

2016

# Making LibGuides Accessible to All

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## Recommended Citation

Skaggs, D. (2016) "Making LibGuides Accessible to All." In A. Dobbs & R. Sittler (Eds.), *Integrating LibGuides into Library Websites* (139-155). Lanham, MD: Rowman & Littlefield.

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lita

A LITA Guide

# INTEGRATING LIBGUIDES INTO LIBRARY WEBSITES

Edited by  
Aaron W. Dobbs  
Ryan L. Sittler

# 10

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## Making LibGuides Accessible to All

*Danielle Skaggs, West Chester University of Pennsylvania*

After all of the work you've put into your LibGuides, you should make sure that as many people as possible can use them. While you may be familiar with conventions for writing for the web that help readers scan and understand your content, such as using lists and being concise, do you know how to ensure that readers with accessibility issues can fully navigate and understand your LibGuides? To help you improve the accessibility of your LibGuides, we'll start with an introduction to types of accessibility issues and then cover specifics for LibGuides administrators and authors.

### WHAT DOES HAVING AN ACCESSIBLE LIBGUIDE MEAN?

There are three groups of users who may have difficulty accessing your LibGuides. The group who may have the largest number of issues with your guides are readers who have visual disabilities or mobility challenges who, as a result, use a screen reader and/or need to navigate your guides without a mouse. The second group to consider is readers who are color-blind or have low vision. The third group to consider is people with hearing impairments. When you design for these three groups, it helps make your guides more accessible for those with learning disabilities. However, designing for people with learning disabilities is not specifically treated in this chapter. For more information on designing for learning disabilities, see WebAIM's "Cognitive Disabilities—Design Considerations" (<http://webaim.org/articles/cognitive/design>).

#### Designing for Screen Readers and Keyboard Navigation

Most readers who are blind or have significant vision impairment will navigate your site using both a screen reader and the keyboard (instead of a mouse). As the

WebAIM page “Keyboard Accessibility” (<http://webaim.org/techniques/keyboard/>) calls out, readers with mobility impairments that prevent them from using a mouse will navigate your site using a keyboard or other navigation aid; these can vary widely but designing for keyboard accessibility ensures that these readers can navigate your guides as well. You are probably familiar with designing guides that provide visual cues that readers use to navigate throughout the LibGuide. When designing for screen readers and keyboard accessibility, you need to focus on providing a properly structured guide that allows readers to easily navigate your guides.

People using screen readers cannot quickly scan the page to see all of the headings (or box titles in LibGuides). However, they can have their screen reader read all of the headings of a certain level. If the page has headings created by changing the font size and applying bold styling instead of using a heading tag, the screen reader is unable to provide this service and the person must instead go through the whole page, instead of skipping to the section they are interested in. For example, the pages in figure 10.1 are nearly identical in appearance, but the page on the left was structured with heading tags, while the page on the right used font changes to create headings.

## Welcome to the WCU Library Services for Distance Students guide!

### The guide contains:

- **Distance Support**, which defines who WCU considers a distance student, what materials are available to distance students, and how to set up your university loan account to request books as a distance student.
- **Setting Citations**, which discusses how to find articles, how to access the full text of articles, and how to request articles through interlibrary loan.
- **Online Books**, which discusses how to find books that WCU owns as well as how to locate books from other libraries.
- **Help Videos**, which contain several videos ranging from selecting a topic to using specific databases such as Project M.

Non-distance students who rarely or never travel to WCU's physical campus may find the information in this guide useful for accessing resources while off campus, but they will not be able to utilize distance student services.

Always remember that, if you need more help, you can contact a WCU librarian via phone, email, text or chat.

### Off Campus Access to Library Databases and Other Electronic Resources

Almost all of our databases and other electronic resources can be accessed from off campus.

### Who Is Considered a Distance Student?

The WCU Libraries define distance students as students who:

- take all of their classes online -or-
- take all of their classes at WCU in Philadelphia -or-
- take all of their classes at the LibGuide Center -or-
- take a combination of online classes, classes at WCU in Philadelphia, and classes at the Graduate Center.

Non-distance students may find the information in this guide useful for accessing resources while off campus, but they will not be able to request books be mailed to their home.

## Welcome to the WCU Library Services for Distance Students Guide!

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- **Distance Support**, which defines who WCU considers a distance student, what materials are available to distance students, and how to set up your university loan account to request books as a distance student.
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Non-distance students may find the information in this guide useful for accessing resources while off campus, but they will not be able to request books be mailed to their home.

Figure 10.1. Two near identical pages. The left is structured with headings and the right with font changes only.

To help you understand what someone using a screen reader sees when looking at your LibGuide or any other page, you can use a screen reader emulator. The emulator will help you determine if your page is properly structured for accessibility and will give you an idea of what people using screen readers face when using your guide. In figure 10.2, the identical pages from figure 10.1 now appear very different when viewed with the screen reader emulator Fangs (<https://addons.mozilla.org/en-US/firefox/addon/fangs-screen-reader-emulator/>).

