



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: Stand Up, Speak
Format of Textbook: PDF

Assistive Technology (AT) Evaluation Score: Overall	5.9 (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	6.5 (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 related information found.
B. The organization providing the online materials has an accessibility statement.	Fail
Additional Information:	No related information found.
C. An Accessibility Evaluation Report is available from an external organization.	Fail
Additional Information:	No related information 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:	Able to read most text but not the cover.

3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	Able to zoom in and out but not reflow text.
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).	Fail



Additional Information:	Whole document turned black when trying to change font color and background color.
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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).	Fail
Additional Information:	Not able to reflow 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:	

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:	(pg. 1,5,7,16,56) Mostly follows logical reading order if no image or graph presents. Always read the footers first, and followed by image if the page has it then goes back to the top of the page and read from the beginning.

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).	Pass
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Additional Information:	Chapter title is not part of the heading levels, have level 2 without level 1. Sometimes heading level 2 has different font sizes.
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).	Pass
Additional Information:	10 out of 10 lists worked. (pg. 5, 11, 15, 16, 22, 25, 39, 48,49) Able to recognize and access all lists.
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:	

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).	Pass
Additional Information:	8 out of 10 tables were read correctly. (pg. 37, 38, 68, 69, 94,168,169,170,176,177,178,205,206,209-211) Pg. 68,69,178 did not read the tables correctly.

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.	Fail
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Additional Information:	0 out of 30 links worked. (pg. 5, 7, 8, 10, 11, 12, 19, 26, 27,34,50,52,55,65,86,89,95,96) Appears to be links (in bold blue color just like the external live links) but not really links.
B. Live hyperlinks take you to any website or webpages external to the book.	Fail
Additional Information:	See below. (pg. 2, 5, 13, 25, 33, 34, 65, 68, 128, 133, 144, 145,155,157,166,16).
C. Live links take you to the correct webpage that is functioning properly.	Pass
Additional Information:	8 out of 10 links are active. (pg. 2, 5, 13, 25, 33, 34, 65, 68,128,133,144,145,155,157,166,168).
D. Live links are descriptive enough for the users to know where it should take them.	Fail
Additional Information:	1 out of 10 links are descriptive. (pg. 2, 5, 13, 25, 33, 34, 65,68,128,133,144,145,155,157,166,168).

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.	Pass
Additional Information:	All links are in blue and underscored. However, some reference notations (e.g. [1]) and figure/graph notations are also in blue but there are no links. This is a little bit confusing.
B. Information is conveyed from the sub-categories for contrast.	Pass
Additional Information:	See below.
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	Pass
Additional Information:	Cover text didn't pass, black on white passed, blue on white passed, black on brown passed, white on



	green didn't pass, white on blue passed, brown on white didn't pass.
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	Pass
Additional Information:	Black on white passed, light blue/blue on white passed, black on brown passed, black on blue/green passed.
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	Pass
Additional Information:	White on purple/green didn't pass (pg.19), white on blue passed, white on purple passed (pg. 10), white on red passed.

10. Language

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.	Fail
Additional Information:	Failed the accessibility checker.
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:	

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).	Fail
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Additional Information:	No description to the images, only read the images' address links.
B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.	Fail
Additional Information:	Cannot read cover page.
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).	Fail
Additional Information:	No description to the images.

12.Multimedia

A. A synchronized text track (e.g. open or closed captions) is provided with all video content.	N/A
Additional Information:	
B. A transcript is provided with all audio content.	N/A
Additional Information:	
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:	

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.



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:	
B. STEM graphs have appropriate markup that indicates that the image is a graph.	N/A
Additional Information:	
C. STEM equations have appropriate markup that indicates that the image is an equation.	N/A
Additional Information:	
D. STEM tables have appropriate markup that indicates the image is a table.	N/A
Additional Information:	
E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A
Additional Information:	
F. STEM graphs have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A
Additional Information:	
G. STEM equations have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A
Additional Information:	
H. Assistive technology used can access the content from the STEM tables.	N/A
Additional Information:	



15. Interactive Elements

<p>A. Each interactive element (e.g. menu, hyperlink, button) and function (e.g. annotations) allows keyboard-only operation both with and without assistive technology.</p>	<p>N/A</p>
<p>Additional Information:</p>	
<p>B. Each interactive element conveys information to assistive technology regarding the element’s name, type, and status (e.g. “Play, button, selected”).</p>	<p>N/A</p>
<p>Additional Information:</p>	
<p>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).</p>	<p>N/A</p>
<p>Additional Information:</p>	

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

<p>A. The organization providing the online materials has a formal accessibility policy.</p>	<p>Fail</p>
<p>Additional Information:</p>	<p>No content found</p>
<p>B. The organization providing the online materials has an accessibility statement.</p>	<p>Fail</p>



Additional Information:	No content found
C. An Accessibility Evaluation Report is available from an external organization.	Fail
Additional Information:	No content 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:	Pg. 2-6

3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	Pg. 2-6, text is adjustable.
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).	Fail
Additional Information:	Pg. 2-6, only shows black pages.

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).	Fail
Additional Information:	Pg. 3, 4, 5, 6, 7 - no text reflows.
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 material.



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:	Pg. 37, 38, 39, 40, 41.

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).	Pass
Additional Information:	PDF is tagged
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).	Fail
Additional Information:	Titles and headings fail.
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:	No eReader application.

7. Tables

A. Data tables include markup (e.g. tags or styles) that identifies row and column headers	Fail
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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).	
Additional Information:	Accessibility tool: rows, TH/TD pass, headers and regularity fail - manual check: pg. 37, 38, 68, 69, 178 - tables are read from left to right and doesn't really make sense if you can't see the information.

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:	No within book links - did manual check.
B. Live hyperlinks take you to any website or webpages external to the book.	Fail
Additional Information:	Most links work but none have descriptive text.
C. Live links take you to the correct webpage that is functioning properly.	Pass
Additional Information:	19/20 links worked - pg. 128, 133, 145, 155 (didn't work), 157, 166, 168, 169, 170.
D. Live links are descriptive enough for the users to know where it should take them.	Fail
Additional Information:	No links have descriptive text.

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.	Pass
Additional Information:	There is color redundancy.



B. Information is conveyed from the sub-categories for contrast.	Pass
Additional Information:	Text passes but some headers fail.
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	Pass
Additional Information:	Pg. 172-202, table headers on pg 177 and 178 fail.
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	Pass
Additional Information:	Pg. 172-202, all text passes.
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 pg. 172-202.

10.Language

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.	Fail
Additional Information:	No language markup.
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 foreign languages.

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).	Fail
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Additional Information:	Manual check pgs 85, 478, 507, 552, 85, none have accurate descriptions.
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
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).	Fail
Additional Information:	Manual check pgs 477, 490, 608, none have accurate descriptions.

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 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.
B. STEM graphs have appropriate markup that indicates that the image is a graph.	N/A
Additional Information:	No STEM content.
C. STEM equations have appropriate markup that indicates that the image is an equation.	N/A
Additional Information:	No STEM content.
D. STEM tables have appropriate markup that indicates the image is a table.	N/A
Additional Information:	
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.
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.
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.
H. Assistive technology used can access the content from the STEM tables.	N/A
Additional Information:	



15. Interactive Elements

<p>A. Each interactive element (e.g. menu, hyperlink, button) and function (e.g. annotations) allows keyboard-only operation both with and without assistive technology.</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>No interactive elements.</p>
<p>B. Each interactive element conveys information to assistive technology regarding the element’s name, type, and status (e.g. “Play, button, selected”).</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>No interactive elements.</p>
<p>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).</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>No interactive elements.</p>

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