Guidelines for Creating Web Content Accessible to All

Developed by Joe Wheaton & Sean O'Briant

The Ohio State University Partnership Grant

Improving the Quality of Education for Students with Disabilities

Why Should I Make My Pages Accessible?

Accessibility is for everyone. Although there are legal mandates requiring institutions of higher education to make educational materials accessible (e.g., the Americans with Disabilities Act and Section 508 of the Rehabilitation Act), accessibility is fundamentally just good web page design. Here are two examples of how accessibility benefits everyone:

♦ Computers can read the text on a screen but images, graphs, and charts are meaningless to persons without vision, those who run their browsers with the images turned off, and persons using PDAs (personal data assistants) and cellular telephones. Redundancy increases the likelihood that information will be understood by everyone. Text descriptions of graphs and charts (needed by persons without vision) can help all students understand difficult concepts.

♦ Captioning video, needed by persons who are deaf, also helps students with learning disabilities by presenting text visually. It also assures that important information is clearly conveyed to all students, including those for whom English is a second language and those who are connecting to the Web over slow, telephone connections.

Pages that are accessible are better organized and therefore more usable by all. Accessible pages render properly on a wide variety of user interfaces, they are easier to navigate, and they convey information in a consistent, logical manner. Moreover, changes in how we view the Web are occurring. Web pages are now being displayed on PDAs and even cellular telephones. For pages to appear properly in all these environments, they must be well designed. Although we cannot do more than touch the surface on web page design and accessibility in this short Fast Facts, we will identify some common problems, offer solutions, and suggest some resources to help you. Contact Laura Knobel-Piehl in the Disability and Access Center for advice and assistance. Resources for creating accessible web pages can be found at the end of this Fast Facts.

The entire Fast Facts series is available at: wp.stolaf.edu/asc/dac
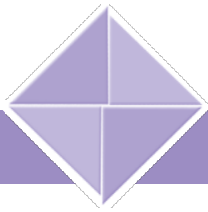
Essential Elements

Graphics and Multimedia

Persons with visual impairments use screen readers to read web pages (a common screen readers is called JAWS – Job Access With Speech). The simplest way to understand what a user experiences when visiting a page through a screen reader is to think of that person listening to a baseball game over the radio. The game cannot be seen, so the user must rely on the announcer for a description of the action. You are that announcer describing the game. Of course, screen readers are more literal than an announcer, because they read every word (and sometimes punctuation), and, like the radio, they have one big drawback: they cannot read pictures. This is where the author/announcer is heavily challenged to provide content. It's up to you to give meaningful descriptions of images for your audience. Here are some general guidelines to follow:

♦ Describe the images in text (often called an "alt-tag"). Give a text equivalent for all images, including icons. All the commercial web page authoring tools (e.g., FrontPage, Dreamweaver, Netscape Composer) make this easy. When adding an image with these and similar products, look for a box to insert alternative text to insert your alt-tag.

♦ Multimedia presentations, such as video clips with audio tracks, need transcripts or captioning to describe important information. In addition, poor quality sound tracks are common when recording lectures or speeches in live settings, and lip reading is impossible in jerky downloaded videos. The best way to ensure this type of information is perceived accurately is to provide alternative text.

♦ Image maps (images divided into areas that link to another page) need redundant text for each link, which should be added either above or below the image map.

♦ When all else fails, develop a text only page, but make sure this page is updated to correspond to the multimedia dependent page.

Layout and Presentation

♦ Unless you only have one page on your web site, your viewers will have to navigate your web. Make your navigation simple and consistent from page to page. Don't make your viewers learn a new way to navigate on every page or you'll loose them. In their book on web site design, Nielsen and Tahir (2002) recommend keeping your links to a few specific words and to use the typical blue, underlined text for links. This helps readers (both visual and computer) scan the page for links. Avoid phrases like "click here," which tells viewers nothing about what will happen when they "click here."

♦ When designing your page, make sure the background and text contrast well. This seems like a no brainer, but many of us have seen web pages with red text on a black background, or light blue on yellow. Don't use only the size, the color, or the formatting of text alone to convey important information. Information conveyed this way may render differently on different monitors and with different browsers, and of course color is meaningless to persons with the inability to see color. Test your pages by photocopying them, especially several times. Can you still read them?
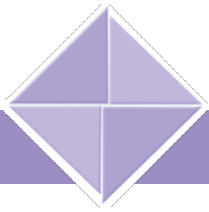
♦ Let the user control the page. That is, don't initiate actions automatically that can't be stopped. For example, avoid pop-up windows. Pop-up windows have become so common that they are more likely to make people angry than to help you get your message across.

♦ Language and writing style should be clear and simple (ever hear this before?). For example, break large blocks of information into smaller sections for easier reading. Most people also find that a narrow column of text is easier to read than text all the way across the page. Use only a single column of text whenever possible; it's easier to scan.

♦ Browsers have the ability to display text in different languages, so screen readers need to know the language used on your page. In addition, search engines will find your site quicker and categorize it better if you identify in the header the "natural" (that is, human) language (e.g., English or Chinese).

