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A Study of Kentucky School District Websites: They're Colorful and Informative ...but Are They ADA Compliant?


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A Study of Kentucky School District Websites: They're Colorful and Informative ...but Are They ADA Compliant?

Abstract

An often-overlooked component of a school district website is the necessity for that website to be accessible to those with disabilities, while following the guidelines of the Americans with Disabilities Act (ADA) and Section 508 of the Workforce Rehabilitation Act. This study investigated the accessibility of school district websites in Kentucky by selecting a random sample of 50 school districts and analyzing their home pages using WAVE (Web Accessibility Versatile Evaluator), which reports accessibility violations by annotating a copy of the page that was evaluated and presenting embedded icons and indicators to disclose breaches with ADA. Out of 50 districts, 35 had errors that need immediate attention and all 50 districts had alerts of likely violations that ranged from alt-text omissions and empty links to issues with color contrast and font sizes. The article proceeds to give practical suggestions for eradicating many of the errors, even for those shareholders with less than sophisticated technological expertise.

Keywords

Websites, accessibility, disabilities

Cover Page Footnote

None

There is little argument that the advent of the school district website has opened the doors of communication for schools, parents, and residents. The district website acts as a virtual meeting place and database that disseminates information while acting as a potent tool of pride and promotion for administrators, teachers, students, and citizens. An often-overlooked component of the district website, however, is the necessity for that website to be accessible to those with disabilities, which can vary from visual and auditory to speech, mobility and cognitive impairments. Assistive technologies such as speech synthesizers, screen readers, screen magnification software, Braille output systems, and adapted keyboards permit individuals with or without disabilities to retrieve materials on the Web, but the complexity and presentation of much of the information make it incompatible with devices and ultimately inaccessible to the user. With the websites of over 350 educational institutions being investigated by the U.S. Department of Education's Office for Civil Rights (OCR) for their accessibility to people with disabilities (Griffin, 2016), many districts are discovering their websites were designed without compliance in mind. As a result, they are legally vulnerable, according to the Individuals with Disabilities Education Act (IDEA), Title II of the Americans with Disabilities Act of 1990 and/or Section 508 of the Rehabilitation Act of 1973 and, thus, failing in their obligation to be interactive and engaging for all visitors to the site (ADA.gov).

P-12 students with disabilities are placed at an extreme disadvantage when they are hampered in their attempts to access student portals and resources like Compass Learning, Carnegie Math, Khan Academy, Discovery Education, Edmodo, BrainPop, virtual learning, individual teacher webpages, and links to homework assistance. Similarly, parents or guardians with disabilities are impeded from downloading written documents such as student handbooks, which, themselves, may fail to comply with Title II of the Americans with Disabilities Act under the stipulation that public schools must provide appropriate "auxiliary aids and services" where necessary to ensure effective communication of all school district materials (ADA.gov). Difficulties may likewise occur when attempting to access teacher and staff email, district calendars, PTA meeting times, scholarship announcements, fee schedules, and online progress reports.

While it is true that the Americans with Disabilities Act (ADA) and Section 508 of the Workforce Rehabilitation Act did not *specifically* identify online accessibility, case law and guidance from the U.S. Department of Justice and the U.S. Department of Education indicate that websites and website content are subsumed under existing nondiscrimination laws (National Council on Disability, 2003) and that websites of a covered "public accommodation" must also be accessible (Podlas, 2015). In short, educational institutions need to keep pace with developing technology, and accessible websites are mandatory even in the absence of updated and more concrete guidelines (Center on Technology and

Disability, 2017). Access to information is considered a civil right (School Webmasters, 2016). The ascendance of web-based learning at the post-secondary level led to heightened awareness that 11% of undergraduates, 8% of master's, and 7% of doctoral students (National Council for Education Statistics, 2009) have a disability that impairs access to websites and online content. Arguably, because of its lesser profile, the P-12 Web presence had not heretofore faced the same urgency and scrutiny as its higher education counterpart, but the OCR is now intensifying efforts to ensure that individual school and district websites are both familiar and in compliance with the rights, responsibilities, and resources pertaining to the ADA.

