of learners with disabilities. However, creating accessible online courses isn't merely a "nice to do" activity; it is required by federal law. Section 504 of the Vocational Rehabilitation Act of 1973, for example, specifically prohibits discrimination against individuals with disabilities by any federal agency receiving federal funds; this includes colleges and universities.

Two high-profile lawsuits have been filed recently by the American Federation of the Blind (AFB) and the American Council of the Blind (ACB). The first case involves a pilot project undertaken by a coalition of universities in conjunction with Amazon.com to test the use of Amazon's Kindle DX electronic book reader in the college classroom. Although the Kindle DX had a "read-aloud" feature, the controls to *access* this feature were inaccessible to individuals who are blind [3]. The second case, filed by the AFB on behalf of blind students and professors at Penn State, cited "pervasive and ongoing discrimination" due to inaccessible technologies used on campus [4]; technologies cited include learning management systems used for online courses, departmental web sites, and the university's library catalogue.

Designing with Accessibility in Mind

Fortunately, the online environment can be adapted fairly easily to make course content accessible to students with disabilities; numerous articles and websites are available to assist with this task [5-7]. When designing your course, keep in mind the needs of students with visual or hearing impairments, as well as those with cognitive or motor disabilities.

Ensure your online course is easy to read and understand. Keep language simple and conversational, using as few words as possible. Although unique fonts and backgrounds increase the visual appeal, these features can make websites difficult to operate for people with disabilities. Large, plain text and high color contrast are best for people with visual impairments. If possible, offer picture magnification or include a short job-aid explaining where students can find the picture magnification option on popular browsers.

If you use color as a method of categorizing topics or coding items, ensure that there are other designations such as shapes, patterns and color, or text and color, so someone who is color blind or has a visual impairment can understand the coding.

Make sure you've offered multiple options for how information is represented in an online course. For example, include captions or transcripts as alternatives to audio files for students who are deaf or hard of hearing. Many people with visual impairments use screen readers that will read text aloud; thus, it is important to include textual descriptions of photos and graphics for students who fit this category. Ensure that there is a text equivalent for every non-text object on the page; this should describe the purpose of the graphic, image, or sound. Most learning management systems offer instructors the option of adding an *Alt-Tag* to such objects, ensuring that all non-text elements of the course are accompanied by a text equivalent. Hyperlinks should provide users with alternative text to describe where the link will take them. Keep in mind, though, that the descriptions should be relevant to what they are captioning and also be helpful to the reader; an Alt-Tag that says "click here" is not informative.

Because screen readers only read text from left to right, it's important to label tables with row and column headers; this will allow a user with visual impairments to make sense of the data contained within the table.

If you are converting documents to PDFs, make sure that you save them as text, rather than as an image. When PDFs are saved as text, screen readers can understand them. If you are scanning documents and don't have access to the original, try scanning them in as a word processor document using optical character recognition (OCR) software, and then converting them to a text PDF. PDF documents can also be tagged to increase accessibility. More information on PDF accessibility can be found at <http://www.webaim.org/techniques/acrobat/>

The course should include a link to the institution's Americans with Disabilities Act (ADA) policy, if available; a statement explaining to the students how to access the institution's disabilities support services should be included as well [8].

Conclusions

The explosion of online learning in recent years has provided new learning opportunities for people with disabilities. With mindful planning, course content can be made accessible to students who may have been unable to participate in the past, allowing accommodations and preferences for them so that they can participate in the learning process with their peers.

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