Considerations for Accessible Online Course Content

Canvas Content Pages

Traditional media poses significant obstacles to visually impaired students, requiring alternate media in order to be accessible. Therefore, content pages must be formatted correctly to be accessible to screen readers. In addition, contrast settings must be managed for visual clarity. Digital formats, such as Word and PDF files, can be designed to work well with assistive technology. For mobility impaired students or students with low organizational skills, each step of the download process interferes with their learning, increasing the effort they need to put out, in order to start learning. Providing material in well-designed pages with the course management system lessens the effort students need to expend which lowers cognitive load.

Guidelines to a well-designed content page:

- Use the Rich Content Editor to create a content page that is easy to navigate
- Use headings to create a structured page
- Use bulleted and numbered lists when appropriate
- Use color wisely
- Create meaningful links to web resources
- Provide alternative text for images
- Create tables that are navigable for all students

Readability

Design experts argue that white space helps readers navigate and process information. There are three design elements that violate guidelines for white space use:

- The paragraph is too long.
- The text is justified on both left and right margins
- The space between lines is too smaill
- The Better Way:
- Keep paragraphs short and concise
- Left-justify most text
- Use the default spacing in Canvas to ensure text spacing is at least 1.5

Chunking

Cognitive scientists have found that our short-term memory doesn't hold much information. Asking students to keep too much information in their short-term memory while they process a long paragraph might decrease their comprehension. Chunking allows you to break information up into digestible pieces, which aids in comprehension, helps students skim the page more quickly and efficiently, and helps students who may be overwhelmed by large blocks of text. Moreover, chunking into smaller, shorter paragraphs

creates more white space, and this space literally gives readers a break—a visual pause when skimming a page.

Headings

White space can be complemented with variations in text. Headings help readers by creating stopping points throughout the page, which allows readers to quickly skim and create an overview of the material. To be most effective, headers should be descriptive, and should be formatted using HTML.

Lists

The final design feature that both lessens cognitive load and enhances the use of textual and white space are lists. Bulleted and numbered lists chunk material and enhance white space, so are great tools for certain types of information.

Designing for the Visually Impaired

White space, chunking, headings, and lists provide visual cues for readers that help them process information. There are two other important visual cues that can help students—images and hyperlinks. These provide rich visual cues to help students navigate content and process information. When fully sighted students experience your course, they see these differences. Visually impaired students can't see these visual cues. Instead, when a web page is formatted correctly, they listen to the text.

Screen Readers

Visually impaired students use an assistive technology called a screen reader, which uses specially designed software to read web-based text to the user. Screen reader software is sophisticated. It allows users to scan the page by telling the screen reader to look for headings, images, lists, or hyperlinks. To do this, however, the screen reader uses tags—HTML coding—to find the features. Text that has not been tagged correctly is like a giant block of text—unfriendly, uninviting, and not useful.

Trouble Spots

Paragraph Styles: Well-meaning faculty often use the wrong tools within the Rich Content Editor to format headers. Though using font size, bold, and underline to create a header may look nice, these formatting features don't have HTML tags that screen readers need to identify the headers. Moreover, underlined text, has a very specific meaning in web-based contexts—it denotes a hyperlink. Underlining your text may confuse sighted users, who will expect the text to link them to another page. To properly tag headings, use the styles form the drop-down paragraph styles menu.

Nesting or Semantic Structure: Even when the paragraph style tool is used, sometimes the heading structure—called nesting or semantic structure—does not follow in order. Heading levels that are out of order may confuse students who use the heading structure to help them understand the relationship between concepts. For instance, Canvas Heading Level 3 is smaller than Heading Level 2 and uses a bold font. There is both a visual

difference (for sighted students) and a coded difference (for students using a screen reader). Be sure your headings are in order. The title of each Canvas Content Page is Heading Level 1, so the styles available for use begin with level 2. Your headings, then, should start with level 2.

Bulleted and Numbered Lists

Errors occur when instructors create lists without using the list style. Highlight the text that is part of your list, then select either the bulleted or numbered list style.

Best Practices for Hyperlinks

The ability to create hyperlinks is a great asset to online learning. Properly formatted hyperlinks help users scan for important information, identify outside resources, and recognize when they should select this text to access the resources. For sighted users, there are two important design standards that help the user identify a hyperlink—they are blue and underlined. The color stands out from the rest of the text, allowing readers to scan and select the link. It is a rich visual cue.

