

“Think Accessible Before You Buy”
Questions to Ask to Ensure that the
Electronic Resources Your Library Plans
to Purchase are Accessible

Presented by

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(ASCLA)

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Introduction

Often, library staff may have to make purchasing decisions regarding electronic databases and resources, software for public use, or a new web site design or layout. Libraries share a great responsibility and may be legally required to ensure that anyone-especially patrons and staff with disabilities- can effectively use these electronic services.

Thanks to continuing efforts to produce accessibility standards for electronic resources and information technology by the World Wide Web Consortium's (W3C) Web Accessibility Initiative (WAI), Section 508 of the Rehabilitation Act, and the United States Access Board, guidelines do exist to assist software manufacturers and programmers, and web site designers and developers on how to make their products accessible to people with disabilities. These standards tend to use rather technical language, but rightly so, since these guidelines are intended to assist programmers and developers.

Unfortunately, these technical standards can be a real challenge to translate and understand for those of us without a technical background, or who are not former computer programmers or web page coders. Therefore, in an effort to break down the technical language barrier, the following checklists and guidelines are intended to help libraries "think accessible" as they consider purchasing electronic resources and web services.

The checklist and guidelines offered here are by no means original ideas. In fact, all the considerations listed on the checklists were taken from the Access Board, Section 508 and W3C WAI technical standards. But they have been retranslated with plenty of examples to help promote awareness toward purchasing products that are accessible to people with disabilities, and currently represent the highest priority accessibility checkpoints to ensure usability for people with various disabilities. Patrons and staff with disabilities or anyone using assistive technologies may require special accommodations when accessing a libraries' electronic and information technologies, and this consideration should be a top priority in the decision-making process, and continue even after a product has been purchased.

Understanding the Language

A definition list of commonly used terms is provided below. The terms identified here may be used throughout the guidelines and checklists, and are also offered here to provide some introductory description, especially for those who are new to working with technology for people with disabilities.

Adaptive Technology – also known as assistive technology. Defines a wide variety of electronic items, often computer based, that enables an even wider variety of people with disabilities to live independently. Adaptive Technology is available to help people with the following disabilities:

Blind & Low Vision – applies to people who are legally blind or have a limited amount of usable vision that cannot be corrected with eyeglasses.

Synthesized Speech – a computerized, artificial presentation of human speech.

Voice Output – technology that utilizes synthesized speech to read text and describe visual elements.

Screen Magnifier – can be either hardware or software that enlarges the display of a computer monitor. Some popular software examples include Microsoft's Magnifier, Zoomtext by Ai Squared and Magic by Freedom Scientific.

Screen Reader – software that provides voice output for items displayed on a computer screen. Some popular screen readers include JAWS by Freedom Scientific and Window Eyes by GW Micro.

Text-to-Speech (TTS) – the process of converting text into synthesized speech.

Physical and Mobility Impairment – applies to people who have a limited range of motion, or have a difficult time using their arms, hands, legs, or feet.

Augmented Keyboard – a keyboard that has been changed to help someone who cannot use a traditional keyboard. Examples include ergonomic keyboards, enlarged keys keyboards, micro-keyboards, and onscreen keyboards.

Joystick – an alternative point-and-click device for those who cannot grasp a mouse that includes a variety of handles, such as a joystick knob, t-handle, or ball handle to move the cursor around a computer display. Mouse button functions may also be accessible through the joystick.

Trackball – an alternative point-and-click device equipped with a ball used to navigate the cursor arrow for those who cannot grasp a mouse. Mouse functions may be accessible through the trackball.

Touchpad – an alternative point-and-click device found in many notebook computers where a sensor pad can be used to control the movement of the cursor arrow on a computer screen.

Switches – input devices that allow users with a limited range of motion or quadriplegic to enter input into the computer, such as mouse clicks. Examples include button, jellybean, head and neck switches, and sip and puff switches.