Another aspect of properly structuring your guide for screen reader accessibility is making sure that the visual order of information on the page matches the order in the structure itself. Differences between how information displays and how it is

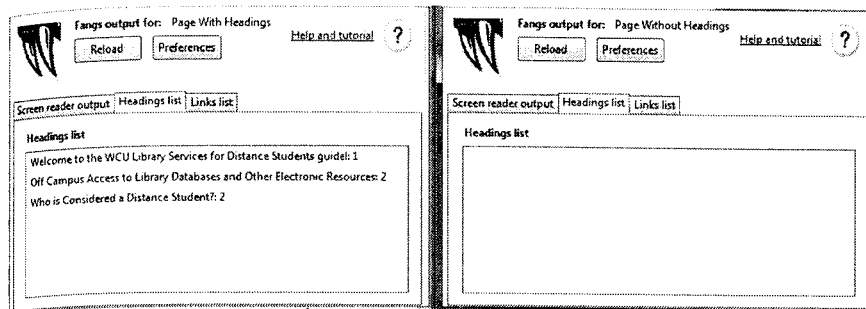


Figure 10.2. Fangs readouts for the pages in figure 10.1, showing the difference in how they appear to screen readers. *Image courtesy of Peter Krantz*

structured generally occur because of CSS styling changes. It is important that the information on the page makes sense when presented without this styling. There are several tools you can use to display a page without CSS styling, including the Web Developer add-on for Firefox (<https://addons.mozilla.org/en-us/firefox/addon/web-developer/>) and the no styles option in the WAVE web accessibility tool (<http://wave.webaim.org/>). You can quickly check LibGuides pages by viewing them on a mobile device. The order of content you see on a phone or similarly sized screen represents the order of information that a screen reader would see.

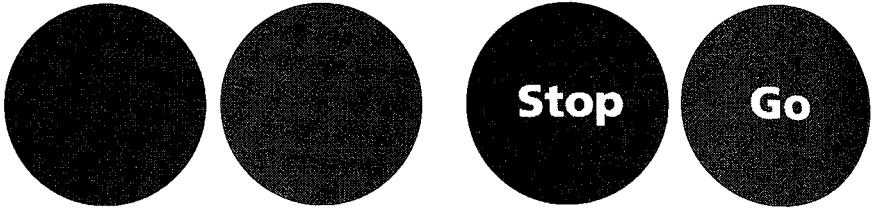
Images are another issue for screen reader users. Each image in your guide needs to have a written description associated with it, so that the screen reader has something to read about it other than noting the presence of an image. Screen reader users depend on this to understand what the image conveys visually. It's also useful for other people if the image doesn't display, whether it's because the image link is broken or they've turned off images to browse more quickly on a slow Internet connection.

While you most likely navigate the web using a mouse, readers who depend on screen readers or keyboard navigation can't use a mouse to get around your LibGuides. Therefore, all elements on the page need to be accessible by keyboard. In other words, you should be able to go to every link, navigate to different tabs, and start and control any videos on the page without using your mouse. A quick way to test this is to open your guide, click in the URL bar, and then use the Tab key to see if you can get to every part of the page. The Enter key or Space bar is usually equivalent to a mouse click. You may notice that there are a lot of menu links at the top that you need to go through before you get to the content of the page. To help readers using keyboard navigation, your guide should have a Skip Navigation link that enables them to jump to the main content of your page.

Screen readers can also navigate directly from link to link on a page. However, if link names are not descriptive or are repetitive, they are often confusing and not accessible. To help your readers, make sure the text of each link provides some indication of the content.

## Designing for Color Blindness and Low Vision

There are several types of color blindness, or inability to differentiate certain colors. A good guideline for accessibility is to never convey information with color only. Instead, use a combination of color and text or color and shape, like the example on the right in figure 10.3.



**Figure 10.3.** The circles on the left depend on color to convey information. The circles on the right use a combination of color and text.

To help readers with low vision, there should also be strong contrast between on-screen text and the background. If the visual contrast between the text and the background isn't strong enough, color-blind readers may not read the text or may only be able to see the text with difficulty. The smaller the text, the stronger the contrast between text and background needs to be.

## Designing for Hearing Impairments

To make web content accessible to those with hearing impairments, the requirement is to never convey information in audio format only. In general, this means that there shouldn't be any alerts indicated only by a sound. Any videos that are included that have narration should be captioned.

## Tools to Check Accessibility

Keeping these guidelines in mind while creating your LibGuides helps ensure that they are accessible. However, there are accessibility checkers that can provide a final check for your work. They can also be valuable tools if you are working to make existing guides accessible. Of the existing tools, the WAVE web accessibility tool by WebAIM (<http://wave.webaim.org/>) is a user-friendly, all-around accessibility checker that provides information on how to correct the problems it identifies. Among the issues it recognizes are structural problems, missing alt text, and low contrast. Figure 10.4 provides a sample of the results WAVE generates.

Other accessibility checkers you might use include

- CynthiaSays (<http://www.cynthiasays.com/>): Checks against specific accessibility standards such as Section 508 or WCAG 2.0 A.

