

Upholding Accessibility Standards When Selecting Tech Tools

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Abstract

Research-supported guidelines to assist faculty with finding and evaluating online course tools and media that are accessible to learners taking online college courses in the United States are not generally available. The recent refresh to Section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794(d)) provides justification for educators to uphold accessibility standards by selecting from the outset, online course tools and media that are accessible to all learners, including learners with disabilities. Through a review of the literature, this paper will provide research-supported guidelines for faculty for finding and evaluating online course tools and media that are accessible to learners taking online college courses in the United States.

Introduction

A variety of information and communication technology (ICT) is available for faculty to present material, to have learners express what they know, and to engage learners in online college courses in the United States. However, the literature had not adequately addressed the faculty member's role in selecting such technologies that are accessible and inclusive of learners with disabilities. ICT encompasses online course tools and media used in online college courses in the U.S. and includes, but is not limited to, digital books, journals, and articles; software applications; web pages and applications; telecommunications products; video and multimedia products; and personal computer devices (United States Access Board, 2017). Accessibility takes its definition from universal design, which means the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design (The Center for Universal Design, 1997). According to the World Wide Web Consortium (2016), accessible means perceivable, operable, understandable, and robust.

The literature lacked research that specifically provides faculty with guidelines for finding and evaluating online course tools and media that are accessible to learners taking online college courses in the U.S. The guidelines will assist faculty with upholding accessibility standards and selecting from the outset, online course tools and media that are accessible to all learners, including learners with disabilities. Research on guidelines for selecting technology tools that are accessible and inclusive of learners with disabilities is significant to the field of online learning in higher education because learners with disabilities have the right to equal access and equal opportunity to participate fully in online courses (Burgstahler & Cory, 2008). This right includes the opportunity to use and access ICT in an equally effective and equally integrated manner (National Council on Disability, 2016). To uphold accessibility standards, faculty should avoid waiting to receive a letter of accommodation before addressing accessibility. Making subsequent individual adaptations can cause costly delays in access for learners. To pro-

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vide the context for this research, the literature review begins with a section on efforts in the field to design accessible online learning environments. The next sections provide the theoretical framework for the research, and discuss five guidelines and four resources to assist faculty with finding and evaluating online course tools and media that are accessible to learners taking online college courses in the U.S.

Guidelines for Accessible Online Learning Environments

Faculty are a primary group involved with supporting the needs of learners with disabilities and play a collaborative role with the office of disability services in upholding accessibility standards at their institutions. Guidelines for accessible online learning environments can be improved by adding specific guidelines for faculty on selecting technology tools that are accessible and inclusive of learners with disabilities. Federal agencies have guidelines, set forth by the Government-wide Section 508 Accessibility Program, for developing, procuring, maintaining, and using accessible information and communication technology (ICT). Guidelines exist for creating accessible digital content and web sites (World Wide Web Consortium Web Accessibility Initiative, 2016 & WebAIM, 2017). Guidelines for online service developers to improve accessibility and usability for persons with disabilities are readily available (Dell, Dell, & Blackwell, 2015; Disability Compliance for Higher Education, 2013; Gladhart, 2010; Massengale & Vasquez, 2016; Quality Matters, 2014; Radovan & Perdih, 2016; Sutton, 2017).

Even with the availability of a number of resources for creating accessible online environments, gaps in compliance with accessibility standards still exist in postsecondary institutions (Cifuentes, Janney, Guerra, & Weir, 2016; Fichten, Asuncion, & Scapin, 2014). Gaps in awareness of accessibility standards also exist among faculty. Gladhart (2010) found that there was a disconnect between the number of online instructors who have students with documented disabilities and the instructors' awareness of strategies to improve the accessibility of their course materials. Cifuentes et al. (2016) and Fichten et al. (2014) identified opportunities to address gaps in compliance with accessibility at the campus- and course-level. However, guidelines for faculty for finding and evaluating online course tools and media that are accessible were not provided. Further research is needed to compose such guidelines.

Theoretical Framework

Universal Design for Learning (UDL) serves as a framework for this research. UDL is grounded in research from neuroscience and individual differences in the way the brain learns (Rose, Harbour, Johnston, Daley, & Abarbanell, 2006) and moves away from standard "one-size-fits-all" curricula toward addressing the full range of learning abilities, disabilities, and individual differences present in any group of learners (Hall, Meyer, & Rose, 2012). The United States Department of Justice defines a disability in the Americans with Disabilities Act of 1990, as amended, as "(a) a physical or mental impairment that substantially limits one or more major life activities; (b) a record of such an impairment; or (c) being regarded as having such an impairment" (p. 7219). The United States Congress defines Universal Design for Learning as a "scientifically valid framework for guiding educational practice that provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and reduces barriers in instruction" (Higher Education Opportunity Act, 2008, p. 3088). Universally designed online courses utilize accessible instructional media and practices (Hope, 2016). Faculty are reducing barriers that would interfere with learners using information and communication technology (ICT) in their online courses and are creat-

ing a more inclusive online learning environment by selecting accessible ICT. The impact of applying UDL extends beyond learners with disabilities. While an inclusive online learning environment that reduces barriers in instruction benefits learners with disabilities, accessible course tools and media have the potential to provide a quality learning environment for all learners (Rose et al., 2006). A universal design is one where all learners with all their individual differences have equal and fair access and opportunity to learn the same content in ways that work best for them (Hall et al., 2012).

