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: **Still Casting Shadows**
Format of Textbook: **PDF**

Assistive Technology (AT) Evaluation Score: Overall	7.9 (Maximum score = 10)
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. • 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	5.4 (Maximum score =10)
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.	

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:	**Did not find any information about textbook's formal accessibility policy.**
B. The organization providing the online materials has an accessibility statement.	**Fail**
Additional Information:	**Did not find any information about textbook's accessibility statement.**
C. An Accessibility Evaluation Report is available from an external organization.	**Fail**
Additional Information:	**Did not find any information about textbook'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.	**Pass**
Additional Information:	**5/5 pages had proper text to speech capabilities (Sections 1914, 1933, 1956, 1992, 2001). No content was skipped and everything was read in a logical order.**

3. Text Adjustment

A. Text is compatible with assistive technology.	**Pass**
Additional Information:	**5/5 pages were able to properly adjust font size (Sections 1914, 1933, 1956, 1992, 2001). The reader**

	was able to properly zoom in and out of the textbook. However, the reader had to horizontally scroll in order to read all of the content on the screen.
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:	**5/5 pages were able to properly adjust font and background colors (Sections 1914, 1933, 1956, 1992, 2001).**

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:	**5/5 pages had proper reflow of text (Sections 1914, 1933, 1956, 1992, 2001), but it is because the text did not readjust when zoomed in or out. The layout of the text remained the same.**
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 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:	**5/5 pages had proper reading order (Sections 1914, 1933, 1956, 1992, 2001). Everything was read in a**

	logical order and no content was skipped. The reader was easily able to follow along with the NVDA reader.

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).	**Fail**
Additional Information:	**0/28 pages had proper navigation of text (Sections 1914, 1920, 1933, 1942, 1947, 1956, 1961, 1971, 1981, 1992, 1995, 2001). Headers and lists were not found.**
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:	**0/10 lists were properly navigable using the NVDA hotkeys (Pg. 15, 43, 73, 83, 87, 90, 94, 103, 135, 139). When the NVDA table hotkey was used to find the lists, the NVDA reader would state "No next list." However, the reader would be able to find the items of the lists when the Item hotkey was pressed.**
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 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:	**Only one table was found. 1/1 table had proper table markup (Pg. 77). The table was read cell by cell from left to right. It was not capable of being read cell by cell in all directions using the directional keys.**

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 hyperlinks found.**
B. Live hyperlinks take you to any website or webpages external to the book.	**Fail**
Additional Information:	**Only 6 hyperlinks were found. 5/6 hyperlinks had proper functioning and connected the reader to the proper places online (Pg. 4, 14(2), 299, 500). The remaining one hyperlink was not functional (Pg. 500). The URL was not found online. 0/6 hyperlinks had proper description of the links (Pg. 4, 14(2), 299, 500(2)). Hyperlinks were labeled as URLs.**
C. Live links take you to the correct webpage that is functioning properly.	**Pass**
Additional Information:	**Only 6 hyperlinks were found. 5/6 hyperlinks had proper functioning and connected the reader to the proper places online (Pg. 4, 14(2), 299, 500). The remaining one hyperlink was not functional (Pg. 500). The URL was not found online.**

D. Live links are descriptive enough for the users to know where it should take them.	**Fail**
Additional Information:	**Only 6 live hyperlinks were found. 0/6 hyperlinks had proper description of the links (Pg. 4, 14(2), 299, 500(2)). Hyperlinks were labeled as URLs.**

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:	**28/28 pages had consistent color redundancy (Sections 1914, 1920, 1933, 1942, 1947, 1956, 1961, 1971, 1981, 1992, 1995, 2001). Headers were consistently bold and black against a white background. Text was consistently black against a white background.**
B. Information is conveyed from the sub-categories for contrast.	**Pass**
Additional Information:	**28/28 pages had headers that were black against a white background (Sections 1914, 1920, 1933, 1942, 1947, 1956, 1961, 1971, 1981, 1992, 1995, 2001). 28/28 pages had text that was black against a white background (Sections 1914, 1920, 1933, 1942, 1947, 1956, 1961, 1971, 1981, 1992, 1995, 2001). No simple images found.**
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	**Pass**
Additional Information:	**28/28 pages had headers that were black against a white background (Sections 1914, 1920, 1933, 1942, 1947, 1956, 1961, 1971, 1981, 1992, 1995, 2001).**
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Pass**

Additional Information:	**28/28 pages had text that was black against a white background (Sections 1914, 1920, 1933, 1942, 1947, 1956, 1961, 1971, 1981, 1992, 1995, 2001).**
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

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.	**N/A**
Additional Information:	**Do not have Adobe Pro/Complete version.**
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:	**Do not have Adobe Pro/Complete version.**

