



California Open Online Library for Education & Accessibility

COOL4Ed (the California Open Online Library for Education) was created so that faculty can easily find, adopt, utilize, review and/or modify free and open etextbooks for little or no cost. The COOL4Ed accessibility open textbook evaluations can inform faculty, staff, and students how the free and open etextbooks meet 15 accessibility “checkpoints” that could impact the learning of learners with a range of disabilities.

SUMMARY OF ACCESSIBILITY EVALUATION:

Textbook: Introduction to Mass Media
Format of Textbook: HTML

Assistive Technology (AT) Evaluation Score: Overall	7.3 (Maximum score = 10)
<p>Assistive Technologies (AT) Evaluations applies specialized tools and software in the accessibility evaluation process. These specialized assistive technologies, see list below, are typically not used or available by the general public into the accessibility evaluation process.</p> <ul style="list-style-type: none"> • Accessibility features of desktop operating systems (e.g. high-contrast display themes, settings from the Keyboard and Mouse control panels) • Accessibility-related software included with desktop operating systems (e.g. VoiceOver, Microsoft Narrator) • Third-party accessibility software and hardware: • Screen readers (e.g. JAWS, Window Eyes) • Magnification software (e.g. ZoomText Magnifier/Reader, MAGIC Pro with Speech) • Reading software for users with learning disabilities (e.g. Read and Write Gold, Kurzweil 3000) • Refreshable Braille displays 	
Non- Assistive Technology (NAT) Evaluation Score: Overall	8.6 (Maximum score =10)
<p>Non-Assistive Technologies (NAT) Evaluations applies only native or basic tools and software such as the keyboard and Narrator in the accessibility evaluation process. These non-assistive technologies are readily available and used by the general public.</p>	



COOL4Ed Accessibility Evaluation Methods:

The California State University [Accessible Technology Initiative](#) and [MERLOT](#) (Multimedia Educational Resources for Learning and Online Teaching) developed the rubric or “checkpoints” for the accessibility evaluation. [CAST](#), a nationally recognized organization with expertise in accessibility and UDL, reviewed and affirmed the appropriateness and value of the accessibility evaluation rubric and contributed the references and support resources to help people learn how best to design, evaluate, and remediate the learning materials to maximize the accessibility of the learning resources for all. The “checkpoints” have been built upon the Section 508 technical standards and has been organized and tailored to the typical characteristics of digital resources used in higher education courses.

The accessibility evaluations were performed by the [Center for Usability in Design and Accessibility](#) at California State University, Long Beach; faculty and graduate students with expertise in human factors, usability, and accessibility performed the evaluations of over 150 free and open etextbooks. COOL4ed.org has published the accessibility evaluation rubric and provides a detailed description of the methodology used to evaluate the accessibility of the etextbooks in COOL4ed.

LOOKING FOR DETAILED ACCESSIBILITY REPORTS?

[See Detailed Accessibility Evaluation Report using Assistive Technologies](#)

[See Detailed Accessibility Evaluation Report using Non-Assistive Technologies](#)



DETAILED ACCESSIBILITY EVALUATION REPORT using Assistive Technologies

Assistive Technologies (AT) Evaluations applies specialized tools and software in the accessibility evaluation process. These specialized assistive technologies, such as Kurzweil and NVDA, are typically not used or available by the general public into the accessibility evaluation process.

1. Accessibility Documentation

A. The organization providing the online materials has a formal accessibility policy.	Fail
Additional Information:	No information found about Wikibooks's formal accessibility policy.
B. The organization providing the online materials has an accessibility statement.	Fail
Additional Information:	No information found about Wikibooks's accessibility statement.
C. An Accessibility Evaluation Report is available from an external organization.	Fail
Additional Information:	No information found about Wikibooks's accessibility evaluation report.

2. Text Access

A. The text of the digital resource is available to assistive technology that allows the user to enable text-to-speech (TTS) functionality.	Fail
Additional Information:	1/2 chapters allowed the reader to read the content and navigate through it without skipping any content (Ch. 3). However, chapter 10 would not allow the reader to skip through the content, rather than continuing with reading the content for the textbook, the NVDA reader read the sidebars instead.