Common Mistakes

Hyperlinks can have accessibility challenges.

Redundant Link Text: When a screen reader comes to a link within a block of text, it announces to the user that it sees a link. It then reads the text of the link. Since the screen readers identifies the hyperlink and states "link," you should avoid using "link" or "link to" in your hyperlink.

Ambiguous Link Text: Screen readers provide the ability to scan a page and create a "Links List." This allows the user to listen to a list of hyperlinks that are available on the page and navigate directly to the desired hyperlink as opposed to being forced to listen to the entire page, line-by-line. The Links List can be helpful, but only if the link text is descriptive. However, hyperlinks may be named in such a way that either the purpose or destination of the link is unclear. Links need descriptive text that provide context and allows users to better understand the link.

Alternative Text for Images

Images provide visual appeal and can convey important information. Many images have a pedagogical purpose and require a description explaining the information the image conveys. The problem occurs when we add an image that provides content to students but fails to provide adequate text alternative for visually impaired students. Alternative text allows you to provide a description of the image.

Common Mistakes

- A purely decorative image does not have a null alt text
- The file name, including png. or .jpg is used instead of alt text
- Not enough alt text is provided to explain content rich images
- The actual text of the alt texts contains redundant information

Use of Color

Color can add visual appeal to your pages, heighten the level of professionalism, and provide focus for important information. In order for color to work, however, it needs to be perceivable. Poor color choices can affect students with low vision or who are color blind.

Common Mistakes: Using color can interfere with learning when the color contrast—the difference in color between the background and the text or image—is not sufficient. Sighted users also suffer when color contrast is not high.

How to Use Color Correctly

Color Contrast: When possible, use default settings. If you use custom colors, check the contrast through free online color contrast sites such as WebAim or ACART Communications.

Color Confusion: Avoid using color as the sole means of providing information. Instead, use redundant channels for providing information, such as shape and color.

Using Tables

Tables need to be properly tagged to assist in navigation. Instructors often fail to tag the header row in tables or use the wrong format. Simply choosing to make the titles in the header row bold will not make the table accessible.

How to Create a Table with a Labeled Header Row

To insert a table into your Canvas content page, select the Table icon from the editing bar. From the drop-down menu, select insert table, and then select the number of cells across and down that you will need.

Your table template will appear, but it is not yet formatted. When you are ready to format, put your cursor in the top left-hand cell, then select the table icon from the editing menu.

1. First, select Table Properties. When the editing box appears, set the width and height, if you have constraints (though it is okay to leave this blank).
2. Next, set the cell spacing and the cell padding.
3. Finally, set a border.
4. When you're done setting these properties, select OK.
5. Next, tag your header row so the screen reader will be able to identify the header. With your cursor still in the upper left corner, select the table icon, and then choose Row, and Row Properties from the drop-down menu. For row type, choose Header.

Designing Accessible and Usable Documents and Files

What is the best mode of delivery?

Content Pages are inherently more accessible than documents or files. Always ask yourself if there is a reason to provide a downloadable document or file to students. In addition to technical accessibility issues, downloading, archiving, and opening documents can reduce usability. Forcing students to download material leads to several issues:

- Low-income students who are using a public computer will not be able to store the document
- Students with organizational problems may have trouble archiving the document and finding it later
- Students without printers may not have the ability to use the document
- Students using mobile devices may not be able to open all documents

Software Requirements

If, after taking these issues into consideration, there is still a compelling reason to provide an electronic file or document to your students, there is another consideration—what software will your students need to open the file you provide for them?

In an online course, required software is handled like textbooks and other course materials. It is the instructor's responsibility to ensure students have all the information they need to purchase or access the textbook and required course materials before the class starts, including software.

To meet the minimum requirements, you should include a section in your Syllabus and/or Orientation module that lists all required software and provides links to where the student can purchase the software. Better yet, provide your documents and files in formats that are accessible using free or open source software, such as PDF, Google Docs, or OpenOffice.

