

ACCESSIBILITY BEYOND EQUIPMENT AND WEB SITE DESIGN

Purchasing adaptive equipment and assuring accessible Web sites is a good start in assisting patrons with disabilities to achieve equal access to information. One more component needs to be added, and that is education. Only providing commercially produced manuals to patrons is not enough.

Huh? A colleague recently purchased a brand new laptop and digital camera, and attempted to configure the equipment to enable him to download pictures to the laptop and send them to his family and friends. After struggling with the set up for nearly two hours, he finally threw in the towel and asked for help. The first question was, "Did you read the instructions?" Accordingly, his response was: "The instructions were written in English, French, Spanish, and Japanese, and sadly, they all made about the same amount of sense."

Essentially, technology should make our lives easier, allow us to do things more conveniently, and for people with disabilities, make opportunities that were once impossible, possible. Yet, what inevitably happens is that as solutions to accessibility are found, access is deterred by instructions that are not comprehensible to novice computer users.

Libraries as computer training sites

People who do not wish to be left out of the digital future are seeking low- or no-cost classes. Libraries are emerging as a place where people can receive instructions and learn how to operate computers, regardless of age, education, or experience. It is equally important that libraries provide this same service for people with disabilities. Libraries cannot expect a patron to sit in front of an adaptive computer and know how to use it.

Rewriting the book is a start

Technology guides and instructions should be made available to patrons and staff using adaptive equipment in a language that is comprehensible to the beginner and not insulting to the advanced user. Additionally, instructions must be provided in a format the person can use independently, such as Braille, large print, or recorded formats.

For some people, learning how to operate computers and navigate the Internet is hard enough; adding how to use adaptive technologies to that mix can be overwhelming. This statement applies to both patrons and library staff, because if libraries choose to provide adaptive technologies, staff must be trained to use them. Staff should know the technology well enough to feel comfortable showing patrons with disabilities how to use these devices, and they should want to act as trainers for patrons with disabilities.

Teaching patrons to surf means meeting the optimists and the pessimists

Staff will find patrons are of two general mind-sets in their approach to learning the Internet. One group will have an optimistic approach and generally consist of patrons with no experience or limited exposure to the Web. They feel they should learn the Internet because of its wonderful potential to benefit their lives. This positive outlook helps if a patron faces challenges with certain Internet concepts or lessons because they are able to maintain their motivation to see this experience through to the end.

The second group has a pessimistic approach and generally consists of patrons who have adapted their computer with JAWS, listened to the tutorials, read the help files, and after countless number of hours on the Internet, still have no grasp of how to use the World Wide Web. This group is usually comprised of computer-savvy, independent-learning, intelligent people who tried their best to learn how to navigate the Internet with JAWS.

Make both groups of patrons realize that:

- Most of the popular Web pages and utilities (such as search engines) were not constructed with screen reader users in mind.
- Despite how knowledgeable users are in regard to using JAWS with the Internet, some pages are just not accessible.

When staff members train patrons with disabilities, they should treat them as adults who just need different vehicles to reach their destination. Although some people with disabilities may also have developmental disabilities, most do not, and are of at least average intelligence. Remember, as with most tasks we face in life, patience is a virtue and a necessity.

Become a Web guide by creating navigational guides

Until Web site developers buy into the tenets of the W3C, one way libraries can help increase accessibility and use of their site is to provide a navigational guide for people using adaptive technology, such as JAWS.

A navigational guide for Web pages and sites consists of descriptions of some of the main elements users encounter on Web pages so they can subsequently use their keyboard to access, navigate, and operate a Web site efficiently. The guide alerts the user to possible barriers and items that make screen readers go, "Huh?" Some navigational guides may tell users how to use specific software to access a site.

Libraries can select sites from research databases and Web pages linked to their own site that will greatly benefit people with disabilities and create navigational guides for these sites.

How will navigational guides help?

The navigational guides and reference work tutorials provide the computer user with a visual overview of the page via text. This overview is similar to alerting a person who is blind and entering a new area for the first time where the washroom is, where the reading room is, or where potential hazards are in relation to where he or she is currently standing.

