



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: Accounting Principles: Managerial Accounting
Format of Textbook: PDF

Assistive Technology (AT) Evaluation Score: Overall	6.7 (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:	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 1-5 were checked. The text passes text access on pages 2-5. However, it does not read page 1, the title page when using keyboard navigation. NVDA and Adobe Acrobat Pro XI used to evaluate.

3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	Pgs 1-5 were checked. All text can be adjusted in size.
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:	Entire document checked, all font and background colors are adjustable, all passed. However, images cannot change the background color.

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:	Entire book checked, all text 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:	No 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 47-51 were checked. The reading order was logical on all five pages. NVDA and Adobe acrobat Pro XI used to evaluate.

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	Fail
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such as a browser, media player, or reader that offers this functionality).	
Additional Information:	No method provided that allows user to bypass sections of text. The tagged PDF, Title, Bookmarks, and Headings 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:	Lists are embedded as images.
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).	N/A
Additional Information:	No table found in the entire book.

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	Pass
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embedded links take you to the correct location in the book.	
Additional Information:	30/30 with in book links passed functionally, however, when navigating with keyboard only navigation, the order was backwards. When tabbing through the links, it jumps from the last link then move back up to previous link. P 4-6 table of content was evaluated.
B. Live hyperlinks take you to any website or webpages external to the book.	N/A
Additional Information:	No live links in the book.
C. Live links take you to the correct webpage that is functioning properly.	N/A
Additional Information:	No live links in the book.
D. Live links are descriptive enough for the users to know where it should take them.	N/A
Additional Information:	No live links in the book.

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:	Red headers are also bolded and larger in font.
B. Information is conveyed from the sub-categories for contrast.	Pass
Additional Information:	Pgs 128-144 were checked. All color contrast passed AA standard. Only color found was dark red and blue.
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	Pass



Additional Information:	Pgs 128-144 were checked. All color contrast passed AA standard. Only color found was dark red and blue.
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	Pass
Additional Information:	Pgs 128-144 were checked. All text are black on white, color contrast passed AA standard.
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	Fail
Additional Information:	Pgs 133-159 were checked. Only one simple image found on p159 and it failed the AA standard contrast ratio.

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 accessibility 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).	Fail
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Additional Information:	NVDA does not recognize any image as graphic, cannot navigate with keyboard only navigation, additionally, the images do not have good descriptions. NVDA and Adobe Acrobat Pro XI used to evaluate.
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 image.
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:	NVDA does not recognize images as graphic, cannot navigate to images with keyboard only navigation. No images have good description in the entire book. NVDA and Adobe Acrobat Pro XI used to evaluate.

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 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.



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 1-5 were checked. The text passes text access on pages checked.

3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	Pgs 1-5 were checked. All text can be adjusted in size.
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:	Entire document checked, all font and background colors are adjustable, all passed. However, images cannot change the background color.
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4. Reading Layout

A. Text of the digital resource is compatible with assistive technology that allows the user to reflow the text by specifying the margins and line spacing (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	Pass
Additional Information:	Entire book checked, all text 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:	No 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 47-51 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:	No method provided that allows user to bypass sections of text. The tagged PDF, Title, Bookmarks,



	and Headings 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:	Lists are embedded as images.
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).	N/A
Additional Information:	No table found in the entire book.

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 with in book links passed. P 4-6 table of content was evaluated.



B. Live hyperlinks take you to any website or webpages external to the book.	N/A
Additional Information:	No live links in the book.
C. Live links take you to the correct webpage that is functioning properly.	N/A
Additional Information:	No live links in the book.
D. Live links are descriptive enough for the users to know where it should take them.	N/A
Additional Information:	No live links in the book.

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:	Red headers are also bolded and larger in font.
B. Information is conveyed from the sub-categories for contrast.	Pass
Additional Information:	Pgs 128-144 were checked. All color contrast passed AA standard. Only color found was dark red and blue.
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	Pass
Additional Information:	Pgs 128-144 were checked. All color contrast passed AA standard. Only color found was dark red and blue.
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	Pass
Additional Information:	Pgs 128-144 were checked. All text are black on white, color contrast passed AA standard.
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	Fail



Additional Information:	Pgs 133-159 were checked. Only one simple image found on p159 and it failed the AA standard contrast ratio.
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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 accessibility 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).	Fail
Additional Information:	No images have good description in the entire book.
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 image
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	Fail



player, or reader) that offers this functionality).	
Additional Information:	No images have good description in the entire book.

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.

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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 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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