



Guidelines for Creating Web Content Accessible to All

Developed by Joe Wheaton and 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 cellphones and tablets. 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 cellphones and tablets. 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 brief description, we will identify some common problems, offer solutions, and suggest some resources to help you. Resources for creating accessible web pages can be found at the end of this document.

Essential Elements

Graphics and Multimedia

Persons with visual impairments use screen readers to read web pages (a common screen reader 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 lose 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" language.

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.

About the 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.

Important Note

This information is available in alternate format upon request. Please call University Disability Services at 570-389-4491.

This publication is funded by the US Department of Education under project #738322. For additional copies or more information, please contact:

Margo Izzo, Ph. D., Phone: 614-292-9218, Email: izzo.1@osu.edu
Ann Yurcisin, ED.S., Phone: 614-292-3307, Email: yurcisin.1@osu.edu