The inquest began in earnest in 2011 when a letter was sent to elementary and secondary school institutions that drew attention to the obligations regarding accessibility of websites. The number of complaints and subsequent investigations are indeed beginning to escalate (Samuels, 2016). Prominent districts such as Santa Fe Public Schools, Seattle Public Schools, and Virginia Beach Public Schools are but a small representation of the districts receiving complaints on issues ranging from image text descriptions (alt-tags), pages accessible only with a computer mouse, and color combinations making text unreadable to people with low vision (Wang, 2016). In most instances, the OCR collaborates with the district to set goals and benchmarks for addressing compliance issues with timelines for success

Problem Statement

As leaders of several key committees within a College of Education and Human Services at a medium sized metropolitan university in the South Central United States tasked with exploring academic innovations and advancing the collaborative and socially transformative potential of professional education, the researchers undertook this study to investigate the accessibility of P-12 school district websites throughout Kentucky, the home of the university, which itself has witnessed unprecedented growth in web-based teaching and learning (Educational Outreach, personal communication, 2017). Educational action research enables practitioners to critique structures which shape their practice and provides the power to negotiate change within the system that maintains them (Elliott, 1991). While the university likewise confronts challenges with accessible design, it was crucial to ascertain a starting point from which the researchers could gauge the need for education, professional development, training, and resources so school districts within the university's sphere of influence can best serve their constituencies and support student success. After all, a survey conducted by Campus Suite (2017) revealed only 5 percent of school districts know their website's content is fully accessible; 61% concede it is not; and 34% do not know.

Outreach and community engagement are critical components of the university mission and the campus is committed to the deepening of regional growth and vitality. Many of the school districts throughout the state are institutional partners that provide learning experiences and field placements for pre-service teachers, counselors, and social workers. Thus, the researchers place high value on the exposure of students to clinical environments that model inclusive communication practices regardless of whether messages are conveyed face to face or online. As would be the case with sister institutions throughout the state, pre-service candidates must frequently consult district websites to obtain information for assignments about board meetings, locations of various schools, and aggregate “school report card” data concerning the district and individual schools. The university currently has 70 such students in the researchers’ program alone who need adaptations for some type of disability. In addition, high school students across the state take advantage of the university’s dual credit opportunities, thereby making the ability to access the district website a must for all stakeholders, especially students who have a disability. The researchers viewed this inquiry as a service evaluation, needs assessment, and advocacy for students with disabilities and parents or guardians with disabilities. The goal was to be able to share findings with districts and educators throughout the state in understandable and relatively jargon free language.

A Look at the Literature

Literature that focuses on the accessibility of P-12 school district websites is notably sparse and surprisingly dated. The seminal *Web Content Accessibility Guidelines*, first edited by Chisholm, Vanderheiden, and Jacobs (1999), with subsequent updates, including the widely followed *Guidelines 2.0* (W3C World Wide Web Consortium, 2016) initially released in 2008, is part of a series of web accessibility guidelines published by the Web Accessibility Initiative (WAI) of the World Wide Web Consortium (W3C), the main international standards organization for the Internet. The guidelines specify how to make content accessible, primarily for people with disabilities. Improved accessibility depends upon three crucial categories: structure, navigation, and alternative content (alternative ways to access information presented with sounds, images, scripts, and applets). Website errors within these categories are further described as Priority 1 (errors involve issues that make it impossible for one or more groups to access information about the website. Such issues must be addressed to consider the web site minimally accessible); Priority 2 (Website access is difficult); and Priority 3 (Full website access is somewhat difficult).

Accessibility of P-12 Websites

In an early study by Bray, Flowers, and Gibson (2003), 567 school district websites across the United States and Canada were selected randomly from an online directory and evaluated for accessibility. Using Bobby 3.2, a software program, to quantify the number of accessibility errors at each site, 74% of the district home pages were found to have accessibility violations, with the majority of issues considered “high priority” in need of correction. Common concerns included the need for finding alternate ways to emphasize information currently accentuated by color; providing extended descriptions of alternate text; and identifying the hierarchy and relationship of two or more header rows or columns in a table. Despite the distinction of being “high priority,” most problems were deemed to be easily rectifiable.

When Bray, Flowers, Smith, and Algozzine (2003) repeated the study to focus on only elementary school websites they revealed that 57% of 244 randomly selected schools had at least one accessibility error. The priority areas were comparable to the ones revealed in their inaugural investigation: (a) only using color to represent information, (b) not providing extended information for images that convey essential information, and (c) not providing alternative text for images on the page.

The WebXact online software was used to determine compliance with federal mandates for homepages of 147 elementary schools, chosen from Yahoo’s K-12 School Directory. Findings indicated that only about 14% of individual school home pages and 17% of school district home pages were Web accessible. When analyzed according to type of school, 17.6% of public schools were accessible compared to 7% of private schools (Wells & Barron, 2006).

