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: **History in the Making**
Format of Textbook: **PDF**

Assistive Technology (AT) Evaluation Score: Overall	5.8 (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	7.0 (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 University Press of North Georgia's Formal Accessibility Policy.**
B. The organization providing the online materials has an accessibility statement.	**Fail**
Additional Information:	**Did not find any information about University Press of North Georgia's Accessibility Statement.**
C. An Accessibility Evaluation Report is available from an external organization.	**Fail**
Additional Information:	**Did not find any information about University Press of North Georgia'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:	**0/5 pages were read properly (Pg. 16, 170, 262, 470, 509). On pages 16 through 17, the NVDA assistive technology was unable to read the page stating "Alert: Empty page." On page 170, images are not described in more detail other than what is written in the caption, however there is not enough information provided in the caption to describe the figure. On the same page and on page 509, years are also read out as whole numbers rather than a year. For example, "1691" is read "one thousand, six hundred ninety one." On page 262, the figure is read**

	at the very end of the page after an incomplete sentence. For a person reading the textbook, they might not be able to understand what is going on and if it skips from one part of the page to the figure without stating so before it happens, then they could become lost. The figure is also not described in more detail other than what is provided in the caption. On page 509, the same situation occurs. However, on this page rather than going from the end of the page to the figure, it goes from the end of the first paragraph in the middle of the page to the figure. This order is not logical and could easily confuse the reader. On pages 470 and 509, the figures are described in more detail other than what the caption provided.

3. Text Adjustment

A. Text is compatible with assistive technology.	**Fail**
Additional Information:	**0/5 pages were able to zoom in without horizontal scrolling (Pg. 16, 170, 262, 470, 509). These pages were able to zoom in and out, however past 100%, a reader had to horizontally scroll in order to read the content on the page.**
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:	**4/5 pages were able to adjust font and colors (Pg. 16, 170, 262, 470, 509). Four of the pages were able to change their background to black and change the font color to green. However page 16 remained all black.**

4. Reading Layout

A. Text of the digital resource is compatible with assistive technology that allows the user to	**Pass**

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).	
Additional Information:	**5/5 pages had good reflow of the 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.	**Fail**
Additional Information:	**0/5 pages were read properly (Pg. 16, 170, 262, 470, 509). On pages 16 through 17, the NVDA assistive technology was unable to read the page stating "Alert: Empty page." On page 170, images are not described in more detail other than what is written in the caption, however there is not enough information provided in the caption to describe the figure. On the same page and on page 509, years are also read out as whole numbers rather than a year. For example, "1691" is read "one thousand, six hundred ninety one." On page 262, the figure is read at the very end of the page after an incomplete sentence. For a person reading the textbook, they might not be able to understand what is going on and if it skips from one part of the page to the figure without stating so before it happens, then they could become lost. The figure is also not described in more detail other than what is provided in the caption. On page 509, the same situation occurs. However, on this page rather than going from the end of the page to the figure, it goes from the end of the first paragraph in the middle of the page to the figure. This order is not logical and could easily confuse the**

	reader. On pages 470 and 509, the figures are described in more detail other than what the caption provided.

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:	None of the headings were navigable to using the NVDA hotkeys. When the NVDA assistive technology was reading through the textbook, it would state that there were no next headings even though there were other headings on the same page.
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:	10/10 lists were navigable using NVDA hotkeys (Pg. 14, 37, 42, 70, 80, 112, 113, 123, 124, 152).
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	Pass

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:	**9/10 tables were navigable using the NVDA hotkeys (Pg. 38, 71, 72, 114, 197, 198, 250-252, 293-294), 335). However, the table on page 169 was not found and was not read as a table.**

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.	**Pass**
Additional Information:	**25/30 hyperlinks within the book worked and were able to direct the reader to a specific section in the book (Pg. 10-12, 13, 41, 78, 121, 122, 207, 259, 300, 341, 498(3), 56, 60, 231(3), 315(4), 56 483(3)). 5 of the 30 hyperlinks had broken links that did not direct the reader to any place within the book (Pg. 579(3), 565(2)).**
B. Live hyperlinks take you to any website or webpages external to the book.	**Fail**
Additional Information:	**14/20 hyperlinks functioned correctly (Pg. 1(2), 4, 9, 24, 49, 57, 115(5), 199(3)). The remaining 6 hyperlinks were not found on the internet, were an error, or were not found (Pg. 9, 22, 115, 199(3)). 4/20 hyperlinks had proper description to describe the links and where they were connected to on the internet (Pg. 4, 24, 49, 57). The remaining 16 hyperlinks were just listed as URLs (Pg. 1(2), 9, 22, 115(6), 199(7)).**
C. Live links take you to the correct webpage that is functioning properly.	**Pass**
Additional Information:	**14/20 hyperlinks functioned correctly (Pg. 1(2), 4, 9, 24, 49, 57, 115(5), 199(3)). The remaining 6**

	hyperlinks were not found on the internet, were an error, or were not found (Pg. 9, 22, 115, 199(3)).
D. Live links are descriptive enough for the users to know where it should take them.	**Fail**
Additional Information:	**4/20 hyperlinks had proper description to describe the links and where they were connected to on the internet (Pg. 4, 24, 49, 57). The remaining 16 hyperlinks were just listed as URLs (Pg. 1(2), 9, 22, 115(6), 199(7)).**

