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Making Your Library's Website Accessible

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Libraries strive to provide access to information for patrons regardless of age, ability, socio-economic status, cognitive skill, and other potential discriminatory criteria. Accommodating the disabled can be a challenge for libraries. Nationwide, libraries have made admirable progress in upgrading their facilities and services to make access more convenient; however, one area that is frequently overlooked is the library's website. This article explains why website compliance with recognized standards is essential for your library and offers suggestions on how to make your site more accessible. We conclude with a list of recommended web resources.

Website accessibility is becoming increasingly important. According to the Pew Internet and American Project (www.pewinternet.org/reports/), 12% of Internet users have some type of disability. This number will increase as people live longer. According to the Census Bureau (www.census.gov/prod/3/97pubs/p70-61.pdf), almost half of us can expect to have some sort of disability by age 65. When you combine this with the fact that many Internet users are using old and inadequate equipment, accessibility becomes a much larger issue.

Website accessibility is becoming law. The 1990 Americans with Disabilities Act states:

> No otherwise qualified individual with a disability shall, solely by reason of his/her disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity of a public entity.

Library websites are integral to the programs and activities offered by hosting libraries, but the federal government did not originally provide guidance on how to meet this mandate, although that has changed recently. In 1998, a law known as "Section 508 of the Rehabilitation Act of 1973" requires the federal government to buy and develop information systems that are accessible to people with disabilities. The legislation is broad and covers all sectors of technology, including websites. This spurred the creation of a set of guidelines for website accessibility by the Access Board (www.access-board.gov/), a federal agency committed to

promoting accessible design. The legislation not only affects government websites but also requests all vendors who do business with the government to comply. At this point the guidelines are just that: guidelines, which are non-enforceable. Eventually, the government plans to enforce Section 508. One of the benefits of the law has been the development of the guidelines discussed here. As far as libraries are concerned, the guidelines provide a much-needed outline for dealing with a challenging and time-consuming issue.

Website accessibility is a labor-intensive goal and it will not be accomplished overnight. Trying to implement every aspect of the guidelines can be both frustrating and time consuming. We recommend starting small and with something familiar. The guidelines are directed at large government and commercial websites that often use animation, pop-ups, pull-downs, etc. Many of the guidelines will not apply to library websites and most librarians do not have the time or expertise to develop complicated sites.

Basically, the guidelines cover sixteen key areas (labeled a-p in the legislation). They all rest on the foundation of (a), which states that websites must provide "a text equivalent for every non-text element." For example, screen reader software (software that helps legally blind individuals read web-based text) and other assistive technologies cannot interpret graphical images. Rather, they look for distinct containers called "alt tags" to describe the unidentified picture or graphic. Adding alt tags to your site is easily accomplished. The two major web editors, FrontPage and Dreamweaver, both accommodate inclusion of this tag. Simply click on the image and add a description in the appropriate location. Another important task is to include text links that parallel any graphical links. For example, one site we worked on recently was partially built using PhotoShop, software used to create graphics and graphical text. In order to remedy this we put regular html text links across the bottom of the page.

This alt tag pops up when you roll your cursor over the library logo graphic

The graphic links have an HTML counterpart, generally located at the bottom of the page.

Guideline (b) focuses on multimedia presentations. This topic is probably not an issue for many libraries. However, a number of large and medium-sized academic libraries are incorporating multimedia into their sites. The guidelines state that websites must provide "equivalent alternatives" to any multimedia presentations. If your site includes video or audio clips, you must provide some kind of alternative access to this material. For example, you must include audio descriptions of videos and text captioning for any audio clips.

Color (c) is addressed next. The guidelines recommend that any information conveyed by color be available without color. This can be accomplished by labeling any colored buttons that you have on your site. Also, it is important to provide text descriptions for any color pie charts, bar graphs, etc. One way to tell if your color choices are good is to print a page of your site using a black and white printer. If everything is easy to read and makes sense, then your color scheme is probably acceptable.