Bray, Pugalee, Flowers, and Algozzine (2007) later released a similar study in which they evaluated 165 randomly selected middle school websites for accessibility errors. Fifty eight percent of the websites were found to have at least one infraction. The authors noted that many of the middle school sites used red and/or green to emphasize information and for people with visual disabilities, including color blindness, these colors are problematic, and require an alternate method for calling attention to important text. They also reported errors such as insufficient contrast between foreground and background features, deprecated language features, and the absence of descriptive titles to links.

Klein, Myhill, Hansen, Asby, Michaelson, and Blanck (2003) assessed the websites of 157 public high schools in Iowa and reported that only 12 (7.6%) of the sites passed Bobby priority 1. Interestingly, the authors concluded that if the failure to use alt tags for graphics had been eradicated, 91% of the sites would have passed the priority 1 threshold.

Accessibility of Higher Education Websites

By way of comparison, the literature reveals that higher education websites, arguably under closer inspection than those from individual school districts, have not fared much better. Smith and Lind (2009) examined the Web accessibility of home pages within Education departments at institutions accredited by the National Council for Accreditation of Teacher Education (NCATE) and, after AChecker™, A-Prompt™, JAWSTM, and Kelvin™ were utilized to conduct the analysis, a 95% failure rate in Section 508 compliance was reported. Some improvement was noted when Gunderson (2011) inspected 23,319 web pages from 180 universities using the Functional Accessibility Evaluator (FAE), a web tool for checking compliance with a given set of accessibility standards. After focusing on titles, subheads, forms, data tables, layout tables, and images, it was revealed that 54% of the analyzed web pages complied with those standards. This percentage, however, still reveals that nearly half of websites are falling short of meeting the requirements of accessibility.

Summary

The existing literature suggests strongly that ADA accessibility for school-related websites is very much an issue of concern. Despite an initial swell of interest on this topic, there has been little follow-up to measure progress and improvement. Further, the evaluation programs used in previous studies (Bobby 3.2 and WebXact) were both discontinued by 2008. Published data specific to Kentucky is virtually non-existent. So, this current study serves as a needed update to bring a newer perspective to website compliance and what may need to occur to ensure that district websites, often the community's first entrée to the initiatives, departments, resources, and calendar of their local schools, are providing a high degree of usability for stakeholders with disabilities and visitors to these respective homepages.

Methodology

Conceptualization of the Research

This probe was informed by the Web Accessibility Integration Model, espoused by Lazar, Dudley-Sponaule, and Greenidge (2004), which declares that accessible websites must be sufficiently flexible to be used by assistive technologies. The ultimate objective is to assess whether delivery software applications and online content meet accessibility requirements and adhere to the principles of legislative compliance. To acquire the data necessary to make early evaluative judgments on progress as a state in meeting such outcomes, the researchers synthesized their roles as teaching professionals with, what Ravitch (2014) described as, the systematic and reflexive components of practitioner

research that purposefully and critically examine the experiences of constituencies, and of institutional cultures, policies, and practices that shape these realities. This study likewise followed the tradition of pragmatic practitioner research, which supports the pragmatist belief of “action science” (Argyris, Putnam & Smith, 1985), or moving from simply describing a phenomenon and determining what can be done about it, to *acting* in a real-life context to bring about change (Gordon, 2016).

Research Design and Analysis

A sample of 50 school districts from Kentucky was chosen from Ballotpedia.org, an online encyclopedia of American politics that includes comprehensive listings of all public school districts by state. The list was then checked against the *Kentucky Schools Directory 2017-18* (Kentucky Department of Education, 2017) to ensure all districts were included in the eligible population. After securing the listing of the 173 districts throughout the state, a random number generator from statrek.com was used to select a random number to identify the first school district to be included in the sample. Afterwards, systematic sampling was employed to select every 3rd school district until a total of 50 was secured. The researchers proceeded to visit each chosen website and analyze the homepage using WAVE (Web Accessibility Versatile Evaluator) provided through WebAim, which reports accessibility violations by annotating a copy of the page that was evaluated and presenting embedded icons and indicators to disclose breaches with ADA, pursuant to Section 508 and *Web Content Accessibility Guidelines (WCAG) 2.0*. In this manner, the information is more intelligible and relatable than a complex technical report. Introduced in 2001, WAVE has been used to evaluate the accessibility of millions of web pages (WebAim, 2017).