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:	**Headings and text were consistently the same color throughout the textbook. Headings were navy blue while the text was black. Links were consistently black, and you could not distinguish whether they were links throughout the whole textbook unless you hovered over the words of the link or pressed the TAB key.**
B. Information is conveyed from the sub-categories for contrast.	**Pass**
Additional Information:	**Headers passed the color contrast evaluation because they were consistently in navy blue against a white background. Text passed the color contrast evaluation because they were consistently in black against a white background.**
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	**Pass**
Additional Information:	**Headers passed the color contrast evaluation because they were consistently in navy blue against a white background.**

D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**Text passed the color contrast evaluation because they were consistently in black against a white background.**
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	**N/A**
Additional Information:	**Unable to evaluate the contrast of simple images because they contained more than 2 colors.**

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:	
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**
Additional Information:	**0/20 of the non-decorative images were read or described in a logica manner that would be easy for readers to understand. 2 pages with one figure on each page were empty pages that could not be read aloud (Pg. 16,17). The rest of the pages had images**

	that were not described other than what was provided in the caption, which was still insufficient enough to describe the figure. Other figures were not found or described (Pg. 1-25, 160-190, 220-276, 303-362, 411-517). It was inconsistent throughout the whole textbook.
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:	
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:	5/20 of the complex figures were read or described in a logical manner in which the figure was described with more than just the captions provided (Pg. 234, 470, 509, 546, 563). The remaining 15 of te complex figures were only described by the captions provided, which were still not sufficient enough to describe what was in the figures. It was also diffisult to follow where the NVDA reader because from the text, it would go directly into the figures without warning that it would be a graphic.

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	N/A

technology. This includes support for all criteria listed in Section 15 below.	
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 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:	
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

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:	
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:	
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:	

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:	**Pg 1, pgs 8-11 were checked. Pg 1 failed, reader said there's no content on page 1. Pgs 8-11 passed, all text were read correctly.**

3. Text Adjustment

A. Text is compatible with assistive technology.	**Pass**
Additional Information:	**Pgs 5-10 were checked. When the window page chaged in size, no horizontal bar appeared. The font size of all pages checked could be adjusted.**
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,	**Fail**

media player, or reader) that offers this functionality).	
Additional Information:	**Pgs 66-71 checked. Most pages passed with both background and font changed in color. But page 67 failed, the entire page was black (backgound color) and users cannot see the text. This is reoccuring for every chapter, example for pages failed are as follows: p5-9, 14, 16, 19, 28, 34, 36, 37, 42, 47, 51, 52, 58, 64, 66, 68-70, 79, 88, 97 etc.**

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. All text does not reflow.**
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 8-12 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	**Fail**

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).	
Additional Information:	**Passes bookmarks but tagged PDF, Title, and Headings all failed using the accessbiility 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).	**Pass**
Additional Information:	**All lists passed by Acc 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:	**0/5 tables passed, p38, 71, 72, 114, 198 checked. All 5 table was read but users will not be able to know where they are on the table. Acc checker indicated it passed row and col but when check manually, it does not read rows and col.**

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.	**Pass**
Additional Information:	**30/30 links passed. Table of content in the beginning of each chapter all functioned correctly.**
B. Live hyperlinks take you to any website or webpages external to the book.	**Pass**
Additional Information:	**2/2 live links worked and have description. P4, p551 checked. Only 2 live links found.**
C. Live links take you to the correct webpage that is functioning properly.	**Pass**
Additional Information:	**2/2 live links worked . P4, p551 checked. Only 2 live links found.**
D. Live links are descriptive enough for the users to know where it should take them.	**Pass**
Additional Information:	**2/2 live links have good description. P4, p551 checked. Only 2 live links found.**

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:	**Live links are showd as blue but no underline or conveyed in any other way.**
B. Information is conveyed from the sub-categories for contrast.	**Pass**
Additional Information:	**Average**
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	**Pass**

Additional Information:	**All headers are dark blue and passed AA standard.**
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**All text are black on white and passed AA standard.**
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.**

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.	**Pass**
Additional Information:	**Using the accessiblity checker the primary language passed.**
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:	**Acc checker cannot evaluate secondary language. Also, no second language was found in the book.**

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).	**Pass**
Additional Information:	**7/7 images passed. p60-133 checked, p60, 93,94,96,101, 105, 131 all passed. All images have good description. And alternative text was provided.**

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 image 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 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.	**N/A**

annotations) allows keyboard-only operation both with and without assistive technology.	
Additional Information:	**No Interactive Elements 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 Elements 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 Elements Present.**

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