3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
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Additional Information:	2/2 chapters allowed proper size adjustments of font without horizontal scrolling, able to zoom in and out (Ch. 3, 10).
B. The resource allows the user to adjust the font size and font/background color (or is rendered by an application such as a browser, media player, or reader) that offers this functionality).	Pass
Additional Information:	2/2 chapters allowed proper adjustment of font colors using Care Your Eyes program (Ch. 3, 10).

4. Reading Layout

A. Text of the digital resource is compatible with assistive technology that allows the user to reflow the text by specifying the margins and line spacing (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	Pass
Additional Information:	12 web pages were available for the textbook. 12/12 webpages had proper reflow of text.
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	N/A
Additional Information:	No PDF version available.

5. Reading Order

A. The reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology.	Pass
Additional Information:	3/5 pages read through all of the content of the book without skipping any information (Ch. 3, 10, 11). However, there were two chapters that were left blank and had no information (Ch. 6, 8).



6. Structural Markup/Navigation

<p>A. The text of the digital resource includes markup (e.g. tags or styles) that allows for navigation by key structural elements (chapters, headings, pages) using assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).</p>	<p>Fail</p>
<p>Additional Information:</p>	<p>1/2 chapters were navigable using the NVDA hotkeys (Ch. 3). Chapter 10 was unnavgable using the NVDA hotkeys. Rather than navigating through the content in the textbook, the NVDA reader was reading the headings located on the sidebar of the page even though there were headings in the textbook.</p>
<p>B. The text of the digital resource includes markup for bullets and numbered lists that is compatible with assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>8/10 lists were navigable using the NVDA hotkeys (Ch. 3). The remaining 2 lists were not read aloud and were not found (Ch. 3). These lists were the glossary list and the references list.</p>
<p>C. If the text of the digital resource is delivered within an ebook reader application, a method is provided that allows users to bypass the reader interface and move directly to the text content that is compatible with assistive technology.</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>Not using reader application.</p>

7. Tables

<p>A. Data tables include markup (e.g. tags or styles) that identifies row and column headers in a manner that is compatible with assistive technology (or are rendered by an application</p>	<p>N/A</p>
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such as a browser, media player, or reader that offers this functionality).	
Additional Information:	No tables found.

8. *Hyperlinks*

A. In-book links take you to a location within the textbook. For example, the table of contents would be considered in-book links and embedded links take you to the correct location in the book.	N/A
Additional Information:	All hyperlinks are live.
B. Live hyperlinks take you to any website or webpages external to the book.	Fail
Additional Information:	42/50 hyperlinks functioned properly (Ch. 1, 2, 3, 11). The remaining 8 led to websites that were not found on the internet (Ch. 1(2), 2(2), 3(3), 10). 12/50 hyperlinks had proper descriptions that displayed where the links would lead to on the internet (Ch. 3, 11). However, the remaining 38 hyperlinks were labeled as URLs (ch. 1(14), 2(14), 3(9), 10).
C. Live links take you to the correct webpage that is functioning properly.	Pass
Additional Information:	42/50 hyperlinks functioned properly (Ch. 1, 2, 3, 11). The remaining 8 led to websites that were not found on the internet (Ch. 1(2), 2(2), 3(3), 10).
D. Live links are descriptive enough for the users to know where it should take them.	Fail
Additional Information:	12/50 hyperlinks had proper descriptions that displayed where the links would lead to on the internet (Ch. 3, 11). However, the remaining 38 hyperlinks were labeled as URLs (ch. 1(14), 2(14), 3(9), 10).

9. Color and Contrast

<p>A. All information within the material that is conveyed using color is also available in a manner that is compatible with those that do not perceive color, and information conveyed by color is also conveyed in other ways.</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>Headers and normal text are consistently black and links are consistently navy blue.</p>
<p>B. Information is conveyed from the sub-categories for contrast.</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>Headers are black against a white background. Normal text are black against a white background. Links are navy blue against a white or light grey background and passed the color contrast evaluation.</p>
<p>C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>Headers are black against a white background.</p>
<p>D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>Normal text are black against a white background. Links are navy blue against a white or light grey background and passed the color contrast evaluation.</p>
<p>E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>No simple images found.</p>

10. Language

<p>A. The text of the digital resource includes markup that declares the language of the content in a manner that is compatible with assistive technology.</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>Language markup=En.</p>



B. If the digital resource includes passages in a foreign language, these passages include markup that declares the language in a manner that is compatible with assistive technology.	N/A
Additional Information:	No passage markup.