The next sections of the literature review will discuss other studies and federal and state accessible procurement procedures that contribute to a set of five guidelines and four resources for faculty. The following guidelines were composed from the literature review to assist faculty with upholding accessibility standards when selecting technology tools:

- Research accessible online course tools and media.
- Obtain accessibility information for the online course tools and media.
- Evaluate the online course tools and media.
- Implement alternative means when a fully accessible solution is not available.
- Revisit the accessibility information annually.

Guideline 1 - Research Accessible Online Course Tools and Media

The first guideline for faculty in finding and evaluating online course tools and media that are accessible to learners taking online college courses in the United States is to research accessible online course tools and media with anticipation that learners with various types of disabilities will be enrolling in their online courses. A small amount of research has been conducted on the number of learners with disabilities enrolled in online courses. According to the U.S. Department of Education National Center for Education Statistics' Digest of Education Statistics (2013), approximately 23 million undergraduate students enrolled in postsecondary institutions in 2011-2012. Eleven percent reported having a disability. In fall 2007, 50 percent of the approximately 1,600 Title IV degree-granting postsecondary institutions in the U.S. reported having received a request for accommodation in their distance education program (U.S. Department of Education National Center for Education Statistics, 2009). It should be noted that these figures may actually be higher because it is less common for learners who received accommodations in high school to identify themselves as having a disability or to choose to disclose a disability after reaching postsecondary school (Wagner, Newman, Cameto, Garza, & Levine, 2005). When researching accessible online course tools and media, it is important for faculty to recognize the difference between accessibility and accommodations (Burgstahler & LaGrow, 2016). Accommodations for learners with disabilities are adaptations that are tailored for that individual person and are necessary when the learning environment is not accessible from the outset. The authors recommend that faculty aim for accessibility because it can reduce the need for accommodations (as cited in Sutton, 2017). The Disability Compliance for Higher Education's National Survey (2013) revealed that technology-related accommodation requests are becoming increasingly common. Therefore, selecting online course tools and media that learners with various types of disabilities can access in an equally effective and equally integrated manner has the potential to reduce the need for technology-related accommodations. Faculty should also recognize that there is no one-size-fits-all solution and provide multiple options for presenting material, having learners express what they know, and engaging learners (Hall et al., 2012).

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The number of resources available for locating accessible online course tools and media is limited. Four resources were found to assist faculty with finding accessible online course tools and media.

- The Center on Online Learning and Students with Disabilities developed a *Sample of Technologies used in K-12 Online Education*. While the resource is designed for K-12, many of the products are applicable in higher education. The resource provides a list of software products, digital materials, and their available Voluntary Product Accessibility Template (VPAT) and product accessibility information. The resource is available at <http://centeronlinelearning.org/resources/vpat/>.
- The Government-wide Section 508 Accessibility Program developed a *Vendor Accessibility Resource Center*. The resource provides a list of information and communication technology companies' websites with links to their product or service accessibility information. The resource is available at <https://www.section508.gov/content/varc/>.
- The National Center on Universal Design for Learning developed the *UDL Tech Toolkit*. The resource provides information on a variety of free technology for implementing Universal Design for Learning. The resource is available at <http://udltechtoolkit.wikispaces.com/>.
- CAP THAT! provides a searchable database of both free and subscription-based educational videos with captions. The resource is available at <http://www.capthat.com.au/find-captioned-videos>.

Guideline 2 - Obtain Accessibility Information for the Online Course Tools and Media

The second guideline for faculty in finding and evaluating online course tools and media that are accessible to learners taking online college courses in the United States is to obtain accessibility information for the online course tools and media from the vendor, publisher, or content contributor. As faculty are conducting market research on potential technology to use in their online courses, they should include accessibility (General Services Administration, 2015). The University of Washington (2017) and Fichten et al. (2014) recommend asking vendors to provide information about the accessibility of their online course tools and media. To help vendors communicate product accessibility information or statements of conformance with accessibility guidelines, the Information Technology Industry Council created the Voluntary Product Accessibility Template (VPAT). A complete and accurate VPAT shows the vendor's commitment to providing a quality experience for all users by documenting and addressing accessibility issues. The United States Access Board published a final rule that updated the Section 255 Guidelines for telecommunications products and services and the Section 508 Standards for information and communication technology (Federal Register, 2017). The VPAT has also been updated to version 2.0 for vendors to document conformance with the Revised Section 508 Standards, the Web Content Accessibility Guidelines 2.0 (WCAG 2.0), and the European Union's EN 301 549 accessibility requirements for information and communication technology (Rice, 2015).