Head Tracking System – also known as an eye-gazing system. This system employs a camera that detects a sensor placed on a user's forehead. When the camera tracks any head and neck movement, the cursor arrow then moves accordingly on the computer screen, allowing users hands-free navigation of the computer. Can be used along with switches and an onscreen keyboard.

Language and Learning Disabilities – applies to any of various conditions (such as dyslexia) that interfere with an individual's ability to learn caused by difficulties in processing and integrating information.

Learning Systems Software – software that contains tools to assist with reading and composition. Tools include text-to-speech reading, word prediction, thesaurus, pronunciation, homonym checker, etc. Examples include Kurzweil 3000, Read & Write Gold, and WYNN by Freedom Scientific.

People Who Are Deaf or Hearing Impaired

Internet Relay Services – communication system for people who are deaf or hearing impaired using the Internet. Examples include instant messaging (IM), video relay, Web-based relay (AT&T, IP-Relay, etc.), captioned Internet conference and phone calls.

People Who Are Speech Impaired – applies to anyone who cannot speak or has difficulty speaking or being understood. Computers equipped with speech synthesis and text messaging can be used to assist people with speech impairments.

United States Access Board - an independent Federal agency devoted to accessibility for people with disabilities. Created in 1973 to ensure access to federally funded facilities, the Board is now a leading source of information on accessible design. The Board develops and maintains design criteria for the built environment, transit vehicles, telecommunications equipment, and for electronic and information technology. It also provides technical assistance and training on these requirements and on accessible design and continues to enforce accessibility standards that cover federally funded facilities.
<http://www.access-board.gov>

Section 508 - in 1998, Congress amended the Rehabilitation Act to require Federal agencies to make their electronic and information technology accessible to people with disabilities. Inaccessible technology interferes with an individual's ability to obtain and use information quickly and easily. Section 508 was enacted to eliminate barriers in information technology, to make available new opportunities for people with disabilities, and to encourage development of technologies that will help achieve these goals. Under Section 508 (29 U.S.C. ' 794d), agencies must give disabled employees and members of the public access to information that is comparable to the access available to others.

<http://www.section508.gov>

World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI)- works with organizations around the world to develop strategies, guidelines, and resources to help make the Web accessible to people with disabilities.

<http://www.w3c.org/wai>

Information Technology - any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. The term information technology includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources.

<http://www.access-board.gov/sec508/standards.htm>

Electronic and Information Technology (EIT) - includes information technology and any equipment or interconnected system or subsystem of equipment that is used in the creation, conversion, or duplication of data or information. The term electronic and information technology includes, but is not limited to telecommunications products (such as telephones), information kiosks and transaction machines, World Wide Web sites, multimedia, and office equipment such as copiers and fax machines.

<http://www.access-board.gov/sec508/standards.htm>

Alternate formats - alternate formats usable by people with disabilities may include, but are not limited to, Braille, ASCII text, large print, recorded audio, and electronic formats that comply with this part.

<http://www.access-board.gov/sec508/standards.htm>

Alternate methods - different means of providing information, including product documentation, to people with disabilities. Alternate methods may include, but are not limited to, voice, fax, relay service, TTY, Internet posting, captioning, text-to-speech synthesis, and audio description.

<http://www.access-board.gov/sec508/standards.htm>

Web Accessibility Validation Tool – also known as a web checker or web valuator; these are usually online tools or software that will check web pages and sites for usability and accessibility for people with disabilities.

<http://www.cew.wisc.edu/accessibility/resources/resources.asp?categoryid=4>

Computer Software Accessibility Checklist

- 1. Can just a keyboard be used to effectively operate this software?**
 - Is there any part of the software where using a mouse is the only option to get to what you want?
 - Are keyboard shortcuts, for example Control + S to “Save” or ALT + F to access a File menu, included to activate all text labeled functions and program menus?
 - If cascading, drop down menus, or combination boxes are used, can you effectively access and manipulate selections with a keyboard?
 - Can you solely use a keyboard to do everything this software is capable of doing?

