



State of practice in accessible instructional material policy in public post-secondary settings

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Abstract

For many students, easy access to instructional materials is an expectation of course enrollment. However, for students with disabilities, obtaining instructional materials may involve hurdles such as transcription, captioning, and requesting a braille or large-print version. In order to explore themes related to accessibility and services for students with disabilities, the goal of this study was to examine the similarities and differences between publicly communicated policies related to accessible instructional materials in public post-secondary educational settings. To that end, this study consists of website-provided accessible instructional materials policy of 60 higher educational institutions, representing five American geographic areas and four institutional types in order to discover common themes in the presentation of findings. While high resource institutions presented the largest breadth of findings, duplication of purposes meant that some institutions with lower resource levels presented materials in a more comprehensive grouping manner. In addition, evidence exists that institutions are presenting an incomplete picture of accessibility requirements and despite the prevalence of resources, service regarding accessible instructional materials is uneven across institutional types and locations.

Keywords: Instructional Materials, Accessibility, Campus Policy, Accessible Instruction

Providing accessible instructional materials in academic settings is important for promoting equality and complying with federal and state laws. So powerful has been accessibility-related legislative and lobbying activity, that the federal Department of Education has created an Advisory Commission on Accessible Instructional Materials in Postsecondary Education for Students with Disabilities (ed.gov/about/bdscomm/list/aim) in order to forward initiatives and progress. However, at the state level, policies ensuring equitable access to library and instructional resources have been slow to develop with some states adopting policies only in recent years, and as of this writing, 28 states do not have a policy in the overall category of instructional materials adoption (State Educational Technology Directors Association, 2018). In addition, there is evidence that reaction to, and implementation of, state policies is inconsistent or uncoordinated in the filter down from systems to institutions (Adams, Halaychik, & Mezick, 2018) and perhaps vulnerable to compliance challenges. Even worse, policies trickling down to the institutional level may not reflect best practices despite widespread attention to accessibility concerns in the field of education (O'Connor, 2014; Flaherty & Roussy, 2014). Ideally, institutions might invest in a Center for Accessible Materials or a library accessibility specialist; however, recent field discussion indicates that role is quite new and often not dedicated to accessibility support on a full-time basis (Rosen, 2018). Worse, there is widespread acknowledgment that the availability of accessible instructional materials exists on a continuum in high-resource countries (Blummer & Kenton, 2017; George et al., 2014) and other international settings (Mishra, Pattanaik, & Mahapatra, 2017; Phukubje & Ngoepe, 2016). Proactive field discussion from publishing interests acknowledge that complacency is related to a lack of

legal mandates requiring publishers to make materials accessible (Axelrod, 2017), as well as a slow transition to accessible standards, such as a replacement of PDF by EPUB as a standard in accessible documentation (Conrad & Kasdorf, 2018).

Despite trends in accessibility services to offer a proactive educational setting, services in post-secondary institutions still center on a reactive model (Slater et al., 2015) with wait-times to receive accessible materials commonly exceeding field standards of two days by a significant amount (Brand, Valent, & Danielson, 2013). Students in some disability categories are less likely to enroll in higher educational programs (Grigal, Hart, & Migliore, 2011; Wei et al, 2013), and have poorer retention (King, 2014) and time to degree rates (Knight, Wessel, & Markle, 2016), although mitigations such as transition planning and goal-setting are effective (Wei, Peng, & Chou, 2015). In addition, field literature points to a significant lack of training for preservice teachers (Vitelli, 2015) and expertise in faculty regarding accessibility issues and accommodations (Levey, 2018; Gallego & Busch, 2015), although educational interventions are highly effective for promoting accessibility issues at design levels (Larkin, Dell, & Hitch, 2016). With an uptick in the number of students classified with a learning disability (Cortiella & Horowitz, 2014), it has never been more important to address current shortfalls in accessible instruction. Course support ideals may be closer than we think as emerging field literature is increasingly positioning accessible course resources into best practice models for effective learning (Cifuentes et al., 2016; Small, Myhill, & Herring-Harrington, 2015).