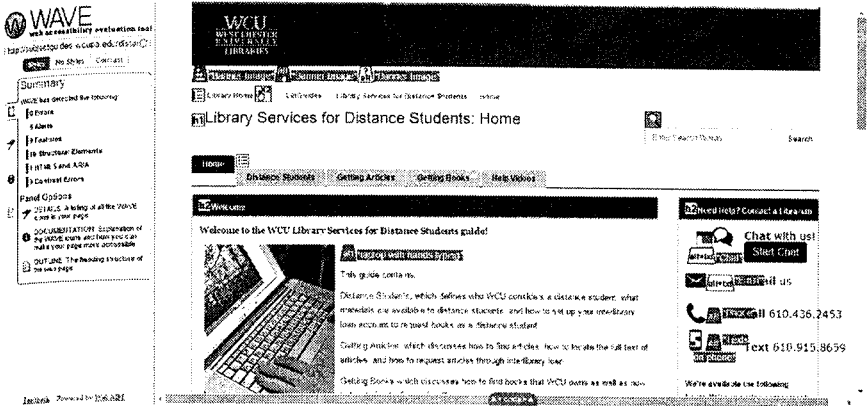


Figure 10.4. Example of WAVE results for a LibGuides page. WAVE image courtesy of WebAIM: <http://wave.webaim.org/> / WCU Libraries header courtesy of West Chester University Library

- W3C Markup Validator (<https://validator.w3.org/>): While this isn't an accessibility checker on its own, it does ensure that your documents are properly formatted. Having all your tags properly closed, or nested correctly within each other, helps your readers navigate your guide via screen reader or via keyboard.

## ACCESSIBILITY FOR LIBGUIDES ADMINISTRATORS

As a LibGuides administrator, you control a variety of settings that impact the accessibility of all your institution's guides. When you set up the look and feel of your system, there are several accessibility items to keep in mind. Fortunately, LibGuides comes with some accessibility features built in:

- Properly structured: The page title is an h1 heading, and the box titles are all h2 headings.
- Keyboard accessible: Keyboard navigation is possible and a skip navigation link is included by default.

The following sections detail some known issues and items you should keep in mind when designing the look and feel of your LibGuides. When you are finished designing, you should create a guide page that uses all box types and all content types and run it through an accessibility checker to make sure there aren't any issues. If you have multiple templates, it's worth doing this for all the templates, as well.

### Contrast Issues

When you set up the color scheme for your tabs and boxes, Admin > Look & Feel > Header / Footer / Tabs / Boxes > Tab and Box, be aware of contrast issues. You can

use the Color Contrast Checker (<http://webaim.org/resources/contrastchecker/>) to test your proposed color scheme. There are three known contrast issues in the default LibGuide color scheme. You can correct these contrast issues by specifying high-contrast color schemes using CSS styling that overrides the LibGuide defaults. For more information about CSS styling, see the W3C Schools page on color ([http://www.w3schools.com/cssref/pr\\_text\\_color.asp](http://www.w3schools.com/cssref/pr_text_color.asp)) and font-size properties ([http://www.w3schools.com/cssref/pr\\_font\\_font-size.asp](http://www.w3schools.com/cssref/pr_font_font-size.asp)). Since the new color schemes should be applied to your entire LibGuides installation, you need to add the CSS styling in the Admin settings: Admin > Look & Feel > Custom JS/CSS.

- Footer text defaults: The light blue, small font used as the default footer text also does not provide strong enough contrast. You can correct this by enlarging the text or changing the font color. There's a specific section to add your html or CSS styling for the footer text: Admin > Look & Feel > Header / Footer / Tabs / Boxes > Page Footer.
- Box-level navigation: When LibGuide authors choose to use the Side-Nav layout, they can choose whether to show box-level navigation on the page. The default color scheme used to display the box names is the same as used in the default footer text. The CSS styling for this issue can be added to the entire site, or directly in the Template Code for templates using Side-Nav layout. If you have multiple Side-Nav layout templates, it may be easier to add it in the Custom JS/CSS for the entire site.
- Profile Box's Email Me button: The default contrast on this button is not strong enough. There's no setting to change these colors in LibGuides, so you must add custom CSS to change them.

If you are a LibGuide CMS administrator, you can also decide if you want to allow your authors to customize the tab and box colors of their individual guides. If you do allow them to customize these features, you may want to recommend that they use a color contrast checker or you may want to periodically review individual guides.

## Banner Images

You can set a banner image that appears on all LibGuides at the top of the page. If you set a banner image—Admin > Look & Feel > Header / Footer / Tabs / Boxes > Page Header—the default alternate text that LibGuides provides is only “Banner Image.” WAVE flags this as suspicious alternate text, most likely since it contains the word *image*. There is no option to add alternate text for this banner image in the Page Header section. A work-around is to create a custom header in HTML, using the Display This HTML option instead of the Use This Image option.

Another issue that comes up via WAVE is duplicate links at the top of the page. This occurs because your banner image is automatically linked to your institution URL. The next link on the page in the default LibGuides setup is the beginning



of the bread-crumbs navigation shown in figure 10.5, which also links to your institution URL. A work-around is to customize your bread-crumbs navigation using custom CSS, so that the first URL of the bread-crumbs navigation doesn't match the banner URL. Another option would be to not display the bread-crumbs navigation at all, again via custom CSS.