- 2. Can you use the software while running adaptive technology or basic operating system accessibility options?**
 - Can the software be used with basic operating system accessibility options, such as filter keys, high contrast, magnifiers, narrators, onscreen keyboards, sticky keys, visual warnings when sounds are made, etc.?
 - Can the software and a user’s adaptive technology work at the same time?
 - Can you use adaptive technology to work the software? For example, does a screen reader read all the information displayed on screen? Does a screen magnifier enlarge the display?
 - Does the software disable or ignore any of the adaptive technology or user enabled accessibility options?
 - Does the software run with older versions or only the most current version of adaptive technology?

- 3. Does the software have any of its own accessibility features to assist users?**
 - Does this software provide any of its own user enabled accessibility options?
 - Do these options successfully assist user’s that need them or do they fall short when assisting users?

- 4. If using adaptive technology, can users distinguish where they are on the display?**
 - **When screens change or new windows open or close, are headings or titles used to identify where users are and what to do next?**
 - **Does a screen reader correctly identify the focus (currently active item, screen, or window)?**
 - **If multiple windows are opened on screen, can users easily tell which window is active?**

- 5. Have controls and functions for operating the software been properly labeled or described?**
 - **Do buttons, checkboxes, menus, toolbars, images, form fields (where you type in information), and any user action function (Save, Print, Copy, etc.) of the software have a text label description?**
 - **When using screen readers, is the user action correctly described? For example, if a user's focus is on the "Search" button, does the screen reader say "Search button," or once activated that the program is searching?**

- 6. Are images associated with certain user actions consistent throughout the program?**
 - **Are any user actions, such as printing, saving, searching, etc., associated with an icon or image? For example, is there an image of a printer, that when activated, will send a document to the printer?**
 - **Is the same image used for the same action throughout the software?**
 - **When moving the mouse over the image, does an alternate text tag appear identifying the image? Is this tag consistent throughout the software?**

- 7. Can all text be read when using adaptive technology, especially screen magnifiers and readers?**
 - Does the software run through the operating system's window, or does it run through its own window? For example, Microsoft Word runs through a Window's operating system window, and Windows is controlling how text is displayed on the screen. Programs like Mavis Beacon, run through its own window, and control how text is displayed, not the operating system. Programs like Mavis Beacon, that run through their own window, and not the operating system's window, have a greater chance of not being accessible to adaptive technology.
 - Are images of text used? If so, have they been accurately labeled to reflect what the image reads?
 - Is all the text displayed and typed into form fields able to be read with screen magnifiers, readers, and other voice output adaptive technology?

- 8. If used, can any animation be disabled? Is there a text only equivalent for any information displayed using animation?**
 - Are user controls for disabling and enabling animations accessible through the keyboard?
 - Can screen readers or other adaptive technology correctly read or identify the animation?
 - Does the animation interfere or inhibit the adaptive technology from working properly?
 - Does animated text have a text only, non-animated script elsewhere on the display?

- 9. If color was removed, would it inhibit operating the software in any way?**
 - If the display was viewed from a monochrome (white on black, green on black, etc.) monitor or printed from a black and white printer, could users still effectively distinguish visual elements?
 - If color is used to prompt a user action or response (ex. "Press the green button to Print or the red button to Cancel"), has another way of identifying that these are the Print and Cancel buttons been included, such as a text label?