Literature Review

Since access to education is considered one of the primary ways to access high-paying employment and influence quality of life, several federal laws address accessibility, with one of the most prominent being the American with Disabilities Act (ADA) along with its titled concerns related to places of public accommodation (Title III, 42 U.S.C. §§ 12181–12189) and telecommunications (Title IV, 47U.S.C. § 225). In addition, section 504 (29 U.S.C. § 701) of the Rehabilitation Act of 1973 and section 255 of the Telecommunications Act (FCC, 2013) have provisions that directly impact higher education.

Policy and Legal Requirements

In their literature review, Yang and Chen (2015) noted that state laws on Web accessibility fall on a continuum of variation ranging from executive policy to legislation with guidance offered by field standards. The literature review of this current study updates Yang and Chen's Table 1 Listing of State Web Accessibility Policy to note that only the states of Nevada and Wyoming still do not offer an accessibility policy as of this writing; however, Nevada offers an extensive website addressing their compliance with federal accessibility law. Three other states (Delaware, North Carolina, and Oregon) offer an accessibility statement and either offer information about their status of compliance issues or discuss how their state websites have implemented accessibility mitigation. Enforcement of the ADA falls to the Department of Justice's Civil Rights Division and despite these robust laws, the Information Technology Systems and Services department at the University of Minnesota at Duluth has compiled an up-to-date list of 37 complaints related to higher education accessibility that represent a range of institutional types (<http://www.d.umn.edu/~lcarlson/atteam/lawsuits.html>). Field organizations would seem to concur with observed lapses due to significant investment in instructional material accessibility standards development (National Center on Accessible Educational Materials, 2004).

For instructional materials provided in a closed environment to a known audience, materials must be compliant with federal and state laws, and material must be accessible to a student who presents with a

qualifying disability. For public materials, the institution opens itself to liability as not being accessible if materials are not compliant.

Effectiveness of Accessible Instructional Materials

Increasingly, higher education is adopting a universal instructional design principle as a framework for instructional design, learning platforms, and communication mediums as research in indicating that the employment of universal design is improving student learning (Black, Weinberg, & Brodwin, 2015). The use of Universal Design principles and technology interventions in accessible instructional materials have been shown to be effective for reducing preparation and student wait times (Kaufmann, Perez, & Bryant, 2018) and increasing student satisfaction with instructors (Basham, Lowrey, & deNoyelles, 2010). Yet, despite a healthy set of Universal Design principles, guidelines, and related literature, Alexrod (2017) noted that the state of accessible materials has been little changed since a 2011 report to Congress offering progress recommendations, even though calls to scale up Universal Design adoption in the field are prevalent (Izzo & Bauer, 2015; Moore et al., 2017). Faculty knowledge of accessibility information is still a barrier to effective instruction with deficits noted in the number of institution-based experts (Shinohara et al, 2018), methods of improving the accessibility of materials (Gladhart, 2010), as well as legal mandates, mitigating instructional barriers, and accessible material formats (Lombardi & Murray, 2011).

Given that most individuals access instructional materials through some type of Web presence or learning management system, and that high interaction with provided online components has been linked to higher achievement (Akhtar, Warburton, & Wu, 2017; Wei, Peng, & Chou, 2015), environment accessibility is a relevant topic. While most higher education institutions have had a website presence for nearly thirty years with the structure supporting Web communication expanding to embrace technical and promotional aspects, the quality of Web content (Margolin, Shazia, & Rosenbaum, 2014) and accessibility and usability of website versions (Azadbakht, Blair, & Jones, 2017; Ringlaben, Bray, & Packard, 2014) has not consistently met demand with Massengale and Vasquez (2016) finding that five (5) types of challenges involving formatting, resource links, content presentation, incompatibility, and scripting issues consistently impact the accessibility of online courses. In fact, a comparable analysis of university websites by Alahmadi and Drew (2015) revealed that accessibility issues are requiring increased resolution time and resources, likely linked to the increasing complexity of content delivered in various formats. In reviewing the literature, while usability testing of websites is a common theme, linkages to accessibility is less common, with field discussion indicating that low accessibility ratings for higher education websites in American and international settings are widespread. Some discussion elevates this concern to indicate a disregard for accessibility guidelines and legislation (Acosta-Vargas, Acosta, & Luján 2018; Akram & Sulaiman, 2017). Moreover, usability testing tends to focus on navigational features, such menus and links, and with usability concerning content items typically restricted to discussion related to format robustness, such as a presentation of a PDF, and less on testing for the presence of universal design principles.