Addressing accessibility of technology is a matter of quality and a matter of civil rights (Rice, 2015). Civil rights legislation mandates nondiscrimination on the basis of disability and the provision of full and equal access to services, programs, and activities (Section 255 of the Communications Act of 1934, as amended; Sections 504 and 508 of the Rehabilitation Act of 1973, as amended; Titles II and III of the Americans with Disabilities Act of 1990, as amended). Available VPATs and compliance statements may be obtained (a) from the *Sample of Technologies* and *Vendor Accessibility Resource Center* resources described in the first guideline, (b) from the vendor's website, or (c) by contacting the ven-

dor, publisher, or content contributor to request a detailed response to the online course tool and media's conformance with the WCAG 2.0 guidelines.

Guideline 3 - Evaluate the Online Course Tools and Media

The provision of a Voluntary Product Accessibility Template (VPAT) and accessibility conformance statements does not guarantee accessibility. Thus, the third guideline for faculty in finding and evaluating online course tools and media that are accessible to learners taking online college courses in the United States is to evaluate the online course tools and media to validate its accessibility claims. The University of Illinois at Urbana-Champaign (2016) and the General Services Administration (2015) recommend performing an accessibility review of the online course tools and media. In this phase, the faculty member would solicit assistance from an expert in the institution's office of disability services to evaluate the VPAT and coordinate use case testing, where users that have disabilities perform real-world tasks with the online course tools and media to identify issues with accessibility or barriers to access (Khatri, Kaur, & Datta, 2015). End users are also invaluable resources for evaluating the accessibility of online course tools and media. Campus offices of disability services have gained the student perspective on accessibility needs through collaborations with students and the community. Betts et al. (2013) and Rao & Tanners (2011) used a student panel to gather the student perspective on accessibility in online learning and the features that they valued. The students recommended strategies for increasing student success based on their own online experiences.

Guideline 4 - Implement Alternative Means When a Fully Accessible Solution is not Available

Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design (The Center for Universal Design, 1997). If the evaluation reveals that the online course tool or media is not fully accessible, the fourth guideline for faculty in finding and evaluating online course tools and media that are accessible to learners taking online college courses in the United States is to implement alternative means. Fichten et al. (2014) recommend that colleges and universities insist that vendors provide accessible alternatives to address accessibility gaps in their online course tools and media while those issues are being addressed. The California State University (2009) requires the completion of an Equally Effective Alternative Access Plan before the procurement of information and communication technology. With guidance from the institution's office of disability services and the vendor, the faculty member should develop the alternative access plan to establish how equally effective alternative access to the information or service delivered by the technology will be provided. The plan should also include what resources are required and what workarounds are available to implement the plan. During this process, faculty are considering their learning objectives and the alternative ways to present material, assess, and engage learners who cannot access or use the tool or media. Burgstahler (2015) recommends beginning this process early to allow adequate time for the selection of accessible technology and for providing equally effective alternative access in an appropriate manner. The alternative access plan should be developed before purchasing the technology (CAST, 2017).

Guideline 5 - Revisit the Accessibility Information Annually

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Online course tools and media are ever evolving. The National Council on Disability, in its 2016 edition of *National Disability Policy: A Progress Report*, proposed a Technology Bill of Rights for People with Disabilities. The bill emphasizes that in order to engage in full citizenship, the right to equal and fair access to existing and emerging technology is essential. The bill expresses the obligations of the public sector, technology developers, private industry, and people with disabilities to evolve in their practices as technology evolves. After purchasing online tools and media, updates are normally released annually. The fifth guideline for faculty in finding and evaluating online course tools and media that are accessible to learners taking online college courses in the United States is to revisit the accessibility information annually after updates are issued. The University of Washington (2017) and the University of Illinois at Urbana-Champaign (2016) recommend that the contract for procuring the technology include language that assures continued accessibility as the online course tools and media are updated. San Francisco State University (2017) recommends asking the vendor for a new Voluntary Product Accessibility Template and reviewing the Equally Effective Alternative Access Plan when an update is released for the online course tools and media. Use case testing would be necessary if significant new features are added.

Summary

This review of literature provided five guidelines and four resources to assist faculty with finding and evaluating online course tools and media that are accessible to learners taking online college courses in the United States. This review of literature helps raise awareness of the collaborative role that faculty play in institutional compliance with the Revised Section 508 Standards. It expands the existing body of literature by providing guidelines to assist faculty with upholding accessibility standards when selecting, from the outset, technology tools that are accessible, thus removing instructional barriers and providing a learning environment where all learners can benefit. Future research is encouraged that collects complete and accurate Voluntary Product Accessibility Templates, accessibility conformance statements, use case test results, and end-user comments from vendors, publishers, and content contributors on information and communication technology. This information can be used to build a repository to facilitate the process of researching, evaluating, and selecting accessible online course tools and media. Future research is encouraged to inform developers, publishers, and content creators of the diverse needs of learners taking online college courses and the technical requirements for designing accessible information and communication technology so that all learners are provided with full and equal access.

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