



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: A Business Perspective

Format of Textbook: PDF

Assistive Technology (AT) Evaluation Score: Overall	5.8 (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	8.6 (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:	URL not found. Adobe Acrobat Pro X.
B. The organization providing the online materials has an accessibility statement.	Fail
Additional Information:	URL not found. Adobe Acrobat Pro X.
C. An Accessibility Evaluation Report is available from an external organization.	Fail
Additional Information:	URL not found. Adobe Acrobat Pro X.

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:	10/10 pages. Adobe Acrobat Pro X. Pages 30-35 and 250-254 checked.

3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	101/101 pages. Adobe Acrobat Pro X. Pages 1-50 and 200-250 checked.
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:	>99% failure. Adobe Acrobat Pro X. Entire PDF checked. All pages change background color fine, but only a handful of the 1004 pages in the PDF change text 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:	101/101 pages. Adobe Acrobat Pro X. Pages 1-50 and 200-250 checked. Some tables lose some formatting during reflow, but since text itself is what is being rated, it did not effect the score. Some pseudo-formatted tables and equations (see pages 35, 39, and 45), when affected by reflow, lose structure.
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	N/A
Additional Information:	Skipped.

5. Reading Order

A. The reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology.	Pass
Additional Information:	5/5 pages. Adobe Acrobat Pro X. Pages 33, 35, 250, 251, and 254 checked.



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>Adobe Acrobat Pro X. Accessibility Report says document is not tagged.</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, media player, or reader that offers this functionality).</p>	<p>Fail</p>
<p>Additional Information:</p>	<p>0/6 lists. Adobe Acrobat Pro X. Pages 11, 12, 33, and 327 checked. No indication of a separation between bullet points or the point of entrance/exit of a list.</p>
<p>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.</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>Skipped.</p>

7. Tables

<p>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).</p>	<p>Fail</p>
<p>Additional Information:</p>	<p>0/5 tables. Adobe Acrobat Pro X. Pages 34, 35, 250, and 297 checked. No designation of new columns or rows and tables are read by column instead of by</p>



	<p>row, which is not how the author intended. The information presented in the tables on page 34 are coincidentally set up in a way that was read "correctly" by Adobe Acrobat; if there had been more than one value in one row, the readings would have become confusing. Thus, I did not count those tables as part of the total score. Does not pass Adobe Acrobat Pro XI table markup check.</p>
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8. Hyperlinks

<p>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.</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>30/30 links. Adobe Acrobat Pro X. Pages 4-6 checked. No within-book hyperlinks found outside of TOC. Passes Adobe Acrobat Pro XI Navigation Link check.</p>
<p>B. Live hyperlinks take you to any website or webpages external to the book.</p>	<p>Fail</p>
<p>Additional Information:</p>	<p>Averaged score.</p>
<p>C. Live links take you to the correct webpage that is functioning properly.</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>19/21 links. Pages 64, 279, 370, 408, 447, 484, 520, 557, 591, 628, 629, 673, 726, 763 checked. Adobe Acrobat Pro X. A link on page 279 (ch 7) leads to a page on a domain that no longer exists. On page 447, the two websites that are linked (beckerconviser.com & bestsoftware.com) are outdated domain names. They still take the user to the correct websites, but the original URLs provided in the text are now redirected to newer URLs names. On page 484, the link to sba.microsoft.com no longer exists. On page 520, the link to macromedia is dated, as adobe bought them out in 2005. The link successfully redirects to adobe's website, but I doubt</p>



	the materials the author intended for the readers to examine were no longer present on the adobe site.
D. Live links are descriptive enough for the users to know where it should take them.	Fail
Additional Information:	0/21 links. Adobe Acrobat Pro XI. All links checked for functionality did not have alternate text/descriptive text.

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:	Pages 100-200, 250-350, and 600-800 checked. Adobe Acrobat Pro X. Most links are not only blue but are also underlined (ex. Page 277). Page 195 (ch 4) contains two links that are neither blue nor underlined and page 234 (ch 5) contains one link that is not colored nor underlined and one that is both. Each chapter seems to have 2-3 external hyperlinks located at the end of the chapter. Page 64 (ch 1) contains two links that are neither blue nor underlined. Both links on page 726 are also without redundancy. 1/3 links on page 763 do not have redundancy.
B. Information is conveyed from the sub-categories for contrast.	Pass
Additional Information:	Averaged score.
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	Pass
Additional Information:	Pages 1-50 and 250-350 checked. Headers are blue on white (~13.77:1). Some sections are boxed off and headed by maroon on white text (~10.4:1).
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	Pass



Additional Information:	Pages 1-50 and 250-350 checked. Text is either black on white (21.0:1) or blue on white (~14.28:1).
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	Pass
Additional Information:	6/6 images. Pages 250-350 checked. Images on pages 251, 339, 341, 342, 344, and 346 checked. Adobe Acrobat Pro X.

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:	Adobe Acrobat Pro XI. PDF passed Primary Language check.
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:	Adobe Acrobat Pro XI. No foreign passages found.

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).	N/A
Additional Information:	No non-decorative images found.
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.



