



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: Management Accounting Concepts & Techniques
Format of Textbook: HTML

Assistive Technology (AT) Evaluation Score: Overall	5.4 (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	7.7 (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 information about IntroToCost's formal accessibility policy.
B. The organization providing the online materials has an accessibility statement.	Fail
Additional Information:	Did not find any information about IntroToCost's Accessibility Statement.
C. An Accessibility Evaluation Report is available from an external organization.	Fail
Additional Information:	Did not find any information about IntroToCost's Accessibility Evaluation Report.

2. Text Access

A. The text of the digital resource is available to assistive technology that allows the user to enable text-to-speech (TTS) functionality.	Fail
Additional Information:	0/4 chapters had proper text to speech without any content skipped (Ch. 1, 5, 11, 22). Chapter 1 had decorative symbols that were read aloud such as "*" read as "star star star," "1997" read as "nineteen hundred and ninety-seven," and "U.S." read as "U dot S." In the remaining chapters that were evaluated, graphs were also skipped and equations were not read properly with symbols such as division sign, multiplication sign, and subtraction sign were skipped.



3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	4/4 chapters were able to zoom in and out without horizontal scrolling (CH 1, 5, 11, 22).
B. The resource allows the user to adjust the font size and font/background color (or is rendered by an application such as a browser, media player, or reader) that offers this functionality).	Pass
Additional Information:	4/4 chapters were able to adjust font and colors (Ch. 1, 5, 11, 22).

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:	30/30 webpages had proper reflow of text (Ch. 1, 2, 3,(2), 4(2), 5(2), 6(2), 7(2), 8(2), 9(2), 10(2), 11(2), 12(2), 13(2), 14(2), 15(2), 16(2)).
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 PDF available to compare page numbers.

5. Reading Order

A. The reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology.	Fail
Additional Information:	0/5 pages had proper text to speech without any content skipped (Ch. 1, 5, 11, 16, 22). Chapter 1 had decorative symbols that were read aloud such as "*"



	<p>read as "star star star," "1997" read as "nineteen hundred and ninety-seven," and "U.S." read as "U dot S." In the remaining chapters that were evaluated, graphs were also skipped and equations were not read properly with symbols such as division sign, multiplication sign, and subtraction sign were skipped.</p>
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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>0/4 chapters had text that were properly navigable. The headings were not found and the lists were not 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, media player, or reader that offers this functionality).</p>	<p>Fail</p>
<p>Additional Information:</p>	<p>6 lists were found. 0/6 lists were navigable using the NVDA hotkeys (Ch. 1(2), Ch. 5(2), Ch. 11(2)). The lists were not found.</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>Not using reader application.</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>0/10 tables were marked properly as tables (Ch. 16(5), Ch. 5, Ch.11(4)). In these tables the reader was only able to navigate through the cells left to right using the up and down directional keys rather than in all directions. The cells were also read read column by column rather than cell by cell. 4 tables (Ch 11) were also read aloud as "One row with 2 columns" even though the table had multiple rows.</p>

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>N/A</p>
<p>Additional Information:</p>	
<p>B. Live hyperlinks take you to any website or webpages external to the book.</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>23/50 links work properly. 27 of the remaining links look like links but are actually not links. A majority of the links throughout the books are similar to the 27 links that did not function correctly (Ch. 1, Ch. 5, Ch. 11, Ch. 22) The links that did function correctly were at the end of each chapter and just led to either the next chapter or the end of chapter supplementary. 50/50 links were properly described. The links that were found were not just URLs.</p>
<p>C. Live links take you to the correct webpage that is functioning properly.</p>	<p>Fail</p>



Additional Information:	23/50 links work properly. 27 of the remaining links look like links but are actually not links. A majority of the links throughout the books are similar to the 27 links that did not function correctly (Ch. 1, Ch. 5, Ch. 11, Ch. 22) The links that did function correctly were at the end of each chapter and just led to either the next chapter or the end of chapter supplementary.
D. Live links are descriptive enough for the users to know where it should take them.	Pass
Additional Information:	50/50 links were properly described. The links that were found were not just URLs.