Figure 10.5. Example of bread-crumbs navigation. *WCU Libraries header courtesy of West Chester University Library*

## Guidance for Authors

LibGuide administrators need to be concerned about accessibility issues during setup, but there are also many decisions that affect accessibility at the LibGuide author level. As administrator, you may want to provide an authoring guide that includes a section on accessibility as the University of Waterloo Library does (Szigeti 2015).

If you have LibGuides CMS, you could also consider implementing Publishing Workflow: Content > Publishing Workflow. This requires that all guides be reviewed by content reviewers (that you specify) before the guide can be published, or made public. This would allow you to have the content reviewers check the accessibility of the guide before it is published, as well as any other checks you decide upon. However, waiting for guides to be approved adds time to publication, which may frustrate your authors. It also increases the workload of the content reviewers. Deciding whether to implement Publishing Workflow is most likely part of a larger conversation regarding your LibGuides installation than just accessibility. However, if you have already implemented Publishing Workflow, adding accessibility checks to your review process is worthwhile.

## ACCESSIBILITY FOR LIBGUIDES AUTHORS

Many of the decisions you make as you create or update your LibGuides impact the guides' accessibility. Here are some guidelines to keep in mind as you create or modify your guides. The first four guidelines match accessibility problems identified by screen reader users in a 2012 WebAIM survey (<http://webaim.org/projects/screenreadersurvey4/>). The guidelines are arranged in order from most often encountered to least encountered.

- Avoid confusing links.
- Provide alternate text for all images.

- Avoid confusing forms.
- Use headings to add structure.
- Consider the presentation order.
- Avoid color contrast issues.
- Provide captioning for embedded videos.

## Avoid Confusing Links

Since screen readers can jump from link to link without reading the text around the link, the text of the link itself needs to provide some indication of where the link goes. If your links say only “click here” or “more,” someone using a screen reader has no idea what content to expect when they follow the link. Similarly, if several links on the page say the same thing but go to different pages, then screen reader users may instead assume they all go to the same place.

For clarity, each link should give a short description of where it is going. For example, in figure 10.6 the link alone does not clearly describe where it goes; the reader needs the rest of the sentence to figure it out. If you wanted to make the link descriptive, one option is the phrasing used in figure 10.7. As described on the WebAIM “Links and Hypertext” page (<http://webaim.org/techniques/hypertext/>), most screen readers also announce that it is a link, so you shouldn’t start the link text with “link to” since the word *link* would be repeated.

We are unable to get textbooks for current WCU courses through ILL; more info on your options.

**Figure 10.6.** Vague descriptive link text.

We are unable to get textbooks for current WCU courses through ILL; options for getting textbooks.

**Figure 10.7.** Link text that clearly describes the destination page.

## Provide Alternate Text for All Images

When you insert an image in LibGuides, be sure to fill out the Alternative Text field on the Image Properties dialog box as seen in figure 10.8. Every image needs to have alternative text provided. When writing alternative text, don’t start with “image of” or “picture of” since the screen reader lets the user know that it is an image. Instead, focus on how you would quickly describe the image to someone else. Try to do it in ten words or less. As suggested on WebAIM’s “Alternative Text” page (<http://webaim.org/techniques/alttext/>), a quick description won’t do; you may need to either replace the image with written description or provide a link to a long description.

If you choose to use the Books from the Catalog feature, please be aware that no alternative text will be provided for the cover images (Magnuson 2015). If your institution follows strict accessibility guidelines, you may not want to use this feature. An alternative would be to use a list and provide the book’s title and a description in