- 10. If users can adjust screen colors, do the color choices allow for a variety of contrasts?**
- **If the program allows users to change the background color, font color, contrast, etc., are there a variety of basic and custom colors?**
 - **Does the software offer an option to choose pre-set high and low contrast, and soft background settings?**
 - **Does the program ignore color and contrast settings selected through adaptive technology or the operating system?**
- 11. Do any elements of the display blink or flash? Can they be disabled? If disabled, will it affect use of the software?**
- **Ask if software vendor can prove that any blinking or flashing elements have a blink or flash frequency greater than 2 Hz and lower than 55 Hz. This requirement is necessary because some individuals with photosensitive epilepsy can have a seizure triggered by displays that flicker or flash, particularly if the flash has a high intensity and is within certain frequency ranges. The goal here is to recognize that blinking and flickering displays can trigger seizures, and to perhaps look for another presentation method.**
- 12. Can adaptive technology users effectively enter information where appropriate?**
- **Can users access all form fields (areas where information can be typed in) solely through the keyboard?**
 - **Do forms have descriptive text labels so users know what information should be typed into each form field?**
 - **When using a screen reader, does it read the text labels identifying form fields in a logical order?**

Internet and Web-based Content Accessibility Checklist

1. For anything on a web page that is not text, is there a text equivalent for that item?
 - Anything that is not text on a web page usually includes but is not limited to an image, graphic, audio clip, applets, tickers, or other feature that conveys meaning through a picture or sound. Examples include buttons, check boxes, pictures and embedded or streaming audio or video.
 - Providing a text equivalent means that words are being used to describe what an item (that does not physically consist of text) actually is, why it is there, and any information being communicated by the use of that item or the item itself.
 - Check that all images have accurate and meaningful text equivalents. Images mostly use an “alt-tag” or “longdesc” attribute as part of the object. To check, mouse users can roll their mouse cursor over an image. If a text label or window pops up, then it has a text equivalent. Screen reader users can listen to see if an image is identified and described. It is also acceptable to simply include a text description above or below the image. For example, “The picture below shows...”
 - Be sure that images of text, graphical text (pictures of text), or text that is part of an image have a text equivalent. Be sure that the text equivalent correctly describes the image or communicates any information as part of the image. For example, if the image itself contains words, be sure the exact wording from the image is used within the text equivalent.
 - Be sure any audio has a text equivalent, such as a text transcript.

2. Is captioning, audio descriptions, or other equivalent provided for presentations that utilize both audio and video at the same time? Is captioning, descriptions, or other alternatives synchronized with the presentation?
 - Be sure that all audio has been captioned for the deaf or hard of hearing, and video has audio descriptions for blind and visually impaired.

- **Be sure that captions and audio descriptions are synchronized correctly with the audio and video. For example, synchronized captions allow someone to read captions and also watch the speaker's relevant body language.**
 - **Remember that this only applies to multimedia presentations, i.e., those presentations utilizing both audio and video at the same time. For example, the audio and video web cast of a program would need to be synchronized. An audio web cast would require a text transcript. A silent (no audio) web slide show would require a text equivalent for any images.**
- 3. If color was removed, would it inhibit use of the web site?**
- **To check, view the page using a monochrome monitor (ex. black and white monitor, etc) or by printing a page to a black and white printer. When the color has been removed, can users still use the page effectively?**
 - **Is color being used to emphasize text or indicate an action? If so, an alternate method needs to be included so users can identify what is being emphasized by the use of the colored text or action. For example, if all links on a web page are blue, than underlining the links is an acceptable method for identifying blue colored links. Another example, if users are prompted to press a green start button, than a text label above the green button saying "Press green start button" is an acceptable method.**
- 4. Do web pages ignore user defined style sheets?**
- **Style sheets are formatting instructions on how a page should be displayed (can also include how it is printed and pronounced). For example, a user specifies that they want their browser to view pages with extra large font with white characters on a black background. These preferences are set up for all pages viewed.**
 - **Does a web page override or ignore user settings? Developers can program pages to override user settings.**
 - **To check, disable style sheets within the browser (Check browser's help menu for instructions) or try changing the font size or background colors through the browser's settings.**