After analyzing a web page, WAVE generates an overall account that highlights “errors” and “alerts.” To distinguish, an “error” signifies an almost certain accessibility issue while an “alert” designates a *likely* accessibility issue and, thus, a need for further investigation or improvement. The analysis also posts the results from a color contrast checker because an essential aspect of color on the Web for users who are colorblind or low vision is sufficient contrast between foreground (text or graphics) and the background. Many subtle website color designs, however, can render the contrast insufficient for some readers. Upon receiving this report for each individual site, the researchers proceeded to manually examine the page and ascertain the source of the error or alert notifications. A spreadsheet was developed to record the findings.

The researchers investigated only the elements on the homepage for each district. Such a strategy is consistent with Jaeger (2006) and Loiacono and McCoy (2006) who argued that if the homepage itself is not accessible, it matters little

about subsequent pages. Further, the majority of software programs designed to examine accessibility (including WAVE) are not fashioned to evaluate multiple pages simultaneously. Thus, if each page were to be assessed individually it would be time prohibitive to conduct a study encompassing as many as 50 districts. It should be noted that Hackett and Parmanto (2008) offered a dissenting view that the homepage and a level 1 subsequent page is a better and more accurate representation of a website's full range of accessibility.

Results

The results in Table 1 indicate the cumulative totals for each of the 50 schools and denote the percentage of schools that were shown to have at least one of the errors or alerts specified by the given column heading. As displayed, the WAVE tool draws attention to errors, alerts, and issues with the colors and color combinations utilized on the homepage.

Table 1
Errors, Alerts, and Contrast Violations

	Errors	Alerts	Contrast
Number	402	2,650	1,396
Percentage of Districts	70%	100%	90%

To further distill findings, Table 2 isolates the types and numbers of individual errors identified by the evaluation.

Table 2
Individual Error Totals

Error Type	Alt Text	Empty Link	Empty Button	Empty Header	Other Assorted	Total Errors
Number	239	107	13	13	30	402
Percentage of Districts	54%	40%	10%	10%	26%	70%

Most Frequently Occurring Errors

When considering the types of errors found most frequently on the homepages, the largest totals dealt with missing alternative text (alt). The alt tag adds text and the purpose of an image. Alt text is accessed by screen readers to provide a text equivalent of description to an image on the Web. The alt text within the alt tag should let the user know the content images.

The next most prominent area of concern involved missing links. When a link contains no text, the function or purpose of the link will not be presented to the user, which can generate confusion for keyboard and screen reader users. Other noteworthy errors that were present, although with less frequency, were empty buttons and empty headers. Buttons must have discernible text that clearly describes the destination, purpose, function, or action for screen reader users (DeQue University, 2017). Regarding empty headers, screen readers alert users to the presence of a heading tag. If the heading is empty or the text cannot be accessed, this could either confound users or prevent them from accessing information on the page's structure (DeQue University, 2017).

The “Other Assorted” category highlights errors with doc language, form labels, and/or defects in the marquee/banner. An error with doc language indicates a breakdown in defining the document language which helps assistive technologies render text more accurately. Additionally, screen readers can load the needed pronunciation rules while visual browsers can display characters and scripts correctly and media players can show appropriate captions.

With any online form, each input field must include a visual label. In the HTML markup, each label must be associated with that field, so a screen reader user will hear the correct label. When the form uses an asterisk or other symbol to show that a field is required, the symbol's meaning must be explained. Also, anytime two or more form controls are connected, users must be provided instructions. But if the instructions are too detailed or too numerous, the task of completing the form can become quite complex (U.S. Department of Veterans Affairs, 2016).

Most district homepages tend to have some type of colorful banner or marquee. Text on a banner image, however, cannot be read by a screen reader or a search engine; it also disappears if users turn images off in their browser settings. Therefore, the text should always be coded in HTML format, either overlaying the banner graphic or hidden behind the banner graphic.

Other Findings

A manual inspection of the pages also revealed a decided lack of transcripts for podcasts, with over 85% of districts failing to provide text to accompany audio files. Over 90% of Word or PDF documents that were included on the pages were found to lack alt tags for images contained in those documents. Close to 60% of districts used images containing text (i.e. text embedded over an image); such text cannot be read or translated. Approximately 30% of webpages made use of text that did not retain readable form when resized to 200%. The evaluation, however, did provide affirmative information about many of the homepages. In addition to highlighting violations and potential violations, the WAVE tool likewise recognizes the presence of ARIA (Accessible Rich Internet Applications) features

and special accessibility attributes and interface components on the respective site, which serve to acknowledge that accessibility features have intentionally been employed on the site. Only 6 of the 50 total district websites (12%) failed to register at least *some* ARIA features.