Creating an Accessible Document

Basic Tips

- Use styles to denote headings
- Use list styles to create bulleted and numbered lists
- Provide alternative text for all images
- Ensure headers within tables are tagged
- Ensure adequate color contrast between all text and background
- Use tabs, not spaces to move words

Hyperlinks in Documents

Hyperlinks in documents differ from hyperlinks in Content Pages. To design your documents well, you have to think about how students will use the document. Students using screen readers will always access the document electronically. Some students, however, will print their documents. In this case, the meaningful text of the link obscures the URL. For this reason, hyperlinks in documents need to be formatted differently. When including a hyperlink in a document that may be printed, include the URL after the meaningful link text. Note that the URL is not a hyperlink. Formatting your links this way will allow those printing the document to have access to the URL, while allowing those using a screen reader to hear the meaningful link rather than the URL when using the Link List feature.

Include Images with Alt Text

When providing alternative text for images, the CCC High Tech Center Training Unit offers the following guidelines:

- Keep the alternative text brief (10 words or less), but be descriptive
- If there is text content in the image, include the exact text in the alternative text box
- Do not use the word "image" to begin your description
- If the image is very detailed and cannot be summarized in a few sentences, consider placing additional information about the image into the page text preceding or following the image

Retrofitting Documents

Start with built-in accessibility checkers. Move through the document and ensure all headers, lists, tables, and images are formatted correctly.

Curating Accessible Documents

When curating documents (to select and use a document made by someone else), it is important to ensure their accessibility. Here is a checklist:

1. Open the document in your word processor.
2. Run the accessibility report
3. Do a manual check for headers, properly formatted lists, meaningful links, alt text, and formatted tables, and use the online tool to check for color contrast errors.

Using Presentation Files as Instructional Material

Presentation files, such as Powerpoint, must be fully accessible. Here are some tips for ensuring your presentation is accessible:

Use Predesigned Themes: These include already formatted lists, image and text boxes, and headers. Each of these pieces already contain the important coding tag that will allow a screen reader to understand the structure of each slide in the presentation.

Don't Add Text Boxes: The pre-designed themes contain hidden tags that dictate the reading order of the slide. If you add additional text boxes, you may interfere with the logical flow of the material.

Give Every Slide a Unique Title: Like headers and link text, users can program their screen reader to quickly scan the presentation by looking at each slide's title. Your slide titles will be more helpful if they are unique and if they are descriptive.

Include Alt Text: All images, graphs, and charts should have alternative text.

Use Column Headers for All Tables: Be sure any tables have a header row. PowerPoint tables tag header rows by default.

Include Captions: If you have embedded or linked video, make sure it is captioned, and if you have embedded or linked audio files, be sure to include a transcript.

Accessible PDFs

An accessible PDF is built from an accessible Office or Google document. If the original file has an accessibility issue, that issue will be passed on in the PDF format. There are two options for dealing with this:

- Ensure that your documents are 100% accessible before you convert them to PDF, or
- Fix the accessibility issues in Adobe Acrobat Pro

Checking your PDFs

The best way to check a PDF is with Adobe Acrobat Pro. To run an accessibility report, open your PDF in Adobe Acrobat Pro:

1. Select the Accessibility tool
2. Select Full Report from the menu bar
3. Select Start Checking
4. The accessibility report will open in the left column. Follow the feedback to correct errors

Creating and Using Videos

All Video Should be Perceivable and Understandable

In academic circles, the conversation about incorporating video in online courses is usually dominated by the legal mandates that all instructional material needs to be perceivable. In essence, if it is visual, there needs to be an audible equivalent, and if it is audible, there needs to be a visual equivalent.

Closed Captioning

While some argue that closed captions are a lot of work to meet the needs of a small group of students, it turns out that universal design benefits many. In a recent survey on student use of captions, 3PlayMedia discovered 75% of students use captions. Here are reasons why:

- They have a hearing impairment
- They are listening/viewing from a public place
- They are listening/viewing at work
- Captions help with studying

Four Basic Guidelines for Captioning

- The captioning must be complete, which means the video must be captioned from start to finish, including noting opening music and background noises, when intentional
- The captions must be 99% accurate. This means literally word-for-word, including grammar and punctuation

- The captions should display synchronously with the audio, running neither too fast or slow, and they should be on-screen and an adequate amount of time to allow careful reading
- The caption placement should not obscure other important information

A Note about Auto-Captioning

Many people feel that auto-captioning is close enough. Look carefully, however, With auto-captioning, the errors that are most likely to appear are misrepresentations of key words, vocabulary, and names—exactly the terms you want to get right for your students.

Transcripts

Transcripts alone are not sufficient for video. Whenever you have pictures and sound, then the captioned text and video must be synchronized. Transcripts are fine for audio-only podcasts, however.