- 5. If a link is embedded in an image, is there an equivalent text link?**
- Frequently, web designer will use an image map. Simply, this is an image that contains a link or set of links.
 - Check to see if the image has any text links or labels. In some cases, you may have to move the mouse around the image to see if different text labels appear over different portions of the image. Screen readers will announce “image map link...” when a link is detected. These text labels alert users that by clicking or selecting the link in this particular region of the image, it will retrieve a specific web page. This is an example of a client-side image map. These can be quite accommodating to people with disabilities and those using adaptive technology.
 - On the other hand, there are image maps that do not indicate to the user which specific web page will be retrieved when a particular region of the image is selected. These are called server-side image maps, because the computer or server hosting the web page determines which page is sent based on portion of the image selected. These are not accessible image maps, requiring a redundant text link on the same page retrieving the same pages as those links used in the image map.
- 6. If information is displayed using a table(s), can columns and rows be identified by screen readers?**
- Using a screen reader, listen to how the table is read aloud.
 - Has the table been titled?
 - Have columns and rows been properly titled?
 - Has the information been presented in a logical order, i.e. does it makes sense?
- 7. If frames are used, are they accurately text labeled?**
- Frames are used to visually separate information on a web page.
 - Do the frames have appropriate text labels identifying the information contained inside them?
 - Can you easily move between frames through the keyboard?
 - Can users access all the features housed within the frame, i.e. form fields, text chatting or text chat displays, etc.?

- 8. Does anything on the page blink or flicker?**
 - **Ask if the web designers can prove whether any blinking or flashing elements have a blink or flash frequency greater than 2 Hz and lower than 55 Hz. This requirement is necessary because some individuals with photosensitive epilepsy can have a seizure triggered by displays that flicker or flash, particularly if the flash has a high intensity and is within certain frequency ranges.**

- 9. Do web sites not conforming to acceptable and approved accessibility standards offer a text only equivalent of their web site?**
 - **The World Wide Web Consortium's (W3C) Web Accessibility Initiative Guidelines, and Section 508 are the two widely accepted authorities on Web accessibility and design.**
 - **Web sites that cannot adhere to the accessibility guidelines set forth by W3C and Section 508 can offer a text only equivalent for all the information displayed and all functions available.**
 - **Does each page of the web site have a text only page? Is the text only link easy to find?**
 - **Is the text only page concurrent with the non-text only page? Is the text only page being updated?**

- 10. If scripting is used, such as JAVA, etc., is there a text equivalent so adaptive technology, like screen readers, can read the information?**
 - **An example of scripting could be a stock ticker on a web page that is animated, refreshing, and displaying information. Another example is using an image, that when a mouse cursor rolls over the image, additional information pops open on the screen, and then disappears when the mouse cursor rolls off.**
 - **Using a screen reader, can the parts of the web page executing scripts be read? Is the information being read accurate to what is being displayed?**
 - **Can users disable scripting? Does disabling the script(s) affect the use of the web page?**

- 11. If a page uses a special applet, plug-in, or application to view information, is there a link on the same page for users to download the utility they need in order to access and display the information?**
 - **Example: A web page offers documents as PDF files. Does the same web also have a link to download Adobe Reader?**
 - **Is the applet, plug in, application, or method(s) for displaying the information accessible and/or compatible with adaptive technology?**
 - **Is the applet or plug-in challenging to download or install?**

- 12. If online forms are used, can people using adaptive technology fill in and submit all the required information?**
 - **Can a keyboard be used to access all the form fields?**
 - **Are text labels used either inside or near form fields to identify what information users should be entering?**
 - **Can a screen reader identify the form(s)?**
 - **Do the forms follow a logical order? For example, if a user hears “Last Name” is the corresponding form the area where they would enter their last name?**

- 13. Is there a way for users, especially those using screen readers to skip repetitive navigational links?**
 - **Navigational links are a set of routine navigation links-frequently used to move users to pages within a web site-usually located on the top or side of each web page. For example, “Help,” “Contact Us,” etc; links that all appear on the same page within a web site in exactly the same way and location.**
 - **Can screen reader users move or skip past navigation links to access the unique content of the page?**
 - **Is the method to skip the navigation positioned before the navigation links?**