A recent popular website innovation is the use of cascading style sheets, and they are the topic of guideline (d). They have been a real boon to web developers because they allow designers to easily control and adjust headings, fonts, colors, and more for an entire site. However, they can be a real accessibility problem. For one thing, many older browsers do not

support style sheets. We had serious problems getting our style sheets to work with Netscape 4.7. Another problem is that people with visual impairments frequently have their browsers set to the maximum font size and alternate colors to make the text more readable. It is important to design your site so it works well with and without style sheets. Test your page(s) by changing the font, size, and color settings in various browsers to see how it looks. Another alternative is to use only the style sheet options that minimize interference with screen readers and work across various browser versions.

Sections (e) and (f) deal with image maps. Image maps are graphical images with "hot links" imbedded in them. An example of an image map would be a graphical representation of the United States with each state "hot linked" to information about that state. Image maps are necessary when employing graphics. However, they present an accessibility problem, as a screen reader cannot "read" an image map. One simple solution is to assign "alt tags" describing each active region of your image map. Another solution is to provide regular text links in addition to the image map.

When you roll your cursor over a "hot linked" graphic, an alt tag should appear.

Many web developers use tables for layout designs. Layout tables present problems because screen readers start at the top left of a page and read left to right, dropping one row at a time. This may not be how your site is normally negotiated. The guidelines (g-h) state that any tables used (both layout tables and data tables) should be clearly identified and labeled. For layout tables, this can be accomplished by including a "table summary" in the html. This makes the site more navigable. For example, the following table summary was recently added to one of our websites:

<table summary="layout table: the first cell contains the Library's navigational toolbar, the second cell contains annotated information links for international government resources, the last cell contains library information links.">

Data tables should include both a table summary and a description of what's in each cell.

Frames were a popular in the recent past for dealing with webpage formatting. Many web designers are now avoiding them. Guideline (i) states that if you must use frames, you must meaningful descriptions for each frame and what it does. We would recommend not using them at all.

The next guideline (j) deals with "flicker." This one is not really a problem for library websites, since most do not have pages or images that flash or flicker. The guidelines state that if sites have these features, the flicker must be 55 Hz per second or less as higher rates could induce seizures in people who are photosensitive.

Many government and some commercial sites give users the option to view a text-only version. There are several reasons for this. First, for users with a dial-up connections, load speeds can be painfully slow for graphically rich sites. Another reason is to make it easier for those with a visual disability to navigate the site. Guideline (k) recommends that all sites provide a text-only option. The text version must be kept as current as the graphical site. The object is to provide an alternative for users who cannot access the graphical site. The challenge in implementing this guideline will be the time required to operate and maintain two parallel sites. At this point, we are not doing this at our library, although we try to keep graphics to a minimum.