Providing navigational guides helps Web site visitors using screen readers to move around the barriers imposed by database designers, as even the best adaptive computer user occasionally needs to request a sighted

person to describe to him or her what the screen reader is missing.

An excellent example of the use of navigational guides is provided by the Canadian National Institute of the Blind (CNIB). The guides developed by CNIB provide both bibliographic instruction (what the reference books can provide the user), as well as tutorials for those visitors using the JAWS screen reader. These include step-by-step guides ranging from how to use JAW's hot keys to how to transverse the titles and retrieve information. The guides allow novice users to use the online reference materials.

The CNIB Navigation Guide to Britannica Online for those Using Screenreaders offers the following user information:

- Describes how to login to the Britannica site, and includes a description of the dialog box that pops up and the fields that need to be filled in. The instructions also describe how to use the tab key to move from the user name field to the password field.
- Describes the location of elements found on the home page, including the search field and radio buttons, and how to enter a search query.
- Describes what is found on the search results screen, including the search box, the radio buttons, the search and clear buttons, and the results. The format with which results are displayed are also described, as well as how the user can use the Internet links to locate additional information.
- Describes the appearance of Internet links that may appear below each article.

The CNIB Web site designers provided navigational and tutorial guides to The Grove Guide to Music and Musicians, EBSCOhost Guide, Britannica Online, and The Oxford English Dictionary. It also provided a navigational guide for its own Web site. The CNIB Digital Collections and Programmes Librarian, Jennifer Horwath, estimates that creating a navigational and tutorial guide can take 10 hours to complete. Horwath says the work usually entails:

- Using the online resource with a person who is blind or visually impaired and a computer that has access technology installed.
- Creating and testing the tutorial with the same person.
- Testing the guide with a different visually impaired patron or staff member.

Horwath offers these tips for creating good navigational guides:

- Use a table of contents at the beginning.
- Include numbered steps under each explanation.
- Provide an orientation to the screen layout with pointers to key elements.

A navigational guide created by need and demand

At the time this report was written, the Greater Cleveland area had no local news Web sites that are screen reader friendly. As a result, Cleveland Public Library decided to place navigational guides on its link to Cleveland Live's Web site to help people using screen readers and adaptive technology acquire local news on the Web. Below is an example of the information provided for the screen about registering for an e-mail service.

For more information, contact Jennifer Horwath via e-mail at horwathj@iib.cnib.ca.

Guide to register for Cleveland Live News

The page is designed with three columns. The first column on the left side of the page is the site map for the Cleveland Live Web Site, containing categories and links to a host of available information. The middle column contains the registration form to subscribe for the Cleveland Live News updates. The right side of the page contains a list of links and subject headings for advertisers.

The registration form contains two parts: 1) Select Newsletters and Formats; 2) Enter your email address. If you're having a hard time reading the print size through your browser, select the "Enlarging your Browsers Font" link for instructions on increasing your browser's font.

If you're using a screen reader or the keyboard: Press the tab key until your cursor arrives at the "News Updates" check boxes.

Now, you have a choice between receiving pages in Web or text format. The difference is that Web format includes ads, articles, and graphics sent directly to you, but the text-only page sends headlines and links to the Web page articles. If you're using a screen reader, choose the text-only format, which allows you to efficiently choose the articles you want. The Web page format is the first check box. The text-only format check box is to the right of the Web format check box. The PC cursor starts on the Web format check box for each newsletter. You can press the tab key and your arrow keys to move among each newsletter's check boxes. Press the spacebar key to check or uncheck any check box. Here are the available newsletters, listed in the order they appear on the page:

Daily newsletters (Delivered Monday to Friday)

- News
- Business
- Sports
- Traffic and Weather (Web format only)

What's New newsletter

- What's New on Cleveland Live

Sports newsletters

- Sports (Same as above)
- Browns
- Indians
- Cavaliers
- High School Sports (Web Format Only)

News / Community Newsletters

- News (Same as above)
- Gas Price (Web only)
- Business (Same as above)
- Traffic and Weather (Same as above)
- Community

Entertainment / living newsletters

- Live Events
- Entertainment and Movies
- Dining
- Health and Fitness

Special announcements

If you're using a mouse: Select the newsletters and formats you wish to receive by left-clicking your mouse in the appropriate check box.