- 14. If users are given a certain amount of time for an action or response, is there any indication how much time they have left or an option to request more time?**
 - **Some web pages may expire or time out after a certain amount of time, and refresh the entire page, for example those requesting personal information.**

- Do users requiring special needs or using adaptive technology have enough time to complete all necessary form fields before the page expires or times out?
 - What indication is a user given that the page is about to expire, time out, or refresh? Does the indication effectively alert the user?
 - Is the user prompted or is there a way to request for additional time if needed?
15. Is there a help page or easily identifiable contact for users who need further assistance?
- How do users get help with how to use the web page?
 - Is there special help for those using adaptive technologies?
 - Is there a navigation guide that describes the design or layout of the web site or web page?
 - Can users contact or email for technical support?
 - Is the help page helpful and/or accessible?

Electronic Database and Computer Software Accessibility Evaluation

Use the following evaluation form when your library is ready to evaluate the accessibility of non-Web based databases and computer software. This evaluation is a condensed version of the “Accessible Electronic Database and Computer Software Guidelines.” Only one correct answer is provided for each question. Only mark the box when the product complies completely with the question, and refer back to the Guidelines when clarification is needed. The more marks means the more accessible the product is for people with disabilities.

Electronic Database and Computer Software Accessibility Evaluation

1. Can just a keyboard be used to effectively operate this product? YES
2. Can you use the product while running adaptive technology or user enabled accessibility options? YES
3. Does the product have any of its own useful accessibility features to assist users? YES
4. If using adaptive technology, can users distinguish where they are on the interface? YES
5. Have controls and functions for operating the software been properly labeled or described? YES
6. Are images associated with certain user actions consistent throughout the program? YES
7. Can all text be read when using adaptive technology, especially screen magnifiers and readers? YES
8. Can any animations be disabled without interfering with the product's performance, and do they all have a text equivalent? YES
9. If color is removed, can users still effectively operate and use the product? YES
10. If users can adjust screen colors, do the color choices allow for a variety of contrasts? YES
11. Can any elements on the display that blink or flash be disabled without effecting use of the product? YES
12. Can adaptive technology users effectively enter information where appropriate? YES

Internet and Web-based Content Accessibility Evaluation

Use the following evaluation form when your library is ready to evaluate the accessibility of any Internet or Web-based content, or interviewing potential Web site designs. This evaluation is a condensed version of the “Think Accessible” Internet and Web-based Content Software Guidelines.” Only one correct answer is provided for each question. Only mark the box when the web content complies completely with the question, and refer back to the Guidelines when clarification is needed. The more marks means the more accessible the web content is for people with disabilities.

Internet and Web-based Content Accessibility Evaluation

1. For anything on a web page that is not text, is there a text equivalent for that item? YES
2. Is synchronized captioning, audio descriptions, or other equivalent provided for presentations that utilize both audio and video at the same time? YES
3. If color is removed, can the web site still be effectively used? YES
4. Does the web page allow users to specify how the page is displayed within the browser? YES
5. If a link is embedded in an image, is there an equivalent text link? YES
6. If information is displayed using a table(s), can columns and rows be identified by screen readers? YES
7. If frames are used, are they accurately text labeled? YES
8. Can any elements on the display that blink or flash be disabled without effecting access to the web content? YES
9. If the web site does not conform to acceptable and approved accessibility standards, is there a text only equivalent of the web site? YES
10. If scripting is used, such as JAVA, etc., is there a text equivalent so adaptive technology, like screen readers, can read the information? YES
11. If a page uses a special applet, plug-in, or application to view information, is there a link on the same page for users to download the utility they need in order to access and display the information? YES

12. If online forms are used, can people using adaptive technology fill in and submit all the required information? YES
13. Is there a way for users, especially those using screen readers to skip repetitive navigational links? YES
14. If users are given a certain amount of time for an action or response, is there any indication how much time they have left or an option to request more time? YES
15. Is there a help page or easily identifiable contact for users who need further assistance? YES