11.Images

A. Non-decorative images have alternative text that is compatible with assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	N/A
Additional Information:	No non-decorative images found.
B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.	N/A
Additional Information:	No decorative images found.
C. Complex images, charts, and graphs have longer text descriptions that are compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader) that offers this functionality).	N/A
Additional Information:	No complex images found.

12.Multimedia

A. A synchronized text track (e.g. open or closed captions) is provided with all video content.	N/A
Additional Information:	No multimedia content found.
B. A transcript is provided with all audio content.	N/A
Additional Information:	No multimedia content found.
C. Audio/video content is delivered via a media player that is compatible with assistive	N/A



technology. This includes support for all criteria listed in Section 15 below.	
Additional Information:	No multimedia content found.

13.Flickering

A. The digital resource content does not contain anything that flashes more than three times in any one-second period.	Pass
Additional Information:	No flickering content.

14.Science, Technology, Engineering, and Math (STEM)

A. STEM figures have appropriate markup that indicates that the image is a figure.	N/A
Additional Information:	No STEM content found.
B. STEM graphs have appropriate markup that indicates that the image is a graph.	N/A
Additional Information:	No STEM content found.
C. STEM equations have appropriate markup that indicates that the image is an equation.	N/A
Additional Information:	No STEM content found.
D. STEM tables have appropriate markup that indicates the image is a table.	N/A
Additional Information:	No STEM content found.
E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A
Additional Information:	No STEM content found.
F. STEM graphs have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A



Additional Information:	No STEM content found.
G. STEM equations have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A
Additional Information:	No STEM content found.
H. Assistive technology used can access the content from the STEM tables.	N/A
Additional Information:	No STEM content found.

15. Interactive Elements

A. Each interactive element (e.g. menu, hyperlink, button) and function (e.g. annotations) allows keyboard-only operation both with and without assistive technology.	N/A
Additional Information:	No interactive elements found.
B. Each interactive element conveys information to assistive technology regarding the element's name, type, and status (e.g. "Play, button, selected").	N/A
Additional Information:	No interactive elements found.
C. All instructions, prompts, and error messages necessary to complete forms are conveyed as text to assistive technology (or are rendered by an application such as a browser, media player, or reader that offers this functionality).	N/A
Additional Information:	No interactive elements found.



DETAILED ACCESSIBILITY EVALUATION REPORT using Non-Assistive Technologies

Non-Assistive Technologies (NAT) Evaluations applies only native or basic tools and software such as the keyboard and Narrator in the accessibility evaluation process. These non-assistive technologies are readily available and used by the general public.

1. Accessibility Documentation

A. The organization providing the online materials has a formal accessibility policy.	Fail
Additional Information:	Not found
B. The organization providing the online materials has an accessibility statement.	Fail
Additional Information:	Not found
C. An Accessibility Evaluation Report is available from an external organization.	Fail
Additional Information:	Not found

2. Text Access

A. The text of the digital resource is available to assistive technology that allows the user to enable text-to-speech (TTS) functionality.	Pass
Additional Information:	2/2 chapters pass. 2 & 8 were checked using text to speech on google chrome.

3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	2/2 chapters pass. 2 & 8 were checked.
B. The resource allows the user to adjust the font size and font/background color (or is rendered by an application such as a browser, media player, or reader) that offers this functionality).	Pass



Additional Information:	2/2 chapters pass. 2 & 8 were checked using save your eyes on google chrome.
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4. Reading Layout

A. Text of the digital resource is compatible with assistive technology that allows the user to reflow the text by specifying the margins and line spacing (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	Pass
Additional Information:	2/2 chapters reflow when zooming to 200% and also reflow when making the web browser smaller.
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	N/A
Additional Information:	No printed/pdf version found.

5. Reading Order

A. The reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology.	N/A
Additional Information:	Non-Assistive Technology Only.

6. Structural Markup/Navigation

A. The text of the digital resource includes markup (e.g. tags or styles) that allows for navigation by key structural elements (chapters, headings, pages) using assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	N/A
Additional Information:	Non-Assistive Technology Only.