In addition, recent research has revealed low accessibility compliance with popular Learning Management Systems (LMS) for various populations (Chen et al., 2015; Pirani & Sasikumar, 2014) despite prominent field recommendations for LMS to include accessibility and Universal Design as one of five core functionalities (Brown, Dehoney, & Millichap, 2015). Kent (2015) would seem to agree, noting the low field organization certification rate of learning management systems at a top-tiered level, which indicates the highest rates of compliance.

Dong and Lucas (2016) found that identified students are not requesting accommodations in a number compatible with their representation, despite the proven effectiveness of the accommodation. Seale et al., (2015) would seem to agree with findings from their study, indicating that students are not exploiting resources to their full extent, with resources not appropriately or effectively dispersed or managed for the population. While accuracy is continuing to improve for technologies related to accessibility (Chern et al., 2017), such as transcription or captioning technologies, known technology limitations continue to challenge stakeholders wishing to easily incorporate accessible mechanisms into material provision (Dunnam, 2016; Zekveld et al, 2009). DeLancey (2015) questions the trustworthiness of commercial solutions with finding that a significant amount of vendor-supplied materials purported to be accessible when they were not compliant. Research literature notes a dearth of studies concerning the effectiveness of various institutional support services in general (McGuire, 2014), as well as for various populations, such as the hearing-impaired population (Noble, 2010).

Based upon this literature review, preparation for data collection and analysis involved an awareness that the policies presented may be reflective of advocacy initiatives and motivations of local settings. For example, studied institutions with prominent special education academic programs might more closely reflect best practices as their faculty experts organically engage with campus stakeholders.

Methodology

As consistent with research investigations of website provision of policy (Grana & Ling, 2014; Rains & Bosch, 2009), a content analysis methodology quantified and analyzed the presence of findings in context with field guidelines regarding accessibility issues. The population of interest was accessible material policies reflecting the continuum of public American college and university settings. Therefore, a strategic sample of 60 postsecondary institutional websites, representing five American geographic areas and four institutional types: very high research activity, master's level, state colleges or bachelor's level, and community colleges were studied to discover common themes in the presentation of findings. The study literature review informed the creation of a coding instrument with identified themes and policy specifics. The coding instrument developed with both *a priori* and empirical observations, with both members of the research team offering refinement to the developing instrument during the pilot study resulting in the final instrument used in the research study (Neuendorf, 2016). The pilot study consisted of a convenience sample of one state's continuum of public institutions and immediately proceeded the research study.

Searched Websites deployed a categorical search of likely subunit sites, including Disabilities Services, Center for Teaching Excellence, Instructional Technology, and Distance Learning, as well as a Search Term search. Search terms included: accessibility of instructional materials, accessible material policy, and captioning. Since disability services is typically a function of a larger student services unit, searching focused on faculty-facing materials. Searching continued until researchers were confident that all avenues were exhausted. With only three institutions (5%) not presenting any findings, researchers were confident that their search method was robust, given that a 2013 study found that only 8.4% of post-secondary institutions had Web or technology accessibility policies (Thompson et al., 2013). Findings were recorded in the coding instrument by two independent passes of members of a research team that consisted of a primary investigator and trained assistant. Therefore, with 215 investigations, intercoder reliability was measured at .83 according to guidelines by Lombard, Snyder-Duch, & Bracken (2002). When findings resulted in a dispute, a consensus round was deployed to determine finding prominence. Findings were judged as relevant if provided in the policy itself or immediately adjunct as part of a contained sponsor Website or other designated Website. Materials that addressed accessibility of web promotional materials were disregarded unless there was evidence that the provision served multiple

purposes—a common tactic at smaller institutions. Finally, in order to illustrate a commitment to services, one service related to accessible instructional materials (in this case video captioning) served in the investigation.