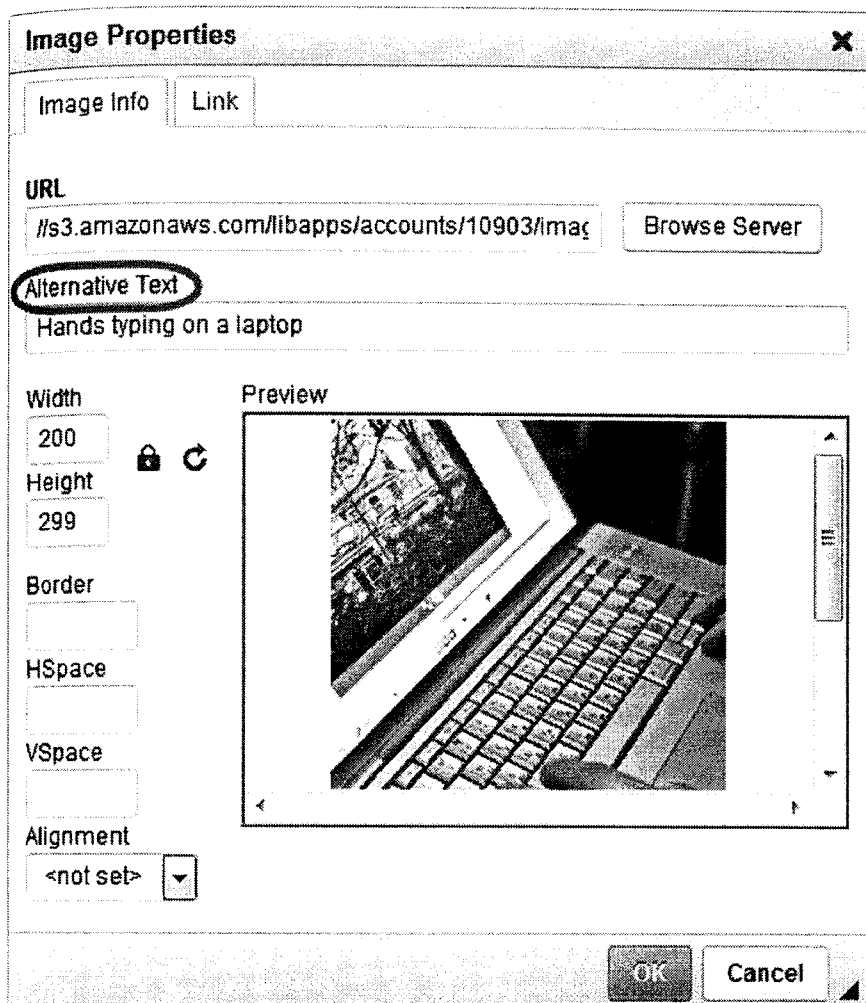


Figure 10.8. Alternate Text field on the Image Properties dialog box.

it. The book's title could link to the catalog record. Another alternative would be to use a GoodReads custom widget, which displays a customized combination of book cover, title, author, and your review (which could include call number information that you enter). These widgets provide alternate text and are keyboard accessible.

### Avoid Confusing Forms

For sighted readers, the label describing what a field is can be clearly associated with where the reader should select or enter his or her answer. However, someone using a screen reader can't depend on that visual association to know what a text entry

box, checkbox, or radio button represents. As a result, <label> elements need to be used to describe what each entry field represents.

How does this affect you, the LibGuide author who is not manually coding their guides? The problem is that the Poll option displayed in figure 10.9 does not label the radio buttons in the code. According to Magnuson (2015) this problem has been reported but not yet fixed. You also cannot access the HTML editing view for the poll to edit the code yourself. As a result, polls are not fully accessible. As an alternative, you can insert a LibSurveys widget, as these widgets are keyboard accessible and pass a WAVE check. You will need to avoid using conditional logic in the survey that makes fields appear or disappear as this makes navigation difficult for screen reader users and isn't encouraged for accessibility. Another potential work-around is to use SurveyMonkey, which specifies that it conforms with a web accessibility standard (WCAG 2.0, AA) and also provides guidelines for creating accessible surveys ([http://help.surveymonkey.com/articles/en\\_US/kb/508-Compliance](http://help.surveymonkey.com/articles/en_US/kb/508-Compliance)).

### Where do you usually start your research?

- OneSearch
- Google
- EBSCOhost
- Class readings
- Other

Submit

Show poll results

Figure 10.9. Example of a LibGuides poll.

### Use Headings to Add Structure

Screen readers can also jump directly from heading to heading within a document. If you use headings to break up the content within a box, you should use the Paragraph Format options in the editor, as shown in figure 10.10, to create headings instead of using bold or a larger font. Be sure to start the headings in each box with Heading 3, since Heading 1 is used for the guide title and Heading 2 is used for the box title. If you don't like how Heading 3 appears, you can add some styling to it in HTML code view or ask your LibGuide administrator to change it for all guides.

Rich Text Editor

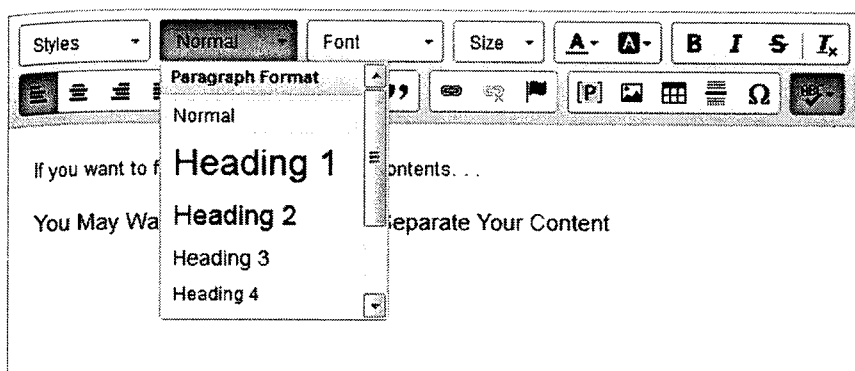


Figure 10.10. Paragraph format drop-down box displaying heading options.

LibGuides provides headings down to Heading 6 in the Paragraph Format box, so you can have four levels of headings within a LibGuides box.

