

Digital Publishing in Higher Education:¹

What you need to know about Universal Design before you make a commitment.

Part I: The Case for Universal Design

Universal Design and Digital Publishing Must be Contractually Required by Institutions of Higher Education

Over 15 million Americans, including many college and university students and faculty, have print disabilities, meaning they cannot effectively read print because of a visual, physical, perceptual, developmental, cognitive, or learning disability. To access text, most people with print disabilities require non-visual modes of access. For a hardware device, such as an e-book reader, this means the device must have text-to-speech and accessible navigation. To access e-books on a computer, the e-book and interface must be fully accessible using screen access software, such as JAWS or Window Eyes, which reads aloud the text displayed on the screen or converts the text into Braille on a refreshable Braille device. These technologies, which have been used for decades by the blind and print disabled, must be incorporated into mainstream products and services as part of inclusive education.

As colleges, universities and college bookstores explore the utility and cost-effectiveness of digital textbooks, those institutions must ensure universal access, including access by blind and print-disabled students and faculty. Digital publishing, unlike print books, can be immediately available to everyone. Unfortunately, as a result of poor design many e-books contain gratuitous barriers to accessibility. Content must be rendered in meaningful XML with a proven track record of accessibility, such as that found in the DAISY and EPUB standards, the interface must work with the screen access software employed by blind and dyslexic students pursuant to long-established published standards and if the content is to be accessible through a mobile device, then the controls for that hardware must be accessible as well. Accordingly, colleges, universities and college bookstores must take care to include accessibility specifications in all requests for proposals for contracts for e-book licenses and related services and to place the responsibility for accessibility with the contracting party.

Accessible Digital Publishing is Required by Federal and State Laws

Public and private institutions have to provide equal access to services, programs and activities under, variously, Title II or Title III of the Americans with Disabilities Act,

¹ This guide was created by the National Federation of the Blind with the assistance of George Kerscher, Secretary General of the DAISY Consortium, and Ron Stewart, of the Association on Higher Education and Disability (AHEAD) and the Access Technology Higher Education Network (ATHEN).

Section 504 of the Rehabilitation Act and state civil rights statutes. In addition, many states have laws that mandate that governmental entities contract for accessible electronic and information technology. Moreover, access to information has been a critical mission of institutions of higher education. Articles 9 and 21 of the United Nations Convention on the Rights of People with Disabilities reflect a global consensus that equal access to information by persons with disabilities as a fundamental human right.

Separate Distribution Channels for Students with Disabilities Do Not Provide Equal Access

Currently, most institutions provide their blind and print disabled students with electronic files of assigned textbooks that have been produced, edited and reviewed by their disabled student services (DSS) offices or other campus entities to make them accessible. Sometimes they can obtain files from the publisher, either directly or through the facilitation of online database systems like AccessText, AMAC, ATPL, AMX, or Bookshare. Less than half of the files requested arrive in a timely manner. When publisher files cannot be located, as is often the case, the college or university must create the files in-house by scanning the pages of the print book and then running software programs that extract the text through a process called Optical Character Recognition, or OCR. When e-textbooks that are sold to institutions and the public through mainstream distribution channels are accessible, this undertaking by DSS offices will no longer be necessary.

The files obtained from the publishers or created at most DSS offices are image PDFs that must be converted into accessible formats by the college or university or “text dumps,” that is, raw text that lacks the navigation features, like chapter headings and page numbers, the ability to annotate and highlight, and the overall ease of use that e-textbooks offer. Despite best efforts, the process of obtaining and creating these separate files can take weeks, even months, leaving the student who is blind or print disabled without a textbook well into the start of the semester or academic year. Meanwhile, non-print disabled students can access e-textbooks instantaneously. Because the student who is blind or print disabled ends up with an inferior product, often at significant delay, equal access to e-textbooks generally requires that the mainstream e-textbook system and applications are designed to be accessible to blind and print-disabled readers.