Results

In the below tables, when multiple findings occurred, the top two most significant findings were reported.

Table 1

Incidence rates of Accessible Instructional Material policy elements for entire sample

| | Sample incidence rate |
|---|--|
| Policy purpose | 51.6% accessibility 28.3 % accommodation |
| Legal Mandate | 48.3% federal only 21.6% federal and state 21.6% no mandate listed |
| Extent that policy is enforced | 20% accommodation 15% recommended |
| Definitions provided | 139 |
| Content development guide | 60% |
| Resources\ Accessibility Evaluation Tool | 58.3% |
| Captioning\ Transcription Service | 48.3%/9% |
| Responsibilities stated | 46.6% |
| Policy Exceptions | 28.3% |
| Standards provision\reference | 28.3% |
| Non-discrimination\equal opportunity statement | 26.6% |
| Provision of syllabus statement\template | 23.3% |
| Purchasing accessible materials | 23.3% |
| Grievance process | 20% |
| Confidentially | 18.3% |
| Priority algorithm | 13.3% |
| Temporary Disabilities | 10% |
| Implementation Plan | 8.3% |
| Parent\family resources | 8.3% |

Table 2
Incidence rates of Accessible Instructional Material policy elements by Institutional Type

| | Very High Research | Master's-level | State Colleges | Community Colleges |
|---|---|---|---|--|
| Policy purpose | 60% accessibility 26.6% accommodation | 53.3% accessibility 26.6% accommodation | 33.3% accessibility 40% accommodation | 46.6% accessibility 26.6% accommodation |
| Legal Mandate | 40% federal only 33.3% federal and state | 53.3% federal only 26.6% no mandate listed | 46.6% federal only 26.6% federal and state | 60% federal only 20% federal and state |
| Extent that policy is enforced | 23.3% indicated | 30% indicated | 23.3% indicated | 23.3% indicated |
| Definitions provided | 47 | 58 | 25 | 9 |
| Content development guide | 36% | 27.7% | 16.6% | 19.4% |
| Resources\ Accessibility Evaluation Tool | 34% | 22.8% | 23.2% | 20% |
| Captioning\ Transcription Service | 34.4% | 31% | 21% | 13.7% |
| Responsibilities stated | 17.8% | 28.5% | 14.3% | 21.4% |
| Policy Exceptions | 29.4% | 23.5% | 23.5% | 23.5% |
| Standards provision\reference | 41.1% | 23.5% | 11.7% | 23.5% |
| Non-discrimination\equal opportunity statement | 43.7% | 23.5% | 20.2% | 12.5% |
| Provision of syllabus statement\template | 35% | 28.5% | 35% | 7% |
| Purchasing accessible materials | 50% | 21.4% | 7% | 21.4% |
| Grievance process | 0% | 18% | 50% | 32% |
| Confidentially | 36.3% | 36.3% | 9% | 18% |
| Priority algorithm | 62.5% | 25% | 12.5% | 0% |
| Implementation Plan | 40% | 20% | 0% | 40% |
| Parent\family resources | 40% | 20% | 40% | 0% |

Table 3
Meta information

| | |
|-----------------------------|--|
| Policy Sponsor | Disability Services 35% 18% Accessible Materials or Technology Committee 12% unclear 10% Student Services 7% Information Technology Services 7% Other 5% Center for Teaching Excellence 5% no policy provided |
| Policy Name | Variation of Accessibility policy 35% Variation of environment policy 20% Variation of accommodation policy 20% Variation of faculty\instructional name 15% Other 10% |
| Course Certification | 3% |

Discussion

In this study, typically two content areas revealed Web accessibility policy findings: web communication and marketing for promotional website purposes, and, the focus of this study, the accessibility of instructional materials provided through some Web platform, such as a Learning Management System. Policies of the latter category are typically found under a provost-controlled area, such as Disabilities Services or an umbrella organization of Student Services, the institutional center for teaching excellence, or instructional technology support unit. However, 27% of institutions either did not identify a sponsor or made sponsorship unclear, provided sponsorship under an unaffiliated unit such as Public Relations, or did not provide a policy.