Consider the Presentation Order

When you are ordering the boxes on your page, keep in mind that the order in which they are displayed to screen readers and those on mobile devices doesn't match how you might scan the page. The presentation order will start with the top left box and then work its way down the left most column; then it will move from top to bottom of the next column and so on across the page as shown in figure 10.11. If you

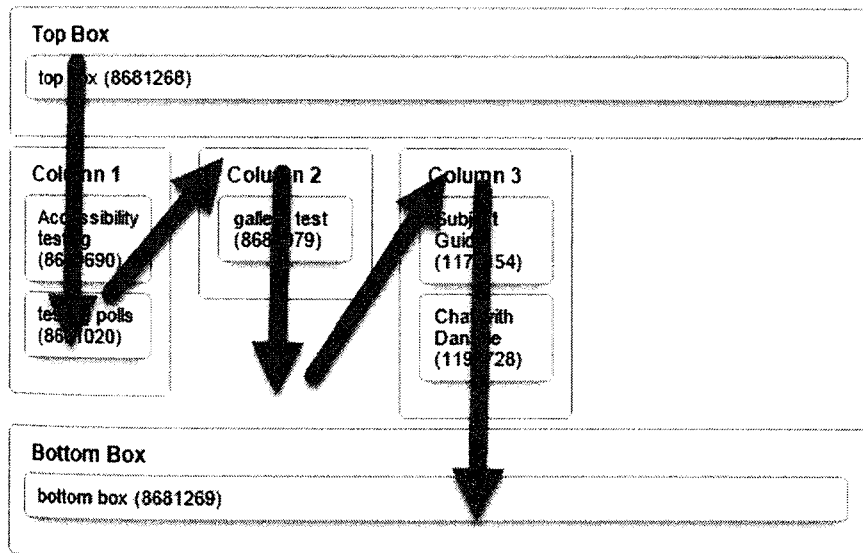


Figure 10.11. Presentation order of boxes when the display switches to a single column.

use a Top Box it will be displayed first. If you use a Bottom Box it will be displayed last. This is particularly important to keep in mind for those using Tab layout. If you use a three-column format and put the most important information in the center column, the information both mobile and screen reader users see first will not be the most important information.

If you are using Side-Nav layout, keep in mind that any boxes you put under the side navigation will be displayed before the content in the main column. If you are switching your content between Tabs layout and Side-Nav layout, the visual order of your boxes changes significantly. When you go from a three-column Tabs layout to a Side-Nav layout, all boxes move to the main column of the page, and the visual order of the boxes matches the presentation order that a mobile or screen reader user sees. When you go from a Side-Nav layout to Tabs layout, all of your boxes move to the left column, with the visual order once again matching the presentation order that a mobile or screen reader user sees.

### Avoid Color Contrast Issues

In general, you should avoid changing the color of text in your LibGuides. Rely upon bold and italic styles for emphasis instead. If you are changing any colors within your LibGuide, whether it is font color change or a change to the box title color scheme, check that the color scheme you are using has a strong contrast so that it is readable. You can use a color contrast checker like the one provided by WebAIM (<http://webaim.org/resources/contrastchecker/>) to choose colors.

Several Springshare services—such as LibChat, LibCal appointment scheduler, and LibAnswers FAQs—have widgets that look like a button that you can add to LibGuides. If you are adding any button-format widgets, you can usually customize the color of the button. Figure 10.12 is an example of a customized LibChat button-format widget. Again, check the contrast of the button you create. Some button-format widgets open in a new window, which may cause a problem for some readers using older screen readers, but it is not enough to declare these widgets inaccessible, as described on the WebAIM “Links and Hypertext” page (<http://webaim.org/techniques/hypertext/>).

Other widgets open in an overlay as a light box. Both the overlays and light boxes are keyboard accessible. The LibAnswers overlay widget in figure 10.13 uses a default color scheme for the dates and topics listed that has low contrast. However, the widget has a space for custom CSS that you can use to change these colors. The Appointment Scheduler widget also has contrast issues, and CSS styling would have to be added within the widget code manually (no custom CSS field on the widget creation page). The light box and overlays depend on scripting, which involves more complex accessibility checks, so you may want to check with the campus office that works with students for disabilities to be sure that these widgets are fully accessible to your readers.

Another area where contrast is a concern is in Gallery boxes. The default color scheme for the gallery image labels and captions (white) and the lack of a back-

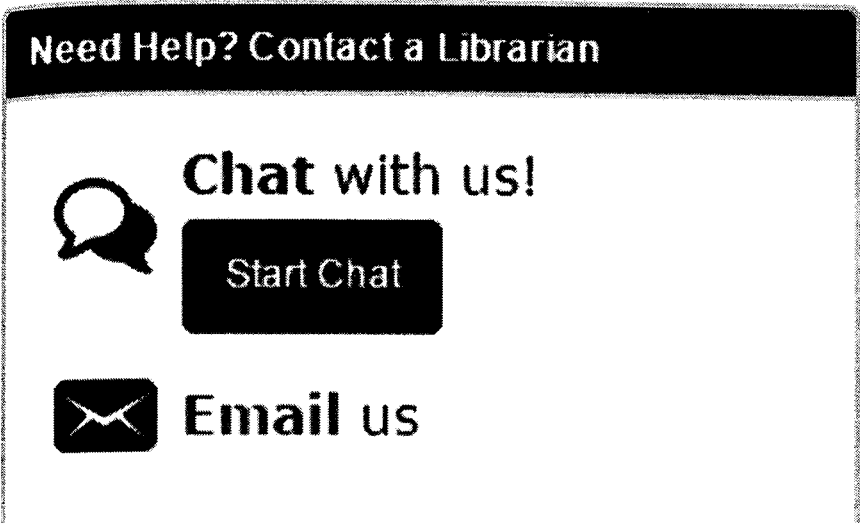


Figure 10.12. Example of LibChat button-format widget.

ground for this text causes contrast problems. The gallery images also have default alternate text of Gallery Image 1, Gallery Image 2, and so on. The default Gallery box is not accessible for this reason. You can work with your LibGuides administrator to customize the CSS to change the color scheme and change where the text is displayed to improve the accessibility. See figure 10.14 for a Gallery box with custom CSS to create stronger contrast. Figure 10.15 shows the code used to change the Gallery box.

