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Revisiting Alabama state website accessibility

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ABSTRACT

Potter's (2002) accessibility review of over 60 Alabama state-level websites was designed to establish a baseline for monitoring the state government's progress on online accessibility. The study found significant room for improvement. Only 20% of the reviewed sites met Section 508 requirements, and only 19% of the sites met WAI Priority 1 accessibility standards, based on a combination of automated evaluation and manual inspection of the code. In 2006, Alabama adopted ITS 1210-00S2: Universal Accessibility, which offered basic guidelines to assist developers in complying with Section 508 requirements. The current study revisits the state home pages that Potter evaluated to see how accessibility levels have changed over the years, particularly with the state's adoption of ITS-530S2. Like Potter, the current analysis is based on a combination of automated testing and a manual review of each page's HTML. The study found that compliance has not improved substantially since Potter's analysis and reinforces the idea that the presence of a standard does not correlate with compliance.

1. Introduction

As the World Wide Web rose in importance as an e-government tool in the 1990s, the federal government took steps to ensure that citizens and government employees had access to electronic-based government information, regardless of disabilities. Section 508 of the Rehabilitation Act (29 U.S.C. § 794d) addresses a range of e-government accessibility issues, including providing specific guidelines for online information and applications (§ 1194.22). Although Section 508 guidelines were designed specifically for federal agencies, the guidelines have the potential to be applied to some state and local governments, depending on the provisions of federal funds that the entities might receive. With calls for accessible e-government on the rise, state governments soon began crafting their own regulations, often directly incorporating Section 508 guidelines (Jaeger, 2004). Not all states took this route, however. The State of Alabama's Information Technology Standard 530S2-00: Universal Accessibility (ITS-530S2) is designed to "advise agencies on the use of the minimum requirements for online accessibility for all State of Alabama web sites that comply with Section 508." Rather than listing the full Section 508 provisions, ITS 530S2 provides six basic requirements for helping developers ensure compliance, including how to appropriately craft quality hyperlinks and image alternative attributes, and calling for developers to test sites on multiple browsers and to avoid using frames. The standard mandates compliance for most "Executive Branch agencies, boards and commissions," particularly those using the alabama.gov and state.al.us domain names (State of Alabama, 2011a,b). As this study found, however, adoption of accessibility guidelines does not necessarily equate to adherence.

Almost a decade has passed since Potter's (2002) 2003 accessibility review of over 60 Alabama state-level websites (the dates here are confusing as the study was technically published in a 2002 issue, but data collection was in 2003). Designed to establish a baseline for monitoring the state government's progress on online accessibility, the study found that although accessibility seemed to have improved since West (2002), state-level websites had tremendous room for improvement. Only 20% of the reviewed sites met Section 508 guidelines, and only 19% of the sites met WAI Priority 1 accessibility standards. Potter's study appeared at a critical time in e-government. Federal web accessibility standards, defined by Section 508 of the Rehabilitation Act Amendments of 1973, had only been codified since 1998, and many states, Alabama included, had no state-level accessibility mandate, relying instead on individual departments to make policies (Potter, 2002). In 2006, Alabama adopted ITS 1210-00S2: Universal Accessibility, renamed ITS 530S2-00 in 2011. Two years after the standard was in place, West (2008) found that accessibility problems were still endemic in state agency websites. Although West ranked Alabama's state-level e-government services eighth nationally, only 10% of the Alabama state-level sites passed an automated accessibility test. The average among the states was 19%. The current study builds on West and Potter by revisiting the state homepages that Potter evaluated in 2003 to see how their accessibility levels have changed over the years, particularly with the state's adoption of ITS-530S2. Like Potter, the current analysis is based on a combination of automated testing and a manual review of each page's HTML, including checking for the use of appropriate image alternative attributes and the phrasing of linked text. Each

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homepage was evaluated to see if it complied with three, often overlapping, standards: the World Wide Web Consortium's WCAG 2.0, the federal government's Section 508 guidelines, and Alabama's ITS-530S2.

2. Literature review

2.1. Web accessibility

For a website to be "accessible," content needs to be available to users regardless of disability. The W3C calls for designers to take into account a range of potential disabilities when designing a website. These disabilities include visual and auditory impairment, mobility limitations, speech impairment, cognitive limitations, and learning disabilities (W3C, 2008). The W3C also argues that accessibility is a critical element of the World Wide Web and that the web "is fundamentally designed to work for all people, whatever their hardware, software, language, culture, location, or physical or mental ability" (W3C, 2010). Tim Berners-Lee, architect of the World Wide Web and current W3C director, underscores the importance of accessibility and the ability of the web to empower disabled users, arguing, "the power of the Web is in its universality. Access by everyone is an essential aspect" (W3C, 1997). The United Nations echoed this sentiment in The Convention on the Rights of Persons With Disabilities. Adopted in 2006, the convention specifically calls for signatory nations to "promote access for persons with disabilities to new information and communications technologies and systems, including the Internet" (United Nations, 2006). The treaty received wide support internationally, not only being the most quickly negotiated human rights treaty to date, but also garnering the most signatures on the first day that it was able to be signed (United Nations, 2007).