While the findings of this study regarding policy purpose recorded the exact words, it is important to recognize distinctions, especially given that only 35% of eligible higher education students seek accommodations (Newman et al., 2011). Accessibility refers to the provision of materials, such as video captions, for all students so that others besides those without an identifiable disability might benefit. Accommodation refers to provision for a specific, identified student. This study's findings that the provision of a purpose and legal mandate was important to user perception is seemingly confirmed by McClellan et al. (2016), who noted the importance of fulfilling end-user expectations.

While some results, including higher aggregate category averages, indicate that well-resourced institutions have a more comprehensive Accessible Instructional Materials program with dedicated committee sponsorship and a greater number of finding appearances, this may not reflect the true state of affairs. In some cases, policy materials disseminated broadly through the organizational structure with policy at some smaller institutions are doing double duty to reflect web promotional materials. In the opposite extreme, larger institutions have a repetitive structure geared to audiences. Specific resource support was a popular theme of this study. A positive surprising finding was the large number of institutions that have committed to accessibility by providing links to external resources and/or some type of evaluation tool or guide so that faculty participants can foster a more accessible environment. A significant number of institutions offer some form of video captioning or transcription service, a practice

well-aligned with field recommendations due to their impact on comprehension of video content in populations of deaf students (Tyler et al., 2009).

The literature review prepared us for findings of significant knowledge constraints among faculty, so this study's findings that a significant number of institutions proactively provide a statement or template for faculty to incorporate into a syllabus is not surprising. The specific address of purchasing in policy materials was unexpected, with expectations being that purchasing regulations are hosted in a Business Affairs section or not provided publicly. Clearly, wider provisions in an accessibility policy benefit a wide swath of stakeholders, some of whom may be invested in decision-making on behalf of the institution. Given that several policies explicitly note that accommodation occurs to the extent feasible, it is surprising that an explicit address of a grievance process occurs in low numbers; the federal Office of Civil Rights (OCR) encourages the adoption and publication of multiple internal grievance procedures (OCR, n.d.). Several findings of low significance appear to be used by policymakers to raise awareness of a particular issue. For example, findings of policy address of confidentiality are low when in fact, given the narrow scope of this policy, the numbers are believed to be high with the majority of institutions offering a general statement of confidentiality of student data in a more prominent, general area with applicability to all students. As indicated in the methodology section, findings were only listed if found in the policy or on a closely related page or area; other low findings that potentially raise awareness include the provision of a non-discrimination or equal opportunity statement.

While a relatively low number of institutions publish their algorithms for determining service priorities, a surprising finding is that those that did, a large number consisted of high-resource institutions, although it may be that those institutions are fostering transparency and likely that low-resource institutions have an unpublished internal procedure. Field literature seems to confirm study supposition that an informal procedure exists for prioritizing disability service requests (Carey, 2015). Given the significant workload required to convert or otherwise produce alternative materials (Oku, Matsubara, & Booka, 2015), it is surprising that this study does not support that a large percentage of institutions are publicly communicating priority systems for handling service requests, although institutions may have reservations about making that information transparent for fear of discouraging requests. A surprising low finding was that few institutions addressed services to students with temporary disabilities; in addition, 5% of schools had policies that would seem to prevent students with temporary disabilities for applying for services after the semester had begun. Themes in the literature review concerning under compliance prepared researchers for findings related to broadcasting of an implementation plan, perhaps provided to show good faith efforts in complying with accessibility law.

Concerning the study variable meant to illustrate practice, when it comes to providing video captioning, universities are presenting a spectrum on the clarity of legal advice with some institutions stating that all material must be captioned while others note that closed settings with known audiences do not need to be captioned. Captioning is acknowledged to be "a best practice" for accessibility for all populations, including ESL, low hearing, etc (Mayes, 2018). With a significant number of institutions offering a service of evaluating materials and/or websites for accessibility, the topic is becoming increasingly complex with Smith and Stahl (2016) developing a UDL Scan Tool that moves beyond reliance on physical accessibility to test for compliance to Universal Design principles.