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**
Additional Information:	**Only 43 images were found. 0/43 images were properly described by the NVDA reader when read aloud (Pg. 24-90, 114-185, 221-265, 435-477, 504-511). None of the images were properly described, they were all skipped and had no description to help the reader understand what the contents were. The only thing that was read aloud to describe the images were the captions, but the captions did not**

	provide enough information for the reader to visualize what was in the images.
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).	**Fail**
Additional Information:	**Only 43 images were found. 0/43 images were properly described by the NVDA reader when read aloud (Pg. 24-90, 114-185, 221-265, 435-477, 504-511). None of the images were properly described, they were all skipped and had no description to help the reader understand what the contents were. The only thing that was read aloud to describe the images were the captions, but the captions did not provide enough information for the reader to visualize what was in 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:	**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 technology. This includes support for all criteria listed in Section 15 below.	**N/A**
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.**
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:	**No STEM content.**
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:	**No STEM content.**

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:	**No Content Found.**
B. The organization providing the online materials has an accessibility statement.	**Fail**
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:	**Pgs 31-35 were checked. The text is available to assisstive technology that allows user to enable text-to-speech functionality.**

3. Text Adjustment

A. Text is compatible with assistive technology.	**Fail**
Additional Information:	**Pgs 1-5 were checked. When the window page chaged in size, and a horizontal bar appeared. The font size of all pages checked could be adjusted however a horizontal scrolling bar appeared.**
B. The resource allows the user to adjust the font size and font/background color (or is	**Pass**

rendered by an application such as a browser, media player, or reader) that offers this functionality.	
Additional Information:	**Pgs 1-5 were checked. When changing the font/background color to green text on black, the background color changed to black, and the font color did change to green.**

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:	**Pgs 1-5 were checked. When reflowing the text, the text to speech function said "warning empty page." This was consistent on all pages checked. Also when I reflowed the text pages were cut of on the window. In addition a horizontal bar appeared when I changed the size of the window page.**
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	**N/A**
Additional Information:	**Need additional information. We do not have printed material to compare it too.**

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:	**Pgs 31-35 were checked. The reading order was logical on all five pages.**

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).	**Fail**
Additional Information:	**The tagged PDF, Title, Headings bookmarks all failed using the accessibility checker.**
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:	**There were no list structural markups. The tagged PDF, Title and Headings, Bookmarks all failed using the accessibility checker.**
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 additional eReader used.**

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).	**Fail**

Additional Information:	**There were no tables found throughout the book. However, using the accessibility checker, the rows TH and TD, headers and regularity all failed.**

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 hyperlinks found.**
B. Live hyperlinks take you to any website or webpages external to the book.	**Fail**
Additional Information:	**4/9 live links worked. Pgs 4, 14(2 links), 338, 387, 499, 500 (2 links) were checked. Only 9 live links were found throughout the book. All of the links were in URL form, therfore not descriptive enough on where the link would take you.**
C. Live links take you to the correct webpage that is functioning properly.	**Fail**
Additional Information:	**4/9 live links worked. Pgs 4, 14(2 links), 338, 387, 499, 500 (2 links) were checked. The links on pages 387, 499, and 502 all said that the webpage could not be found. The link on page 500 took me to a web page that was not relevant to the content in the book. The web page was in another language and what I could read was not related to the book.**
D. Live links are descriptive enough for the users to know where it should take them.	**Fail**
Additional Information:	**0/9 live links had a description. Pgs 4, 14(2 links), 338, 387, 499, 500 (2 links) were checked. All links were in html (URL) form and did not have a description on where the link would take you.**

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:	**Pgs 31-60 were checked. Information not conveyed by color alone. Size of font, style of font (italics vs. print), and type of font (Bold versus Non-Bold font) were used. The chapter titles larger is size compared to the rest of the text.**
B. Information is conveyed from the sub-categories for contrast.	**Pass**
Additional Information:	**Pgs 31-60 were checked. Most pages had the contrast ratio of 4.51:1 and above (16.57:1). The chapter titles larger in size and were bold compared to the rest of the text. The chapter titles passed with 21.0:1. There was cursive text throughout the pages checked. The italics type of font passed for small text with a ratio of 17.44:1.**
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	**Pass**
Additional Information:	**Pgs 31-60 were checked. Large chapter headings passed with a ratio of 21.0:1. Small headers towards the top of the page passed with a ratio of 17.44:1.**
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**Pgs 31-60 were checked. Most of the text was above the ratio 4.51:1 (16.57:1). Large text, which in this case were chapter titles, passed with a 21.0:1. Italics small text passed with a ratio of 17.44:1.**
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**Pgs 24-53 were checked. Simple images passed with a ratio of 4.51:1 and above (10.86:1 page 24). All images throughout the book were grayscale. All**

	images passed when using the colour contrast analyser tool.

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:	**Using the accessibility checker the primary language failed.**
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.	**Fail**
Additional Information:	**Using the accessibility checker the primary language failed.**

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**
Additional Information:	**10/10 non decorative images had descriptions that did convey meaning (descriptions were sufficient to convey meaning). Pgs 24, 47, 53, 86, 114, 143, 184, 222, 223, and 225 had images and were checked. All images did contain descriptions. Using the accessibility checker, figures alternate text failed.**
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 were 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 were 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 content found.**
B. A transcript is provided with all audio content.	**N/A**
Additional Information:	**No content 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 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:	**Pgs 1-10 were checked. No flickering content was observed. Using the accessibility checker, screen flicker passed.**

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 figures were found throughout the book.**

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

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 Element Present.**
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 Element Present.**
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 Element Present.**

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