



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: Boundless Art History
Format of Textbook: HTML

| | |
|--|---------------------------------|
| Assistive Technology (AT) Evaluation Score: Overall | 8.0 (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 | 7.1 (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: | Did not find any related information. |
| B. The organization providing the online materials has an accessibility statement. | Fail |
| Additional Information: | Did not find any related information. |
| C. An Accessibility Evaluation Report is available from an external organization. | Fail |
| Additional Information: | Did not find any related 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: | Chapter 1. Able to read all text. |

3. Text Adjustment

| | |
|--|---|
| A. Text is compatible with assistive technology. | Pass |
| Additional Information: | Chapter 1. Able to zoom in and out the 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). | Pass |
| Additional Information: | Chapter 1. Able to change color. |



4. Reading Layout

| | |
|---|---|
| <p>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).</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>Chapter 1 section 3-5. Able to reflow text.</p> |
| <p>B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.</p> | <p>N/A</p> |
| <p>Additional Information:</p> | |

5. Reading Order

| | |
|--|--|
| <p>A. The reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology.</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>Chapter 1. Followed the logical order.</p> |

6. Structural Markup/Navigation

| | |
|---|--|
| <p>A. The text of the digital resource includes markup (e.g. tags or styles) that allows for navigation by key structural elements (chapters, headings, pages) using assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).</p> | <p>Fail</p> |
| <p>Additional Information:</p> | <p>Chapter 1. No heading levels were found.</p> |
| <p>B. The text of the digital resource includes markup for bullets and numbered lists that is compatible with assistive technology (or is rendered by an application such as a browser,</p> | <p>Pass</p> |



| | |
|---|--|
| media player, or reader that offers this functionality). | |
| Additional Information: | 7 out of 10 lists worked. Unable to read: table of content, learning objectives, key points (worked for chapter 2 but not chapter 1). |
| 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). | N/A |
| Additional Information: | I didn't find any tables on those pages I evaluated. |

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: | |
| B. Live hyperlinks take you to any website or webpages external to the book. | Pass |
| Additional Information: | (Chapter 1 & 3) 50 out of 50 links worked. Most links are descriptive, only some pages when it says "source" or "cite this source" at the bottom, it shows the whole address instead of the description. |



| | |
|---|---|
| C. Live links take you to the correct webpage that is functioning properly. | Pass |
| Additional Information: | (Chapter 1 & 3) 50 out of 50 links worked. |
| D. Live links are descriptive enough for the users to know where it should take them. | Pass |
| Additional Information: | (Chapter 1 & 3) 50 out of 50 links worked. Most links are descriptive, only some pages when it says "source" or "cite this source" at the bottom, it shows the whole address instead of the description. |

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: | (Chapter 5) Links are in blue color/underlined. |
| B. Information is conveyed from the sub-categories for contrast. | Pass |
| Additional Information: | (Chapter 5) White on green didn't pass; blue on white didn't pass; black on white passed; black on gray passed. |
| C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1). | Pass |
| Additional Information: | Blue on white failed, black on white passed. |
| D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1). | Pass |
| Additional Information: | Black on white or gray passed. |
| E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1). | Pass |
| Additional Information: | |



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: | not "lang=en" but <meta content='en' name='citation_language'> |
| 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: | All content in English |

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: | (Chapter 5) Unable to recognize images using NVDA and no alt text, only read the link address. |
| B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology. | Pass |
| Additional Information: | (Chapter 5) Able to recognize icon "assign" "book" and "quiz", but not social media icons nor question mark icons. |
| 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: | (Chapter 5) Unable to recognize images using NVDA and no alt text, only read the link address. |



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

| | |
|---|------------|
| 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 | N/A |



| | |
|---|--|
| by an application such as a browser, media player, or reader that offers this functionality). | |
| 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: | Nothing found |
| B. The organization providing the online materials has an accessibility statement. | Fail |
| Additional Information: | Nothing found |
| C. An Accessibility Evaluation Report is available from an external organization. | Fail |
| Additional Information: | Nothing 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: | Ch. 1-6 |

3. Text Adjustment

| | |
|--|--|
| A. Text is compatible with assistive technology. | Pass |
| Additional Information: | Ch. 1-6, OK up to 200%; anything beyond that level gets kinda crowded. "hello there, let us know..." bar at the bottom becomes more intrusive at each zoom level. |
| 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, | Pass |



| | |
|---|--|
| media player, or reader) that offers this functionality). | |
| Additional Information: | Ch. 1-6, all text and bg colors change. |

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: | All 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. | N/A |
| 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. | N/A |
| Additional Information: | All HTML links are live |
| B. Live hyperlinks take you to any website or webpages external to the book. | Pass |
| Additional Information: | All links work and have descriptive text |



| | |
|---|--|
| C. Live links take you to the correct webpage that is functioning properly. | Pass |
| Additional Information: | Ch. 4 "Ancient Egyptian Art > Intro to Ancient Egyptian Art: Timeline > Terms: "Pyramid" and "Ancient Egypt" (links within these terms). |
| D. Live links are descriptive enough for the users to know where it should take them. | Pass |
| Additional Information: | Ch. 4 "Ancient Egyptian Art > Intro to Ancient Egyptian Art: Timeline > Terms: "Pyramid" and "Ancient Egypt" (links within these terms). |

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 an arrow ">" which shows that each subsection is clickable. Giving a 9/10 because some links outside of the book content are not underlined or do not have arrows next to them by default and the "[edit]" texts are not underlined either. "Register for FREE to stop seeing ads" is blue and not underlined. |
| B. Information is conveyed from the sub-categories for contrast. | Pass |
| Additional Information: | Tested Ch. 4 only because lots of sub sections/content. |
| C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1). | Pass |
| Additional Information: | Some light gray and light blue sub section headers fail for their text size. |
| D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1). | Pass |

| | |
|--|---|
| Additional Information: | Main text passes, but brief descriptions of sub sections do not, e.g. Ch. 6 Ancient Greece > Introduction to Ancient Greece (section 1) > Introduction and History (in blue), brief description directly underneath is light gray (fails). |
| E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1). | Fail |
| Additional Information: | Most fail, a few pass |

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 lang tag in source code |
| 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 |
| Additional Information: | Out of 20 images, 19 were ND and 18 failed (Ch. 8 The Romans > The Founding of Rome > term: palladium). |
| 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: | Out of 20 images, 1 was complex and it failed (Ch. 8 The Romans > The Founding of Rome > term: palladium). |

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 |
| B. A transcript is provided with all audio content. | N/A |
| Additional Information: | No multimedia |
| 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 |

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

| | |
|---|-----|
| 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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