<p>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).</p>	<p>Fail</p>
<p>Additional Information:</p>	<p>0/10 images. Pages 250-600 checked. Adobe Acrobat Pro X. Accessibility Report lists 63 (seems to be all of them) images as having no alternate text. Does not pass Adobe Acrobat Pro XI figures alternate text check.</p>

12. Multimedia

<p>A. A synchronized text track (e.g. open or closed captions) is provided with all video content.</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>No Multimedia found.</p>
<p>B. A transcript is provided with all audio content.</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>No Multimedia found.</p>
<p>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.</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>No Multimedia found.</p>

13. Flickering

<p>A. The digital resource content does not contain anything that flashes more than three times in any one-second period.</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>200/200 pages. Pages 200-300 and 500-600 checked. Adobe Acrobat Pro X. Passes Adobe Acrobat Pro XI flicker check.</p>



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

A. STEM figures have appropriate markup that indicates that the image is a figure.	Fail
Additional Information:	0/10 figures. Pages 74, 153, 251, 292, 293, 296, 339, 341, 601, 606 checked. Adobe Acrobat Pro X. Figures are embedded images and are skipped by Adobe Acrobat Pro X narration.
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.	Fail
Additional Information:	0/16 equations. Page 33, 297, and 605 checked. Adobe Acrobat Pro X.
D. STEM tables have appropriate markup that indicates the image is a table.	
Additional Information:	
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. Pages 74, 153, 251, 292, 293, 296, 339, 341, 601, 606 checked. Adobe Acrobat Pro X.
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.	Fail
Additional Information:	0/16 equations. Pages 33, 297, and 605 checked. Adobe Acrobat Pro X. Many operators (such as



	subtraction signs) are read as em-dashes (i.e., not at all). The variable "SE" was read as "southeast."
H. Assistive technology used can access the content from the STEM tables.	
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 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:	Not Included
B. The organization providing the online materials has an accessibility statement.	Fail
Additional Information:	Not Included
C. An Accessibility Evaluation Report is available from an external organization.	Fail
Additional Information:	Not Included

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:	Text was converted to speech without a problem.

3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	Reflows with text size change, pages: 20-25.
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:	Book allows user to change color pages: 100-110.



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>Reflows with text size change, pages: 20-25.</p>
<p>B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>Pages match, pages: 40-50.</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>Text is read in a logical order including bullets and lists, pages: 470-480.</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>Pass</p>
<p>Additional Information:</p>	<p>Acc Checker yields issues with Tagged PDF, Title, and Appropriate Nesting, pages: 1-10.</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:	Lists are read but it is unclear where one point starts and another begins, pages: 600-615.
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).	Fail
Additional Information:	Acc Checker yields failure for Headers, Regulation, TH and TD, and Rows pages: 423-430.

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:	Pages: 1-10
B. Live hyperlinks take you to any website or webpages external to the book.	Fail
Additional Information:	
C. Live links take you to the correct webpage that is functioning properly.	Pass



Additional Information:	<p>Link worked! pages: 1-50 http://creativecommons.org/licenses/by/3.0/ page 28: http://www.ifrs.com/Backgrounder_Get_Ready.html, http://ifrs.org., http://icai.org</p>
D. Live links are descriptive enough for the users to know where it should take them.	Fail
Additional Information:	<p>Links do not provide description of their destination, they are only written out in the standard "www" format, DO NOT WORK page: 28, 720-730 http://www.cbo.gov/ftpdoc.cfm?index=3521 AND Do Work-pages: 720-730 http://www.gao.gov/cghome/d08395cg.pdf AND http://www.govtrack.us/congress/billtext.xpd?bill=h110-493&show-changes=0&page-command=print AND http://www.saylor.org/books AND http://supreme.justia.com/us/221/1/case.html.</p>

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:	Headers are bolded and larger paragraph text and links are denoted with an underline.
B. Information is conveyed from the sub-categories for contrast.	Pass
Additional Information:	
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	Pass
Additional Information:	Pass every level, ratio 16.01:1 pages: 1-50.
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	Pass
Additional Information:	Ratio 21.01:1 pages: 1-50.



E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	N/A
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:	Language was declared, verified by Acc Checker.
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 other language is in the text.

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:	Acc Checker found issues, manual check did not find any images except for tables which might be images, pages 615.
B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.	Fail
Additional Information:	Acc Checker found issues, manual check did not find any images except for tables which might be images, pages 615.
C. Complex images, charts, and graphs have longer text descriptions that are compatible	Fail



with assistive technology (or are rendered by an application such as a browser, media player, or reader) that offers this functionality).	
Additional Information:	Acc Checker found issues, manual check did not find any images except for tables which might be images, pages 615.

12. Multimedia

A. A synchronized text track (e.g. open or closed captions) is provided with all video content.	N/A
Additional Information:	Did not find any examples of these in a manual search but Acc Checker passed these items.
B. A transcript is provided with all audio content.	N/A
Additional Information:	Did not find any examples of these in a manual search but Acc Checker passed these items.
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:	Did not find any examples of these in a manual search but Acc Checker passed these items.

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:	

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

A. STEM figures have appropriate markup that indicates that the image is a figure.	Pass
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Additional Information:	Manual check reveals that these items are properly marked up with notation, surrounding content provides meaning, pages: 450-500.
B. STEM graphs have appropriate markup that indicates that the image is a graph.	Pass
Additional Information:	Manual check reveals that these items are properly marked up with notation, surrounding content provides meaning, pages: 450-500.
C. STEM equations have appropriate markup that indicates that the image is an equation.	Pass
Additional Information:	Manual check reveals that these items are properly marked up with notation, surrounding content provides meaning, pages: 450-500.
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.	Pass
Additional Information:	Manual check reveals that these items are properly marked up with notation, surrounding content provides meaning, pages: 450-500.
F. STEM graphs have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	Pass
Additional Information:	Manual check reveals that these items are properly marked up with notation, surrounding content provides meaning, however graphs are not read correctly, pages: 450-500.
G. STEM equations have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	Pass



Additional Information:	Manual check reveals that these items are properly marked up with notation, surrounding content provides meaning, pages: 450-500.
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:	

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