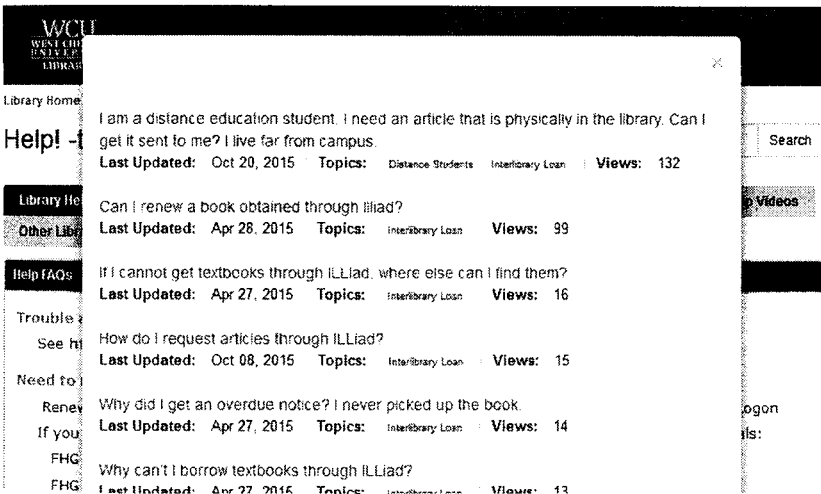


Figure 10.13. Example of a widget that opens into an overlay. WCU Libraries header courtesy of West Chester University Library

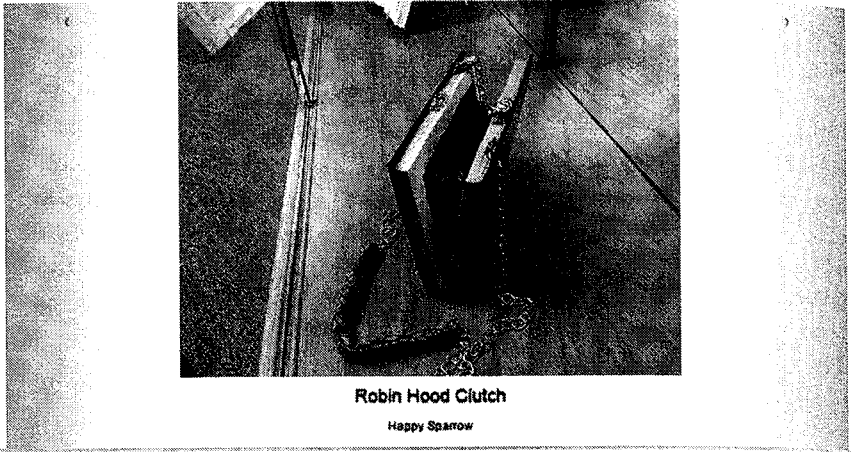


Figure 10.14. Gallery box modified via custom CSS to improve the display of captions. *Robin Hood Clutch image courtesy of West Chester University Library*

```
<style>
.carousel-caption { /* Text caption for image */
  position: static; /*center */
  padding-top: 0px; /* remove white space */
  padding-bottom: 0px;
}
.carousel-indicators{ /* Remove slide show "dots" */
  display: none;
}
.carousel-inner>.item>img{ /* Slide show image */
margin: auto; /* Center */
}
.carousel-inner>.item>a>img{ /* Center image if hyperlink */
margin: auto;
}
.s-lib-box-content{ /* remove white space */
padding-bottom: 0px;
}
</style>
```

Figure 10.15. Custom CSS modifying Gallery box to have stronger contrast.



## Provide Captioning for Embedded Videos

If you are embedding videos that have audio content on your LibGuide, the video should have captions. Captions can be open or closed as described on the WebAIM “Captions, Transcripts, and Audio Descriptions” page (<http://webaim.org/techniques/captions/>). If you are embedding someone else’s video and can’t add captioning to the video itself, you can provide a transcript of the video to meet accessibility guidelines. The transcript should be linked immediately after the video as in figure 10.16, and in HTML format if possible.