Tables

♦ Tables are a useful way to visually convey relationships, but they can also be used to lay out the page. Strict accessibility guidelines say to never use tables for layout, but this is probably the most widely violated guideline. If a table is used to lay out text on the page, lay it out so it will make sense when read from left to right (referred to as "linearized").

♦ If you use tables for data, summarize the table to aid reader comprehension. It helps all students to know the high points of a table. There are certain formatting guidelines for data tables, which are too specific to go into in this fact sheet, but one simple suggestion is to identify the headers (first cells) in the rows and columns. Header information can be used by screen readers to identify important information.

Frames, Forms, Applets and Scripts

♦ These features are becoming more frequent. The basic rule of thumb is that some of these features are not supported well by older browsers and screen readers. Until the software catches up with the programming, provide alternative pages and ways to move through the screen without using a mouse.

Validate Your Pages

♦ Validation refers to checking your page for accessibility errors. Fortunately, there are two free services to help you: Bobby and A-Prompt. Each checks and compares individual pages for either Section 508 of the Rehabilitation Act or WAI (Web Accessibility Initiative) errors. Note that Bobby is also available for download, for a fee. The download is not needed unless you wish to check all the pages on a web-site. Below is detailed information on each of these validation tools.
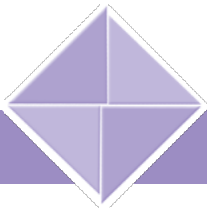
♦ **Wave** (http://wave.webaim.org/) will check your pages once they are posted to the Web. It will compare your pages to both Section 508 and the WAI guidelines. The Wave web site will ask you for your web page address, automatically check the page for accessibility problems, and then link you to solutions from Section 508 or the WAI.

♦ **A-Prompt** (http://nide.snow.idrc.ocad.ca/A-Prompt/index.html) will validate your page and provide menus with solutions. Download A-Prompt from the University of Toronto then run it on pages that are saved to your computer. Because the pages are saved "locally," A-Prompt can check your password protected pages before you post them to the Web or to WebCT. Much less knowledge of HTML is required because A-Prompt walks you through many of the steps, although HTML knowledge is needed for some repairs.

Resources

Internet Resources

♦ **The Web Accessibility Initiative** (www.w3c.org/wai) provides detailed guidelines for creating accessible web pages. HTML knowledge is required.

♦ **WebAIM** (www.webaim.org) Perhaps the best site for tutorials and free information about creating accessible web pages. They frequently conduct free, on-line training sessions. Highly recommended.

♦ **WebMonkey** (www.webmonkey.com) is a source for all types of information about the Internet and web authoring, not just accessibility. How-to articles make many esoteric features of web design understandable and meaningful. An extensive glossary will help you wade through the "Webspeak."

♦ **Web Pages That Suck** (http://www.webpagesthatsuck.com/) As you can guess, this page teaches good web design by looking at the worst, while it dispenses a few laughs. There is also have a new book (April, 2002) about the Web adventures of the web page authors – Son of Web Pages That Suck.

Books

Nielson, J., & Tahir, M. (2002). <u>Homepage usability: 50 web sites deconstructed.</u> Indianapolis, IN: New Riders.

> This book takes the web pages of such sites as CNN, Exxon, NPR, and Microsoft and identifies and critiques every aspect of the home page. A great resource for learning through good and bad examples.

Paciello, M. G. (2000). <u>Web accessibility for people with disabilities.</u> Lawrence, KA: CMP Books.

> Easy to read and comprehensive. Paciello's book covers the basics from the legal background, the WAI guidelines, and includes a section on Java accessibility programs. A thorough section on disability resources and links to software is included.

Thatcher, J., Bohman, P., Burks, M., Henry, S. L., Regan, B., Swierenga, S., Urban, M. D., & Waddell, C. D. (2002). <u>Constructing accessible web sites.</u> Birmingham, UK: Glasshaus.

> The credentials of the authors are impressive and this book provides solid, specific suggestions for creating accessible web pages. This book is more technical than Paciello's but is still easy to understand. It also addresses Section 508 in great depth. A new section on Multimedia's Flash MX program is included. They also have a chapter on separating content from presentation – a good addition.

New books are coming out all the time as the need to create accessible web sites grows, but these references will get you started.

Go For It!

We began this fact sheet with examples of how accessibility can benefit many more people than just those with disabilities. We gave some examples of what to do and why, and we ended with some resources. Creating your web pages using accessibility guidelines will help all your students get the information you have worked so hard to create and place on the Web. Ultimately, accessibility is for everyone.
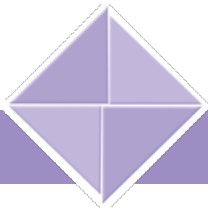
About the Lead Author

Joe Wheaton is an Associate Professor with the School of Physical Activity and Educational Services, College of Education, and can be reached at 614-292-8313 or wheaton.3@osu.edu Dr. Wheaton has experience instructing faculty and TAs in web course development for the College of Education as well as other OSU departments. He also teaches courses in Adaptive and Assistive Technologies. Dr. Wheaton is Co-Director and Faculty Coordinator for the Web Accessibility Center housed in the Office for Disability Services at OSU.