Middling findings regarding links or references to the Web and or accessibility standards would seem to echo Green and Huprich's (2009) findings of low percentages of materials passing accessibility evaluation. While a significant number of institutions provide information on accessibility standards, approximately 90% of those only refer to web accessibility and do not address other related issues, such as guidelines

for print content, an issue noted by Axelrod (2018). With only 28.3% of studied institutions referencing or providing field standards that inform their implementation, institutions have yet to align with Yang and Chen's (2015) guidance of tracking the latest iteration of standards, which indicates that even institutions that intend to be compliant could fall behind due to a failure to implement new recommendations in a timely manner. In addition, given that there are no accessibility guidelines for content in printed form (Axelrod, 2017), it is not surprising the standard provision is low. On the other hand, the relatively high findings of terminology definitions may reflect an attempt to address issues, such as those found by McGuire (2014) of significant confusion regarding terminology in the accessible instruction field. In addition, relatively high findings of guidance materials seem to concur with Dabrowski, Basinska, and Sikorski's (2014) findings that user guidance was one of the four website attributes that positively relates to website satisfaction, or, to extend the thinking, support of the organization sponsoring the provision of information. A low performing finding of this study was the provision of resources targeted to parents or families—a disappointing finding, given Cai and Richdale's (2015) finding of a high number of unplanned transitions from secondary school settings amongst students with Autism Spectrum Disorder.

This study's finding regarding several entities involved in the sponsorship of accessible instructional materials seems to echo field literature noting responsibility confusion among stakeholders in post-secondary accessibility initiatives (Linder, 2015). Low findings regarding robust findings of implementation plans for accessible materials seems to reinforce Linder's recommendations for the need for institutional investment, including staffing and resources. Disappointedly low findings were found for institutional certification of course accessibility or accessibility badging efforts—a recommendation gaining traction to indicate institutional commitment to demonstrating compliance and awarding compliant activity (Gay, Djafarova, & Zefi, 2017).

Future Research Directions and Conclusions

The literature review for this study identified significant gaps in supporting research and field literature, particularly regarding policy development and support of accessibility initiatives. There may be a fundamental flaw in accessibility research, particularly accessibility testing of platforms, materials, and technology, due to population sampling that includes large percentages of able-bodied individuals (perhaps due to convenience factors). In addition, this study found a lack of research implementing large-scale structures of accessibility, such as a system, Regents, or statewide structure in higher education. However, accessibility awareness may be expanding to include field depth with several areas celebrating successes (Azzopardi et al., 2014; Izzo & Bauer, 2015; Ladner, 2016) and self-identifying with the need to better address accessibility (Clouder et al., 2016; Neutens, 2015).

While few recommendations of a 2011 federal report have been implemented (Advisory Commission on Accessible Instructional Materials, 2011), educational accessibility has made progress from other field initiatives, such as the creation of a federal Center on Technology and Disability (<https://www.ctdinstitute.org>). An innovative W3C-WAI: New Horizons for 2020 panel and field organizational partners developed toolkits and resources for educational leaders to support instructional material development (Crossland et al., 2016). Stated commitments by higher education stakeholders include: publishers (Sage Publishing, n.d.; Macmillan Learning, n.d.; Wiley, n.d.), open material suppliers (OpenStax, n.d.), journals (ScienceDirect, n.d.; Oxford Academic, n.d.; JAMA Network, n.d.), e-book distributors (VitalSource, n.d.), and learning environments (Blackboard, n.d.; Canvas Document Team, 2015; Moodle, 2018). Complying with accessibility standards offers hope that the issue is penetrating to the depth and breadth of industry stakeholders. This study was inspired by the researcher's service on a state council invested in accessibility interests and with a mission to develop statewide policies, resources,

and practices to efficiently inform public higher education. Hopefully, this research will inform development and practices in similar groups, as well as higher education stakeholders to reject “separate but equal” forms of accommodation and change initiated by legal actions in favor of a more organic model that embraces Universal Design from the outset of course, program, and unit development and faculty professional development initiatives.

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