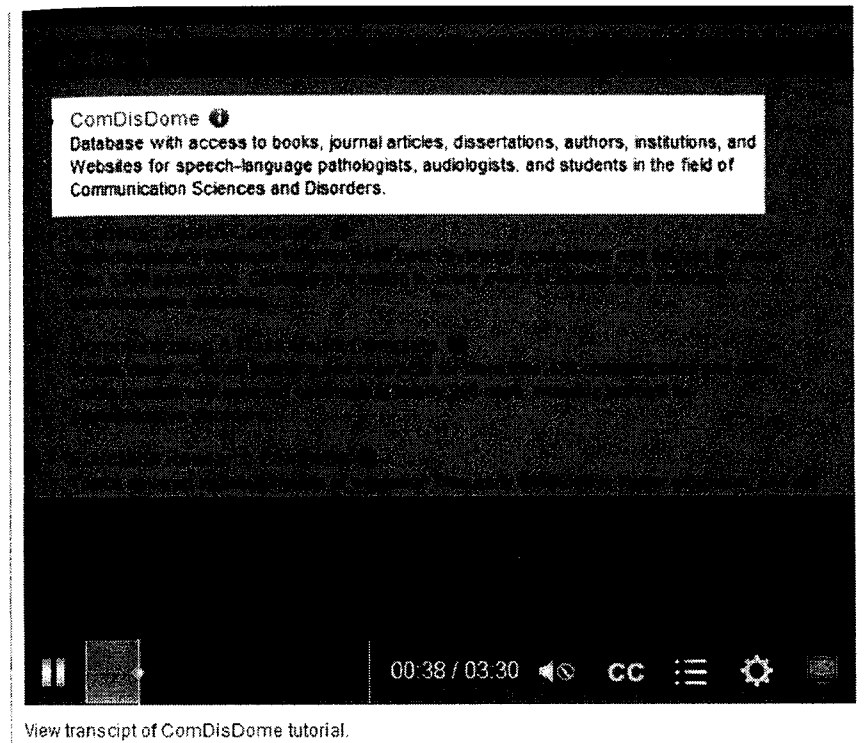


Figure 10.16. Video transcript provided immediately after embedded video.

## CONCLUSION

Make sure your LibGuides are accessible to the widest possible audience by keeping in mind the needs of three groups of readers: those using screen readers and/or keyboard navigation, those with color blindness or low vision, and those with hearing impairments. Other readers, like your mobile users, will also benefit from the work you do for these three groups.

For LibGuides administrators, this means addressing accessibility issues in the design of your LibGuides installation. You'll need to ensure that your color scheme has a strong contrast and is readable. Doing this for your high level navigation (Tabs or Side-Nav layout) and box headings is done using LibGuides-provided options. For the footer text, Side-Nav layout box listing, and Email Me buttons in all profile boxes, you'll need to add custom CSS to improve the contrast of the default color scheme. You'll also need to create a custom LibGuides header using the Display This HTML option instead of uploading a banner image to ensure that the header has useful alternate text. You may also want to alter the bread-crumbs navigation via custom CSS to remove the duplicate link caused by the header image and initial link of the bread-crumbs navigation both going to your institution's URL. Finally, you should probably provide some guidance on accessibility to your LibGuides authors, either through a guide or by adding accessibility checks to your review process in Publishing Workflow.

LibGuides authors should incorporate accessibility throughout their creation process. When designing the content of your guide, think about how the boxes you create will be presented to mobile users and screen reader users. Use headings to break up content within boxes, instead of bold. When you insert links and images, make sure the link text describes where it goes, and don't forget to fill out the alternate text field in the Image Properties. When you design images or add color to your LibGuide, make sure there's a strong contrast and that information is conveyed in more ways than just color. Adding a video? Make sure the image is captioned or be sure to provide a transcript for it. Finally, while adding widgets to your LibGuide is a great way to add interesting content or link to other services, it's important to consider the accessibility of the widgets you're adding.

There are many different points to remember as you get started with accessibility. Fortunately, there are several web accessibility checkers you can use to double-check your work. Keep in mind that your campus office that provides services to students with disabilities may also be able to help you test the accessibility of your guides and any widgets you want to add.

## RECOMMENDED RESOURCES

- WAVE web accessibility tool (<http://wave.webaim.org/>): This tool checks your site and generates a report. The errors it finds will definitely cause accessibility problems, while alerts aren't guaranteed to cause a problem but should be checked. Includes a check for contrast problems.
- Browser plug-ins that emulate screen readers:
  - Fags Screen Reader Emulator (<https://addons.mozilla.org/en-US/firefox/addon/fags-screen-reader-emulator/>)
  - ChromeShades (<https://chrome.google.com/webstore/detail/chromeshades/hklbloladblmgfpkenhlgbhoojdlfoao>)

- Color Contrast Checker (<http://webaim.org/resources/contrastchecker/>): This resource from WebAIM lets you enter colors in hexadecimal code to see if they provide enough contrast and is helpful when setting up your default color scheme
- Vischeck (<http://www.vischeck.com/vischeck/vischeckImage.php>): Upload images or download plug-ins for Photoshop (Mac and Windows) to see how your images would appear for various types of color blindness.
- WebAIM (<http://webaim.org/>): This website serves as a comprehensive reference on web accessibility issues; it includes short informative articles with examples.
- Web Accessibility for Designers (<http://webaim.org/resources/designers>): This page has an infographic from WebAIM that serves as an excellent quick reference to help you keep accessibility in mind.
- Riley-Huff, Debra A. 2012. "Web Accessibility and Universal Design." *Library Technology Reports* 48 (7): 29–35. This article provides an excellent introduction to various standards that enhance the accessibility of your content as well as advice on writing accessible web content.

## REFERENCES

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