When you're finished selecting the newsletters and formats that you want, you have to provide your e-mail address. Immediately after the last newsletter choice—Special Announcements—is the edit box to type your e-mail address. For people using screen readers, you should hear something like: "Two period enter your email address colon edit." If you hear this, or something like this, then go ahead and enter your e-mail address.

When you're finished entering your e-mail address, press the tab key once more to select "Subscribe." You should receive a message in your e-mail confirming your subscription and newsletter selections. If you don't receive a confirmation message, you may have to sign-up again.

This guide helps patrons keep current with Cleveland news in spite of the poorly designed Web site, which hosts Cleveland news. Guides such as these aid people using screen readers or refreshable Braille displays to "see" the roadblocks and help them move around them.

Be aware of potential patron problems

Although libraries can only affect their immediate environment, they need to be aware of potential problems that patrons using adaptive technologies might encounter on other Web sites. Unlike Web masters, librarians are always there and always accessible, and inevitably patrons call the library when they encounter problems on the Web.

Below is a list of problems that patrons have contacted the library find answers to: "Why is this happening....?" Here is a starting point staff can use when questions arise; as staff members encounter more questions and provide more answers, the troubleshooting guide will grow and become more comprehensive.

Trouble spots for navigating the World Wide Web

After tutoring patrons with the JAWS screen reader for more than a year, quite a few of the same potholes have deflated people's rides down the information superhighway known as the World Wide Web. Provided below is a compilation of some of the most popular ruts people have fallen into using JAWS with the World Wide Web.

Problem browsers: AOL vs. Netscape vs. Internet Explorer

Netscape Navigator was the browser being used when Cleveland Public Library (CPL) purchased copies of JAWS 3.3 for its patrons. JAWS would not

Staff members have also designed Navigational Guides for the *Boston Globe*, *USA Today*, and the *Christian Science Monitor*. These are posted on the Cleveland Public Library's Web site at www.cpl.org/access.html.

read the information found on the Web site. The problem? JAWS 3.3 was not compatible with Netscape Navigator or most of the other popular browsers except Internet Explorer 4 and higher. Accordingly, CPL's Automation Department had to change the browser on the JAWS computers from Netscape to Internet Explorer.

Quite often, new JAWS owners ask if they can use browsers other than Internet Explorer. Although other browsers may work, using Internet Explorer is best because of the extensive key command support JAWS offers to Internet Explorer. With the release of JAWS 3.7, though, Henter-Joyce has provided stronger key command support for other browsers including Netscape Navigator 4.5 and AOL Instant Messenger 4.0.

Nevertheless, using JAWS with Internet Explorer has proven to be the best combination when using JAWS to navigate the World Wide Web.

JAWS and multimedia compete for sound

Multimedia is a popular feature on the Web. Unfortunately, it conflicts at times with JAWS since both compete for use of the PC's soundcard. Henter-Joyce has continually tried to improve the use of JAWS with Multimedia with each new release. JAWS 3.7 works well with RealPlayer, thanks to JAWS key command support for the operation of the RealPlayer interface. Even though synchronizing the two may take some effort, it should provide users with an accessible way of playing multimedia features on the Web.

Too many cursors: Disabling the virtual PC cursor

Frequently, patrons ask if they can disable the Virtual PC cursor when surfing the Web. Although navigating the Web, JAWS users may be surfing with a sighted buddy, or low-vision users may want to be able to follow along as JAWS reads a page. JAWS users who take advantage of the reformatting option (pressing F5 removes graphics, Java scripting, and applets, and refreshes the page in a screen reader-friendly format) may also wish to permanently disable the Virtual PC cursor, since JAWS cannot reformat while in this mode. In JAWS 3.7, the Configuration Manager is under the Utilities menu. By opening the Set Options menu on the toolbar, and going to Advanced options, users can uncheck the "Use Virtual PC Cursor," disabling it from being the default cursor. From this point, users can manually switch among the JAWS, PC, and Virtual PC cursors.