2.2. Accessibility guidelines and legislation

Vanderheiden (1995) argued that the rise of graphics-based web browsers, such as Mosaic, raised issues for users with disabilities, particularly those with vision problems and, along with others, offered recommendations to assist web developers in making content more accessible. Many of these early guidelines, however, focused on offering general advice, such as telling designers to make sure that they "use sufficient contrast" without providing a definition for how much contrast is needed to be used (Vanderheiden, 2009). Researchers at the University of Wisconsin's Trace Research and Development Center eventually incorporated a number of these early guidelines into the *Unified Web Site Accessibility Guidelines* (Vanderheiden & Chisholm, 1998), which was in turn used as a starting point for the W3C's Web Content Accessibility Guidelines Working Group, responsible for developing the W3C's Web Content Accessibility Guidelines—WCAG 1.0 (W3C, 1999). The W3C (1999) divided checkpoints into three priority levels:

- Priority 1: A web content developer must satisfy this checkpoint. Otherwise, one or more groups will find it impossible to access information in the document. Satisfying this checkpoint is a basic requirement for some groups to be able to use web documents.
- Priority 2: A web content developer should satisfy this checkpoint. Otherwise, one or more groups will find it difficult to access information in the document. Satisfying this checkpoint will remove significant barriers to accessing web documents.
- Priority 3: A web content developer may address this checkpoint. Otherwise, one or more groups will find it somewhat difficult to access information in the document. Satisfying this checkpoint will improve access to web documents.

Meeting all Priority 1 checkpoints yields Level A conformance, meeting Priorities 1 and 2 gives a site Level AA conformance, and meeting all three priorities gives a site Level AAA conformance (W3C, 1999).

WCAG 1.0 proved to have broad influence on e-government, with a number of countries, including the United States, using it as a basis for their own accessibility guidelines (Donker-Kuijer, de Jong, & Lentz, 2010). The W3C introduced revised standards, WCAG 2.0, in 2008. While the new standards are largely backward compatible with the older standard, the new standards attempt to move past specifying requirements for HTML, to addressing accessibility issues across a wider range of web-related technologies. In creating the new standards, the W3C (2008) focused on website design meeting four basic accessibility principles.

- Principle 1: Perceivable—Information and user interface components must be presentable to users in ways that they can perceive.
- Principle 2: Operable—User interface components and navigation must be operable.
- Principle 3: Understandable—Information and the operation of user interface must be understandable.
- Principle 4: Robust—Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.

In the process, they moved towards creating more specific and testable processes. As an example, WCAG 1.0, Guideline 1.1 specifies that designers need to "provide a text equivalent for every non-text element" and offers examples of non-text items, including images, animations, sounds, and videos. The WCAG 2.0 discussion covers three guidelines and provides a description of what appropriate text alternatives might be for each medium (W3C, 2009). The new guidelines measure conformance similarly to the original WCAG guidelines, though the W3C has replaced "priorities" with "levels" in the actual descriptions of the guidelines, with Priority 1 being replaced by "Level A Success Criteria," etc. Conformance has been slightly expanded and now includes either the webpage satisfying Level A Success Criteria or providing a "conforming alternate version" (W3C, 2008). Li, Yen, Lu, and Lin (2012) found that, assuming that a site already meets WCAG 1.0 guidelines, migrating existing e-government sites to conform to the new guidelines required only minor modifications to the design.

Section 508 § 1194.22 was signed into law in 1998 and the resulting regulations went into effect in 2001. The regulations are based in large part on WCAG 1.0 standards (Olalere & Lazar, 2011). In theory, the Office of the Attorney General is supposed to report on federal agency compliance with the regulations on a biyearly basis, however the Department of Justice did not collect that data between 2004 and 2010, and of the 100 U.S. federal websites Olalere and Lazar (2011) visited, 90% had Section 508 compliance issues. The most recent Department of Justice (2012) report on federal agency Section 508 compliance as of FY2010, reinforces those findings, reporting, among other things, that only 67% of the agencies surveyed had an established process to ensure that those responsible for web content followed Section 508 guidelines, and that only 57.5% conducted regular website accessibility evaluation and remediation. While most agencies (82.4%) reported passing an audit of appropriate use of ALT attributes, video and multimedia seem to have received less attention, with 26.4% having a formal multimedia/video accessibility policy and 24.2% having no plans to develop such a policy (Department of Justice, 2012).

The United States Access Board, a federal accessibility agency responsible for coordinating federal accessibility policy and representing the disabled public (U.S. Access Board, n.d.), is in the process of revising Section 508 standards to match WCAG 2.0. A 2011 draft of the revised standards makes frequent reference to WCAG 2.0, including requiring most federal agency web-based communication to "conform to Level A and Level AA Success Criteria and Conformance Requirements specified for web pages in WCAG 2.0" (U.S. Access Board, 2011). Based on the planned changes, using the newer standards in evaluating existing government websites should help set the stage for future studies. One of the possible reasons for non-compliance that Olalere and Lazar (2011) suggest is that neither the Department of Justice nor the Access Board had issued "clear guidelines … on what steps to take to make a website accessible." Some state agencies, responsible for developing