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 were consistently maroon or navy blue depending on whether they were headers or subheaders. Normal text was consistently black. Links however were inconsistent because links at the end of each chapter were in navy blue, however there were text that looked like links in the middle of the normal text that were not actually links, they were just vocabulary.
B. Information is conveyed from the sub-categories for contrast.	Pass
Additional Information:	Headers passed the color and contrast ratio evaluation because the headers were either navy blue or maroon against a white background. Text were black against a white background. Simple images that were found were in black and white.
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	Pass



Additional Information:	Headers passed the color and contrast ratio evaluation because the headers were either navy blue or maroon against a white background.
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	Pass
Additional Information:	Normal text were black against a white background.
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	Pass
Additional Information:	Simple images that were found were in black and white.

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:	The language markup of the textbook is English.
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 passage markup

11. Images

A. Non-decorative images have alternative text that is compatible with assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).	Fail
Additional Information:	0/4 chapters described the non-decorative images in detail when the textbook was read aloud (Ch. 1, Ch.5, Ch. 11, Ch. 22). In Ch. 5, the three graphs that



	were displayed were skipped when read aloud. They were not described to the reader.
B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.	Fail
Additional Information:	Only one chapter had decorative images on the page (Ch. 1). Asterisks acted as borders to separate a quote from the rest of the text, however when the book was read aloud the asterisks were read aloud as "star star star..." rather than skipped.
C. Complex images, charts, and graphs have longer text descriptions that are compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader) that offers this functionality).	N/A
Additional Information:	No complex images found.

12. Multimedia

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

13. Flickering

A. The digital resource content does not contain anything that flashes more than three times in any one-second period.	Pass
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Additional Information:	No flickering content.
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14.Science, Technology, Engineering, and Math (STEM)

A. STEM figures have appropriate markup that indicates that the image is a figure.	Fail
Additional Information:	2 figures were found in the textbook. 0/2 figures were marked up correctly (Ch. 22). The figures were labeled as tables and read aloud as tables even though they were figures.
B. STEM graphs have appropriate markup that indicates that the image is a graph.	Fail
Additional Information:	3 graphs were found (Ch. 5). 0/3 graphs were not marked correctly as graphs.
C. STEM equations have appropriate markup that indicates that the image is an equation.	Pass
Additional Information:	10/10 equations had proper markup. The equations were not blacked out (Ch. 5, Ch. 11)
D. STEM tables have appropriate markup that indicates the image is a table.	Fail
Additional Information:	0/10 tables were marked properly as tables (Ch. 16(5), Ch. 5, Ch.11(4)).
E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	Fail
Additional Information:	2 figures were found in the textbook. 0/2 figures had proper notation markup (Ch. 22). The figures that were found were described as if they were tables even though they looked like figures.
F. STEM graphs have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	Fail
Additional Information:	3 graphs were found (Ch. 5). 0/3 graphs did not have proper notation markup. While the textbook was



	read aloud, the graphs that were found were skipped.
G. STEM equations have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	Fail
Additional Information:	0/10 equations had proper notation markup. When the textbook was read aloud, symbols such as the minus (-) sign, and division sign were skipped and the multiplication sign (x) was read aloud as "x" (Ch. 5, 11)
H. Assistive technology used can access the content from the STEM tables.	Fail
Additional Information:	0/10 tables had proper notation markup (Ch. 16(5), Ch. 5, Ch. 11(4)). In these tables the reader was only able to navigate through the cells left to right using the up and down directional keys rather than in all directions. The cells were also read read column by column rather than cell be cell. 4 tables (Ch 11) were also read aloud as "One row with 2 columns" even though the table had multiple rows.

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 available.
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 available.
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:	No interactive elements available.

