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: **Music Appreciation (OpenStax)**
Format of Textbook: **ePUB**

Assistive Technology (AT) Evaluation Score: Overall	6.0 (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	7.9 (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:	**Could not find this information.**
B. The organization providing the online materials has an accessibility statement.	**Fail**
Additional Information:	**Could not find this information.**
C. An Accessibility Evaluation Report is available from an external organization.	**Fail**
Additional Information:	**Could not find this information.**

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:	**Kurzweil read all the text on pages 6-17.**

3. Text Adjustment

A. Text is compatible with assistive technology.	**Pass**
Additional Information:	**Checked Pages 6-11 and font size was adjustable on all pages.**
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:	**Checked Pages 6-11 and the background color changed but the text color always remained black and link color remained blue.**

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:	**Checked Pages 6-11 and text reflowed on all pages.**
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	**Fail**
Additional Information:	**Pages 6-11 on Kurzweil were actually pages 7-13 on the PDF, there were no page numbers on the Kurzweil version but the pdf had page numbers in either the upper left or right hand corners.**

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:	**Checked pages 12, 18, 23, 34, 35 and the reading order logically corresponded to the page layout.**

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	**N/A**

such as a browser, media player, or reader that offers this functionality).	
Additional Information:	**Kurzweil cannot check for this.**
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:	**Kurzweil cannot check for this.**
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:	**Kurzweil cannot check for this.**

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:	**Kurzweil cannot check for this.**

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:	**20/30 in book links worked. Checked the in book links on pages 3-5 (the table of contents) and none of**

	the links function. Links on pages 6-18, 49-55, 107-109 function, however, some in book links open the web browser.
B. Live hyperlinks take you to any website or webpages external to the book.	**Fail**
Additional Information:	**Checked the live links on pages 2, 6, 7, 8, 11, 12, 21, 50, 51, 64, 99, 110-114.**
C. Live links take you to the correct webpage that is functioning properly.	**Pass**
Additional Information:	**16/20 live links functioned.**
D. Live links are descriptive enough for the users to know where it should take them.	**Fail**
Additional Information:	**8/20 live links had an acceptable description. The rest used the web URL.**

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:	**When color was used to convey that something was a link, it was also underlined showing color redundancy. Checked pages 6-11.**
B. Information is conveyed from the sub-categories for contrast.	**Pass**
Additional Information:	**Checked pages 6-17.**
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	**Pass**
Additional Information:	**All headers passed the color contrast requirements.**
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**All text passed the color contrast requirements.**

E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**All simple images passed the color contrast requirements.**

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:	**Kurzweil cannot check for this.**
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:	**Kurzweil cannot check for this.**

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:	**Checked pages 18-29 and Kurzweil skips over the non-decorative images (no explanation) and figure captions are not explanatory enough.**
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	**Fail**

an application such as a browser, media player, or reader) that offers this functionality).	
Additional Information:	**Checked pages 18-29 and Kurzweil skips over the complex images (no explanation) and figure captions are not explanatory enough.**

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 found.**

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

A. STEM figures have appropriate markup that indicates that the image is a figure.	**Pass**
Additional Information:	**10/10 figures were labeled. Checked figures on pages 12, 18, 23, 25, 27, 34, 35, 41, 51, and 54.**
B. STEM graphs have appropriate markup that indicates that the image is a graph.	**N/A**

Additional Information:	**No graphs found.**
C. STEM equations have appropriate markup that indicates that the image is an equation.	**N/A**
Additional Information:	**No equations found.**
D. STEM tables have appropriate markup that indicates the image is a table.	**N/A**
Additional Information:	**No tables found.**
E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	**Fail**
Additional Information:	**0/10 figures had acceptable descriptions. Checked figures on pages 12, 18, 23, 25, 27, 34, 35, 41, 51, and 54.**
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 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 equations found.**
H. Assistive technology used can access the content from the STEM tables.	**N/A**
Additional Information:	**No 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 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.	**Fail**
Additional Information:	**Pgs 8-28: The narrator said that the text was not recognized. This happened on all 20 pages.**

3. Text Adjustment

A. Text is compatible with assistive technology.	**Pass**
Additional Information:	**Pgs 8-18: Text allowed to adjust the size of the font on all 10 pages.**
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).	**N/A**
Additional Information:	**Need Assistive Technology.**

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).	**N/A**
Additional Information:	**Need Assistive Technology.**
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 or PDF available to compare.**

5. Reading Order

A. The reading order for digital resource content logically corresponds to the visual layout of	**N/A**

the page when rendered by assistive technology.	
Additional Information:	**Need Assistive Technology.**

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:	**Need Assistive Technology.**
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:	**Need Assistive Technology.**
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:	**Need Assistive Technology.**

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:	**Need Assistive Technology.**

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**
Additional Information:	**20/30 total links--> (Beginning) Pg 3 was checked= (0/10) 0 hyperlinks did not work --> (Middle) pg's 95-96 were checked= (10/10) hyperlinks worked--> (End) Pg 195 was checked= (10/10) all hyperlinks worked.**
B. Live hyperlinks take you to any website or webpages external to the book.	**Pass**
Additional Information:	**20/20 links worked. Pg 195 was checked.**
C. Live links take you to the correct webpage that is functioning properly.	**Pass**
Additional Information:	**20/20 links functioned correctly. Pg 195 was checked.**
D. Live links are descriptive enough for the users to know where it should take them.	**Fail**
Additional Information:	**0/20 links did not convey a message of where the link would take the reader. Pg 195 was checked.**

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 8-18 were checked: Information not conveyed by color alone.**
B. Information is conveyed from the sub-categories for contrast.	**Fail**

Additional Information:	**Pgs 8-36 were checked: Headings, text, and links were consisitently the same colors throughout the whole textbook. Text was in black. Headings were either blue or orange consistently and links were underlined and in light blue. The black text against the white background passed with 4.51:1. The Headings in orange did not pass with 3.51:1 ratio. The blue headings passed with 5.92:1.**
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	**Fail**
Additional Information:	**Pg 8 was checked: This heading is found throughout the chapters. The ratio is 3.51:1, therefore it fails.**
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Fails**
Additional Information:	**Pg 8 was checked: most of the text is above the ratio 4.51:1 (18.1:1), however the orange text fails at 3.51:1.**
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**Pg 36 was checked: The Contrast is above 4.51:1 (21.0:1) so it passes.**

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:	**Need Assistive Technology.**
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:	**Need Assistive Technology.**

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:	**Pgs 19-39 were checked. Did not find any error using the pagina epub checker: Pg 19,27,35,39 these images have alternative text but the reader could not read the text.**
B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.	**Fail**
Additional Information:	**Pgs 19-39 were checked: Pg 30 was a decorative image with no null alternative text or markup present.**
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:	**Pgs 19-39 were checked: Pg 19,27,35,36,40: Almost all tables had descriptive text however it was not compatible with the reader (narrator). In addition, page 40 had an image that was complex but did not have descriptive text to explain the complex image.**

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 8-18 were checked: 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	N/A

(presentation) and meaning (semantics) of the STEM content.	
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.**
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.**
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.**

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