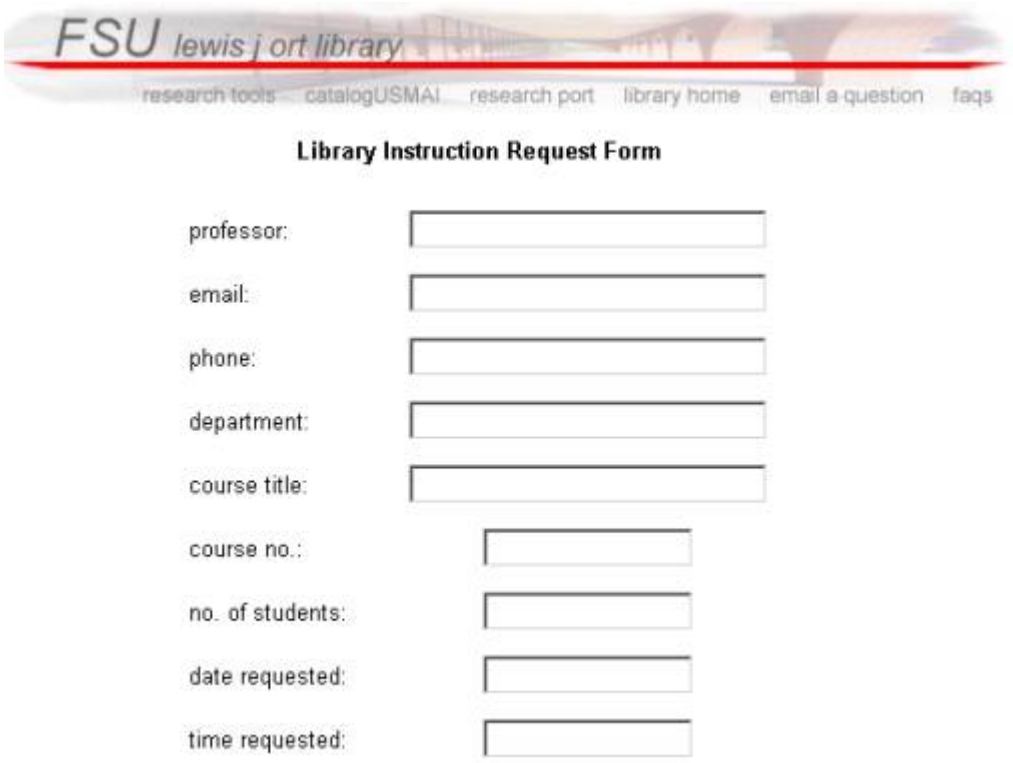
Guideline k focuses on dynamic content. Many commercial sites contain dynamic content, i.e., content that users can manipulate. Some examples include pop-up menus, shopping carts, and rollovers. These effects are created using scripting languages like JavaScript. Dynamic content may require the use of a mouse, whereas people with disabilities often use the tab key to navigate the web. Guideline (k) states that if your site uses scripting to display content, the information displayed by the execution of the script must have a text equivalent. This can be difficult to do, so consider whether your site really needs the scripting. What does it accomplish? If it is not necessary, do not use it. For simple things like rollovers, include an alt tag description that explains what the script is executing.

Guideline (m) deals with plug-ins and is straightforward. If your site requires a plug-in (i.e., an additional software package, like Adobe's Acrobat Reader) to do something, then provide a link to the plug-in. The problem is making sure the plug-ins provide content that is accessible; however, this is really the responsibility of the producer of the plug-in. Adhering to this guideline should not become a primary concern as the most commonly used plug-in for libraries is Adobe Acrobat, and Adobe is a leader in making its products section 508 compliant.

Many libraries use forms for everything from answering reference questions to submitting interlibrary loan requests. Guideline (n) states that forms should be designed with accessibility in mind. Most forms are created within tables, which often generates difficulties for

screen readers. The solution is to build your forms without tables, or use a very simple table layout that reads left to right. For example:

Notice that the information requested and the reply box are adjacent.



Remember to include a table summary at the beginning of the form explaining exactly what it is and how to use it. Also, avoid programming your form so that the return key submits the form. People who navigate web pages by using the tab key use the return key to select check boxes, follow links, etc. One way to accomplish this is to set up your form so that it will not submit the form on return unless all the components are filled out (this is called "validating the form").

The next guideline (o) recommends skipping any repetitive navigational links. Unfortunately, repetitive navigational links have become very popular. Many websites, for ease of use, include a standard toolbar on every page so a user can easily navigate the site; it gives the user a sense of direction. Repetitive navigational links are frustrating and time consuming for someone who is visually impaired. Each time a visually disabled user visits a page, the screen reader methodically reads through the toolbar links. One solution is to include a "Skip Navigation Link" at the beginning of each page. The user could then just click on the link and be jumped to the main content of each page. For those who do not want this link to appear on each page, another solution is to make the "Skip Navigation Link" invisible by making it a button that

matches the background color of the page. You would then need to include an “alt tag” description of the button so the user would know what to do with it.