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:	There was no link provided for the accessibility policy.
B. The organization providing the online materials has an accessibility statement.	Fail
Additional Information:	There was no link provided for the accessibility statement.
C. An Accessibility Evaluation Report is available from an external organization.	Fail
Additional Information:	There was no link provided for accessibility evaluation report.

2. Text Access

A. The text of the digital resource is available to assistive technology that allows the user to enable text-to-speech (TTS) functionality.	Pass
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Additional Information:	Chapters 1, 7, 14, 20. The text to speech reads the chapters major heading and subheadings which is really good because the reader can follow along successfully.
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3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	2/2 chapters passed. Chapter 3, 8, 17, 21 all the content on the webpage had the capability of being minimized and maximized, the text and the figures of each page.
B. The resource allows the user to adjust the font size and font/background color (or is rendered by an application such as a browser, media player, or reader) that offers this functionality).	Pass
Additional Information:	2/2 chapters passed. Chapter 1 and 3 and 17 and 21; all pass because both chapters convert to nightmode (black background) but images were also switched but they are still visible.

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:	Chapters 2, 9, 17, 23 all are able to zoom in and out and the text wraps, making minimal horizontal scrolling.
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 PDF FORM AVAILABLE.



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:	No assistive technology used.

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:	No assistive technology used.
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:	No assistive technology used.
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 assistive technology used.

7. Tables

A. Data tables include markup (e.g. tags or styles) that identifies row and column headers	N/A
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in a manner that is compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader that offers this functionality).	
Additional Information:	No assistive technology used.

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:	Each chapter / subsection has three links at the bottom of the page, the end of chapter exercises, next chapter and return to table contents link and they all take you to the correct section.
B. Live hyperlinks take you to any website or webpages external to the book.	N/A
Additional Information:	No live links found in book.
C. Live links take you to the correct webpage that is functioning properly.	N/A
Additional Information:	No live links found in book.
D. Live links are descriptive enough for the users to know where it should take them.	N/A
Additional Information:	No live links found in 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.	Fail
Additional Information:	Chapter 1, 7, 10, 16 the headings and subheading are different colors and sizes, if someone is color blind



	they can tell there is a difference like heading vs. body text, but within the body there are blue text and they are not underlined or told in any other element.
B. Information is conveyed from the sub-categories for contrast.	Pass
Additional Information:	Chapter 2, 6, 13, 19 the section heading passed (both AA sub heading and text passed).
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	Pass
Additional Information:	Chapter 2, 6, 13, 19 the section heading passed (both AA sub heading and text passed).
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	Pass
Additional Information:	Chapter 2, 6, 13, 19 the section heading passed (both AA sub heading and text passed).
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	N/A
Additional Information:	N/A, no images found.

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:	The code says "lang="en."
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 additional Language.



11.Images

<p>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).</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>N/A, no images.</p>
<p>B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>N/A, no images.</p>
<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>N/A</p>
<p>Additional Information:</p>	<p>N/A, no images.</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>N/A there were not any multimedia in wikibook.</p>
<p>B. A transcript is provided with all audio content.</p>	<p>N/A</p>
<p>Additional Information:</p>	<p>N/A there were not any multimedia in wikibook.</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>N/A there were not any multimedia in wikibook.</p>



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:	N/A, no STEM Content found.
B. STEM graphs have appropriate markup that indicates that the image is a graph.	N/A
Additional Information:	N/A, no STEM Content found.
C. STEM equations have appropriate markup that indicates that the image is an equation.	N/A
Additional Information:	N/A, no STEM Content found.
D. STEM tables have appropriate markup that indicates the image is a table.	N/A
Additional Information:	N/A, no STEM Content found.
E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A
Additional Information:	N/A, no STEM Content found.
F. STEM graphs have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A
Additional Information:	N/A, no STEM Content 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:	N/A, no STEM Content found.
H. Assistive technology used can access the content from the STEM tables.	N/A
Additional Information:	N/A, no STEM Content 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:	N/A, 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:	N/A, 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:	N/A, no interactive elements found.

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