Discussion of the Findings

The findings suggest that accessibility compliance for school district websites within the state of Kentucky has not been achieved and several prevalent violations are in evidence that contribute to non-conformity with ADA guidelines. Out of 50 total school districts, 35 had errors that need immediate attention and all 50 districts had alerts. Thus, a significant discovery from this study is the lack of progress from earlier studies to the present. When Bray, Flowers, and Gibson (2003) reported that 74% of school district websites they evaluated were not in compliance, one might reasonably expect the results to be much improved over a decade later, but such was not the case. Yet, as was also reported in earlier studies, the majority of the errors can be remedied very easily.

Recommendations for Creating Awareness

Obviously the first step is simple awareness. Creating and maintaining an ADA accessible webpage is truly a joint effort among all shareholders, from the web designer to the administrators to any faculty or staff who contribute items to the webpage. To produce and sustain an efficient district website, a plan for accessibility needs to be conceived from the outset rather than consistently being a reactive process. However, if such a scenario is not possible for a given district, it is important, at the very least, that accessibility be brought about incrementally because any step forward is clearly preferable to a “stand pat” orientation. While some of the errors and alerts must be addressed by webmasters and other vendors, many corrections can be made by those with less technical training through mere diligence about the materials uploaded to the site.

Thus, a certain degree of prioritization should occur. The following scale from Groves (2011) could prove useful for school district personnel in making such decisions: (1) High impact- Homepage visitors will be unable to perform important tasks or unable to understand basic content if this issue is not addressed; (2) Medium Impact-Visitors will be able to perform important tasks and understand basic content, but with a noted level of difficulty if this issue is not addressed; (3) Low impact-Visitors can perform most important tasks but may be inconvenienced if this issue is not addressed.

Key Issues Needing Repair

Based upon the data, a summary of the most common issues in need of repair is provided in Table 3.

Table 3
Summary of Common Accessibility Issues Found in School District Websites

<p>Color Contrast and Font Sizes</p>	<p>Websites should be designed so they can be viewed with the color and font sizes set in users' web browsers and operating systems. Users with low vision must be able to specify the text and background colors as well as the font sizes needed to see webpage content (Americans with Disabilities Act, 2007).</p>	<p>Alt Text</p>	<p>It is imperative that photos, logos, maps, and banners have image descriptions (possible exceptions include images used strictly for decoration). If alt text is not provided for images, the image information is inaccessible, for example, to people who cannot see and use a screen reader that reads aloud the information on a page, including the alt text for the visual image.</p>
<p>Headers for Tables</p>	<p>If a graphical browser is used, it may be obvious which headers refer to which group of data cells. However, if a table is read cell-by-cell (which is more likely when it is read by a screen-reader), the connections are often difficult to distinguish (HTML Source, 2017).</p>	<p>Empty Links</p>	<p>Screen reader users scan a page by tabbing from link to link (without reading the text in-between). With links such as "<u><i>Click here</i></u> to download the school board schedule" and "<u><i>More</i></u> on school law," these techniques are useless because there is no explanation or context provided for the link. Avoid using the word "link" and do not capitalize links.</p>
<p>Forms Submitted Online</p>	<p>According to Section 508, any electronic form to be completed assistive technology to access the information, field elements, and functionality needed for completion and online must allow users with submission of the form, including all cues and directions. Forms must be keyboard accessible and text labels should describe the function of each form control (Section 508.gov).</p>	<p>Accessibility of Non-Html Materials Including PowerPoint or Prezi</p>	<p>Because slide presentations often contain graphics and animation, it is important to create a presentation that makes all visual elements available and accessible to disabled users. Add text equivalents to images, limit animations and transitions, and add text transcripts for audio (Adobe, 2017).</p>

Implications of the Study

While this study was conducted to heighten awareness of accessibility issues regarding school district websites within a specific state, others may find this information useful for their own P-12 websites or for accessibility and online endeavors in higher education settings. Generalizability beyond Kentucky was certainly not an intent, yet the similarity of findings across the school districts is compelling and *may* be part of a wider trend, especially when set in juxtaposition with prior research conducted on the topic. These data have allowed the researchers to bring several initiatives to districts across the state (including P-12 partners, both in the field, and those who comprise the university's advisory committees), and facilitate expediency on the matter of ADA compliance. Some of those practical and free solutions include:

Checking Documents for Accessibility before Uploading to Webpage

Microsoft Word is widely used for word processing and the creation of documents, but many may be unaware it can also be a helpful tool for locating ADA issues. Microsoft Word has a built-in accessibility checker that alerts the user to concerns found within any document. On a MAC this tool can be found under "Tools" and then "Check Accessibility." On a PC, this will be found under File, Info, "Check for Issues." Inspection results will be produced that identify concerns and recommended fixes. These would include unclear hyperlinks, images without alternative text tags (alt tags), blank spaces and more. By clicking on the warnings displayed in the inspection results, Word will take the user to the place in the document where the issue is found, thus serving as a huge help in not only showing users where there are issues, but educating and informing them on the types of items a screen reader would have trouble speaking.

Adobe likewise has a built-in accessibility checker to aid in identifying and correcting issues within a PDF file. Using Adobe Pro, the user can navigate to Tools, and then "Accessibility." By running a full check, the tool will return with results regarding the document's accessibility. Like Word, the tool will alert the user to issues with alt tags, spacing with tables, unclear hyperlinks and more. The built-in accessibility tool is essential for administrators, teachers, or staff who use PDFs to post content on a webpage. Having the PDF created in an accessible way will ensure no issues when a screen reader is used.

Creating Transcripts for Podcasts and Other Resources on Webpage

Because the task of developing transcripts for videos and screen captures can be quite cumbersome for educators or district employees, the researchers particularly wanted to point out tools that are open source, readily available, and straightforward: VoiceBase (<https://www.voicebase.com/>) is an online tool that creates machine generated transcripts for audio or video files. This can be beneficial for quickly creating PDF transcripts of any recordings one needs to post

to a webpage. VoiceBase allows for over 20 different audio and video file types to be uploaded to the site. Once the files are uploaded, the user is notified by email when the transcript is complete. The user can then see the generated transcript and make changes or modifications based on the text that was created. The PDF transcript can be downloaded and subsequently posted via a website or blog. Users are given \$60 of free machine generated transcription and when their credit is depleted, the price for machine generated transcription is two cents a minute.

Voice typing with Google Docs is available through Chrome for desktop as well as the Docs apps for Apple iOS and Android. If creating a podcast or transcript from scratch, Google Docs has a very helpful feature that will allow the user to generate a transcript as content is spoken. A microphone is required to utilize this tool. While using Google Chrome, Google Docs has a built-in feature located under “Tools” called “Voice Typing”. When commencing a new document, simply choose to start Voice Typing. The program will recognize the microphone and as the user begins speaking, it will type the text that it hears spoken. It also recognizes punctuation commands such as comma, period, new line, and new paragraph. Additionally, it recognizes editing commands such as select all, cut, copy, delete last word, and insert header. The voice recognition is very accurate and allows users to speak their thoughts without having to type a transcript at the same time. This transcript can then be shared, downloaded or linked to a website. By initiating small steps such as these, a district’s website can move closer to accessibility in a shorter period of time and become much more valuable to all members of the community.

Limitations of Study

The school district web pages that were evaluated represented only a sample from the state and the possibility of sampling error cannot be understated despite the attempt to ensure a random selection. The assessment tool used to evaluate the webpages is not infallible and cannot detect every compliance issue found in the Section 508 and WCAG 2.0 guidelines. Also, the WAVE tool does not rank the severity of “alerts” that are reported. For this reason, human inspection is vital, yet such judgment when examining the data is a reliability factor to be considered.

Concluding Thoughts

The researchers’ goal was to use this teacher research study to examine a sampling of school district websites within the state of Kentucky as part of an overall attempt to heighten awareness for all school districts of the importance of Web accessibility. The researchers sought to provide critical, yet easily understood, data to school districts, while emphasizing the wisdom in being proactive with online development. The researchers also provided a snapshot for the home institution as to where state school districts stand at this point in time in

their quest to create effective and efficient websites, specifically in the areas of design, navigation, usability, content and interactivity. While it would be an overstatement to assert that *every* error, alert, and issue will necessarily prohibit a website user from understanding the meaning of content on a page, the incidences of missing text that describe images to a person with a visual impairment and videos that are not accurately captioned (Higgins, 2016) are clearly among the most significant, yet easily, correctable barriers that need immediate attention. A school district website should be a welcoming, well-organized and engaging destination for parents, students, faculty and the community-at-large. Many district websites are indeed colorful, striking, and informative...now let's make sure they are accessible and interactive for everyone who arrives on that homepage!

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