B. The text of the digital resource includes markup for bullets and numbered lists that is compatible with assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	N/A
Additional Information:	Non-Assistive Technology Only.
C. If the text of the digital resource is delivered within an ebook reader application, a method is provided that allows users to bypass the reader interface and move directly to the text content that is compatible with assistive technology.	N/A
Additional Information:	Non-Assistive Technology Only.

7. Tables

A. Data tables include markup (e.g. tags or styles) that identifies row and column headers in a manner that is compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader that offers this functionality).	N/A
Additional Information:	Non-Assistive Technology Only.

8. Hyperlinks

A. In-book links take you to a location within the textbook. For example, the table of contents would be considered in-book links and embedded links take you to the correct location in the book.	N/A
Additional Information:	HTML document only contains live link, no inbook links available.
B. Live hyperlinks take you to any website or webpages external to the book.	Pass
Additional Information:	Average Score



C. Live links take you to the correct webpage that is functioning properly.	Pass
Additional Information:	20/20 link pass. Links are mostly found in table of contents.
D. Live links are descriptive enough for the users to know where it should take them.	Pass
Additional Information:	20/20 link pass.

9. Color and Contrast

A. All information within the material that is conveyed using color is also available in a manner that is compatible with those that do not perceive color, and information conveyed by color is also conveyed in other ways.	Fail
Additional Information:	Non-Assistive Techonology Only.
B. Information is conveyed from the sub-categories for contrast.	Pass
Additional Information:	Average Score
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	Pass
Additional Information:	2/2 chapters pass. Headers are black and background is white.
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	Pass
Additional Information:	2/2 chapters pass. Text is black and background is white.
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	N/A
Additional Information:	No simple images found.



10. Language

<p>A. The text of the digital resource includes markup that declares the language of the content in a manner that is compatible with assistive technology.</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>2/2 chapters pass. 2 & 8 were checked using w3c.</p>
<p>B. If the digital resource includes passages in a foreign language, these passages include markup that declares the language in a manner that is compatible with assistive technology.</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>No other language found.</p>

11. Images

<p>A. Non-decorative images have alternative text that is compatible with assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>2/2 chapters pass. 2 & 8 were checked using w3c.</p>
<p>B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>2/2 chapters pass. 2 & 8 were checked using w3c.</p>
<p>C. Complex images, charts, and graphs have longer text descriptions that are compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader) that offers this functionality).</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>No complex images found.</p>



12. Multimedia

A. A synchronized text track (e.g. open or closed captions) is provided with all video content.	N/A
Additional Information:	No multimedia found.
B. A transcript is provided with all audio content.	N/A
Additional Information:	No multimedia found.
C. Audio/video content is delivered via a media player that is compatible with assistive technology. This includes support for all criteria listed in Section 15 below.	N/A
Additional Information:	No multimedia found.

13. Flickering

A. The digital resource content does not contain anything that flashes more than three times in any one-second period.	Pass
Additional Information:	No flickering. Home page and Chapters 1-12 checked. Google Chrome.

14. Science, Technology, Engineering, and Math (STEM)

A. STEM figures have appropriate markup that indicates that the image is a figure.	N/A
Additional Information:	No STEM figures found.
B. STEM graphs have appropriate markup that indicates that the image is a graph.	N/A
Additional Information:	No STEM graphs found.
C. STEM equations have appropriate markup that indicates that the image is an equation.	N/A
Additional Information:	No STEM equations found.
D. STEM tables have appropriate markup that indicates the image is a table.	N/A
Additional Information:	No STEM tables found.



E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A
Additional Information:	No STEM figures found.
F. STEM graphs have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A
Additional Information:	No STEM graphs found.
G. STEM equations have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A
Additional Information:	No STEM equations found.
H. Assistive technology used can access the content from the STEM tables.	N/A
Additional Information:	No STEM tables found.

15. Interactive Elements

A. Each interactive element (e.g. menu, hyperlink, button) and function (e.g. annotations) allows keyboard-only operation both with and without assistive technology.	N/A
Additional Information:	No interactive elements content in the book.
B. Each interactive element conveys information to assistive technology regarding the element's name, type, and status (e.g. "Play, button, selected").	N/A
Additional Information:	No interactive elements content in the book.
C. All instructions, prompts, and error messages necessary to complete forms are conveyed as text to assistive technology (or are rendered	N/A



by an application such as a browser, media player, or reader that offers this functionality).	
Additional Information:	No interactive elements content in the book.

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