Part II: What to Demand in a Universally Designed System: A Technical Guide

Universal Design and Accessibility at the File Level

First, digitally published works must provide more than a print page view of the document. A JPG or a PDF view will not allow Assistive Technologies (AT), such as screen access software, to access the information. Today, XML and well structured HTML can provide the information in a well structured presentation of the information. This XML presentation can be transformed by a reading system to synthetic speech or to a refreshable Braille display, and other formats used by persons with disabilities. In addition, the Universal Design of the visual presentation synchronized with text-to-speech helps comprehension by a wide range of people, including those who have English as a second language.

The Interface Must be Accessible

Digital publications are viewed online, displayed on a computer, or downloaded to a device. All interoperable components of the system must consider accessibility in their design to accommodate persons with disabilities.

Online Viewing

HTML content and browsers created in conformance to the Web Accessibility Initiative (WAI) specifications are Universally Designed and fully accessible to persons with disabilities of all types. It is recommended that WAI guidelines be used in the development of the online interface to the content.

Down loadable Content

Downloads of digital publications are used on a personal computer and on mobile devices. The interface must be accessible using common AT. The AT industry has created adaptation's for computers that enable all types of persons with disabilities to use computers. Improperly created applications block AT from working properly. It should be possible, for example, for a vendor of a product to ask a blind student at a university to use their screen reader and use the application with the same degree of effectiveness as any other student.

Many dedicated mobile devices on the market are used by persons with disabilities. For example, PDAs with refreshable braille screens are used in place of Blackberries or cell phones. No portable device will be ideal for all people, so interoperability with a range of adapted mobile devices is required of the distributed content.

Common mistakes

- + Vendors of digital publishing software claim that this technology works on all PCs and for all students.
 - They will quickly point out that persons with certain disabilities, such as blindness, will be required to have an accessible version produced by an alternative content producer.

- + Vendors report that this is a closed system and the content can be used only with their software, i.e. there is no interoperability outside their product line.
 - This means that personal mobile devices are blocked from using the digital content. This also means that alternative reading applications running on the PC will not be allowed to access the content.

- + Vendors claim that PDF is the only content they can get from publishers, so their product is based completely on the visual page presentation.
 - More and more publishers have content available in XML, but even if it is made available to them only as PDF, the PDF should be converted to something appropriate for digital products. Many vendors are available to assist with the conversion of this content.

- + Vendors claim that it would be too expensive or time consuming to produce an XML product.
 - This argument is in essence delaying the adoption of digital content by saying that the only thing they can do is to create a visual equivalent of the printed book instead of a truly digital version.

PART III: Conclusion and Recommendations

Colleges, universities and university bookstores must ensure that any digital publishing services (including e-textbooks, e-books and e-reader devices) they offer to their patrons are universally designed to be fully accessible to blind and print disabled students and faculty. Accessibility is not only a legal requirement, but is efficient and cost-effective, and the right thing to do.

RECOMMENDATIONS

To ensure that the digital publishing system your institution is considering will be universally designed and accessible to your students and staff who are blind and print disabled, we recommend the following:

- Insist that accessibility be a requirement from the time your institution first introduces the idea of incorporating digital publishing, and ensure that

requirement is carried throughout the negotiation and contract process with publishers or content distributors.

- Consult with your institution's Accessibility or ADA Coordinator and include him or her as part of the team looking into the digital publishing systems and in meetings and conversations with publishers and distributors.
- Include accessibility and the criteria set forth in Part II as a requirement in your RFPs.
- As you talk to publishers and distributors about their products, tell them that your institution requires any digital publishing system and associated interoperable devices to be fully and equally accessible to students with disabilities. Ensure that their products meet the criteria discussed in Part II and familiarize yourself with the Common Mistakes listed in Part II to avoid those pitfalls.
- Have your DSS office independently test the digital publishing system you are considering for accessibility to ensure that it meets the criteria in Part II.
- Require "full and equal accessibility" as part of your contract with publishers and distributors of digital content, that is, that blind and print disabled users of screen access software may acquire the same information, engage in the same transactions, and enjoy the same products and services offered sighted users, with substantially equivalent ease of use.