The Java and JAWS wars

For the most part, Java scripting, applets, and JAWS just do not seem to get along well with one another. Java and applets often interfere with the presentation of text on a screen, sometimes cutting out important parts of sentences or paragraphs, or delaying the presentation of text until the Java or applet has been fully downloaded. One prime example of JAWS conflicting with Java occurs when refreshing banner ads on Web pages. It can even exasperate some of the most proficient JAWS users. The best advice that an instructor can give JAWS users is to avoid Web pages that use excessive Java and applets. More often than not, there is more than one source for the same information on the Web. Instructors should try to keep tabs on and become familiar with popular-interest Web sites that are screen reader friendly.

Electronic forms when using JAWS

Online applications are extremely popular on the World Wide Web. JAWS 3.7 has been programmed with a FORMS mode that makes filling out electronic forms a little easier. Often, JAWS users say they are having diffi-

culty correcting the information they type into an edit box. Some Web pages place the PC cursor automatically inside the first edit box, and JAWS users can hear the character or words they are typing. Unfortunately, when they try to backspace or arrow through the information they have typed, JAWS reads from an entirely different location on the Web page. Once again, this involves the Virtual PC Cursor. What users hear is text being read from the Virtual PC cursor. They need to switch speech from this cursor to the PC cursor. Once the Virtual PC Cursor is in an edit or text box, a user can press the enter key on the keyboard. JAWS switches to FORMS mode, where the Virtual PC cursor is still on, but speech is emanating from the PC cursor. After leaving the edit or text box, JAWS continues reading from the Virtual PC Cursor until another edit or text box is discovered.

How to skip repetitive headers, navigational links, or banner ads

Many Web sites create identical pages that place headers, navigational links, and refreshable banner ads before the unique information contained on the page. JAWS users often become frustrated listening to this filler, which is automatically skipped by sighted people before they find the information needed. One strategy JAWS users can try is pressing the insert and enter keys together. This action causes the JAWS cursor to skip to the first text that is at least 25 characters in length and is not a link. The Virtual PC cursor begins reading text from that point. Another approach for JAWS 3.7 users is to go the Configuration Manager, Set Options menu, and under HTML Options place a check in the checkbox for Skip Past Repeated Text on New Pages. JAWS 3.7 users can also select the No Graphical Links radio button to keep JAWS from reading any graphical links, such as banner ads.

Preventing JAWS from reading graphics and image map links

Some JAWS users simply prefer to avoid having to listen to any graphics (labeled or not) and image map links being read. In this case, JAWS 3.7 users can open the HTML options in the Configuration Manager. Under Graphic Verbosity and Image Map Link Verbosity, JAWS users can select the No Graphics and No Image Map Links radio buttons to prevent JAWS from reading any graphics or image map links, allowing them to get to the information they want faster.

Graphical text versus hard text—too hard for most users

In general, screen readers such as JAWS have a difficult time reading graphical text on a Web page. JAWS can read hard text because it exists within the HTML source for a Web page, but graphical text without an <ALT> tag, or long description associated with it in the HTML source, cannot not be read by a screen reader. Once again, the best advice for JAWS users is to avoid pages that use graphical text, since no creative way exists to have JAWS read graphical text.

Dropdown boxes drop-kick JAWS users

Dropdown boxes are basically inaccessible to those using screen readers. First of all, dropdown boxes are graphical, so unless properly labeled, JAWS cannot identify them. Second, dropdown boxes hide information essential for the navigation of the page, and they cannot be opened unless the mouse cursor hovers above them. Dropdown boxes are handy for those who can see, but they are not screen reader friendly. Only if a page provides an alternate format for the contents contained within a dropdown box can screen reader use the information.

JAWS stops talking while surfing the Web

Although a page is downloading, JAWS is mainly silent until the action has completed. In some cases, JAWS stops talking altogether for minutes on end, locking users out from accessing the rest of their computers. The best remedy for situations like this is to turn JAWS off and restart it. Assigning a hot key to activate JAWS makes this process easier. Usually, JAWS begins speaking again, and users can continue to surf. If the problem persists, users should look into upgrading their soundcard.

Teaching: A two-way street

Staff will find teaching Web access with assistive technology a challenging but fulfilling experience. Staff members will no doubt learn many access tips and shortcuts from patrons. The staff should also assimilate these tips as resources and pass on the helpful ones to other users.