The last guideline (p) deals with timeouts. If a time response is required, the site must give users sufficient time to respond and alert the user when time is about to expire. This is another issue that would not apply to most library websites, but it is of concern to libraries, since many of the database vendors' websites time out after a period of non-use. As with plug-ins, this is a problem that commercial vendors will be required to solve.

For libraries, the guidelines can be summarized in the following points:

- Provide alternative text for any graphics on your site.
- Provide alternative text for any multimedia content.
- Any information conveyed by color must have a text explanation.
- Pages should be readable without style sheets.
- Provide text links for any image maps.
- Make tables accessible by labeling them clearly.
- Avoid using frames.
- Eliminate flickering or flashing graphics.
- Provide a text-only parallel website.
- Eliminate pop-up windows, rollovers, etc.
- If your site requires a plug-in, provide a link to access the software.
- Make forms accessible by using a simple design format.
- Include a “skip navigation” link for sites that use a standard toolbar of links.
- Allow users plenty of time to navigate your site.

Many of the guidelines are design techniques that many of us already use, or they are not generally applicable to library websites. The greatest challenges include making tables and forms accessible and providing a parallel text-only version of the regular site. Making forms and tables accessible can benefit all users as doing so will make your site more user friendly. However, designing and maintaining a completely separate text-only site is a major undertaking that many library webmasters will not have time to complete or maintain properly. We recommend viewing website accessibility as an ongoing project. Make the changes you feel comfortable doing now.

Make other changes as you add new pages, when time permits, or when you redesign the site. Making your library's website comply with section 508 guidelines will take time and dedication to complete, but it is well worth the effort.

At this point the guidelines are simply recommendations, but there is momentum building to make them law. We are now in the testing phase. The Access Board has developed these guidelines in the hope that government and commercial website developers will begin to experiment and implement them. Updates and changes will occur, but it is unlikely that the standards will diminish or disappear. Accessibility is here to stay and it is a good idea to begin taking some steps towards making your library's website more ADA friendly.

Resources (all web links current as of April, 2004)

We recommend the following resources to help you get started on the road to website accessibility:

Americans with Disabilities Act (ADA) homepage.	www.usdoj.gov/crt/ada/adahom1.htm
Guide from California State University at Northridge, explains how to make your web page accessible.	www.csun.edu/itr/guides/webpageaccess.html
Free downloads and web links from the Suburban Library System, Illinois.	www.sls.lib.il.us/accessibility/resources/web-resources.html
Online class on making your website accessibility from the Land Grant Training Alliance.	www.lgta.org/accessibility/
The University of Arizona's guidelines for how they make their web pages accessible.	uaweb.arizona.edu/styleguide/accessible.shtml
A Webliography of useful resources about web accessibility issues.	www.makoa.org/web-design.htm
The Section 508 guidelines developed by the Access Board for websites and Internet applications.	www.access-board.gov/sec508/guide/1194.22.htm

The actual text of the Section 508 guidelines includes all areas of technology (not just websites).	www.section508.gov/
The Web Accessibility Initiative, a collaborative worldwide initiative dedicated to accessibility. Includes news and resources.	www.w3.org/WAI/
Excellent tutorial covering all major 508 issues originally developed by the National Cancer Institute.	usability.gov/web_508/tutorial.html
Leading resource for web accessibility includes tools and resources.	www.webable.com/

References

People with Disabilities. Pew Internet and American Life Project . 2004. Pew Research Center. 19 Apr. 2004. <www.pewinternet.org/reports/ >

McNeil, John M. *Americans with Disabilities: 1994-9* 5. 1997. Washington, DC. Bureau of Census, U.S.

Department of Commerce. 22 Apr. 2004. www.census.gov/prod/3/97pubs/p70-61.pdf

Seizures caused by flashing lights. *Journal of Visual Impairment & Blindness* . 88.2 (1994): 27. Academic Search Premier . EBSCOhost. Kutztown University Library, Kutztown, PA. 20 April 2004 <search.epnet.com>