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: **Introduction to Financial Accounting**
Format of Textbook: **PDF**

Assistive Technology (AT) Evaluation Score: Overall	6.5 (Maximum score = 10)
Assistive Technologies (AT) Evaluations applies specialized tools and software in the accessibility evaluation process. These specialized assistive technologies, see list below, are typically not used or available by the general public into the accessibility evaluation process. • Accessibility features of desktop operating systems (e.g. high-contrast display themes, settings from the Keyboard and Mouse control panels) • Accessibility-related software included with desktop operating systems (e.g. VoiceOver, Microsoft Narrator) • Third-party accessibility software and hardware: • Screen readers (e.g. JAWS, Window Eyes) • Magnification software (e.g. ZoomText Magnifier/Reader, MAGIC Pro with Speech) • Reading software for users with learning disabilities (e.g. Read and Write Gold, Kurzweil 3000) • Refreshable Braille displays	
Non- Assistive Technology (NAT) Evaluation Score: Overall	6.1 (Maximum score =10)
Non-Assistive Technologies (NAT) Evaluations applies only native or basic tools and software such as the keyboard and Narrator in the accessibility evaluation process. These non-assistive technologies are readily available and used by the general public.	

COOL4Ed Accessibility Evaluation Methods:

The California State University Accessible Technology Initiative and MERLOT (Multimedia Educational Resources for Learning and Online Teaching) developed the rubric or "checkpoints" for the accessibility evaluation. CAST, a nationally recognized organization with expertise in accessibility and UDL, reviewed and affirmed the appropriateness and value of the accessibility evaluation rubric and contributed the references and support resources to help people learn how best to design, evaluate, and remediate the learning materials to maximize the accessibility of the learning resources for all. The "checkpoints" have been built upon the Section 508 technical standards and has been organized and tailored to the typical characteristics of digital resources used in higher education courses.

The accessibility evaluations were performed by the Center for Usability in Design and Accessibility at California State University, Long Beach; faculty and graduate students with expertise in human factors, usability, and accessibility performed the evaluations of over 150 free and open etextbooks. COOL4ed.org has published the accessibility evaluation rubric and provides a detailed description of the methodology used to evaluate the accessibility of the etextbooks in COOL4ed.

LOOKING FOR DETAILED ACCESSIBILITY REPORTS?

See Detailed Accessibility Evaluation Report using Assistive Technologies

See Detailed Accessibility Evaluation Report using Non-Assistive Technologies

DETAILED ACCESSIBILITY EVALUATION REPORT using
Assistive Technologies

Assistive Technologies (AT) Evaluations applies specialized tools and software in the accessibility evaluation process.   These specialized assistive technologies, such as Kurzweil and NVDA, are typically not used or available by the general public into the accessibility evaluation process.

1. Accessibility Documentation

A. The organization providing the online materials has a formal accessibility policy.	**Fail**
Additional Information:	**No related information found.**
B. The organization providing the online materials has an accessibility statement.	**Fail**
Additional Information:	**No related information found.**
C. An Accessibility Evaluation Report is available from an external organization.	**Fail**
Additional Information:	**No related information 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:	**Cannot read words in box (point with mouse), links (point with mouse), cover page and back cover page.**

3. Text Adjustment

A. Text is compatible with assistive technology.	**Pass**
Additional Information:	**Can zoom in and out but cannot reflow 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:	**Words on cover page do not change color. Box background color does not change, and some texts remain in original color (not black), (p.11-16).**

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).	**Fail**
Additional Information:	**Cannot reflow text.**
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	**N/A**
Additional Information:	

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:	**Cannot read cover page. Cannot read footers. Read all the boxes first regardless the display order. Some time tables are mixed with paragraphs (p.1, 11, 16, 19, 21, 46).**

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:	**Very unorganized and inconsistent heading structure, most headings are not recognized as headings and some random places will have a heading level 5 (p.1-45).**
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).	**Pass**
Additional Information:	**6 out of 10 lists worked (p.9,19,23,25,79,87,420).**
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).	**Pass**
Additional Information:	**Able to access and read all cell elements (p.27, 29, 32, 46).**

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 out of 30 links work and link to correct locations (p.26,27,28,29,30,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,76,77,103).**
B. Live hyperlinks take you to any website or webpages external to the book.	**N/A**
Additional Information:	**No live links found.**
C. Live links take you to the correct webpage that is functioning properly.	**Pass**
Additional Information:	
D. Live links are descriptive enough for the users to know where it should take them.	**Pass**
Additional Information:	**All links have clear 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:	**All links are in bright blue.**
B. Information is conveyed from the sub-categories for contrast.	**Pass**
Additional Information:	**See below.**
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	**Pass**
Additional Information:	**Black on white passed.**
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**Bright blue or black on white passed, black on blue or gray passed.**
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	**Fail**

Additional Information:	**The color neon blue outline or the blue arrows on white background did not pass (p.69-70, 74).**

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:	**Failed the accessibility 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:	

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:	**Sometimes it treats the neon blue border area or blue box area as a graphic (p.528, 670) and each word item would be a graph, but this is not consistent.**
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 cover and back cover contain image but are not recognized by NVDA.**
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	**N/A**

player, or reader) that offers this functionality).	
Additional Information:	**No complex image 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 related information found.**
B. A transcript is provided with all audio content.	**N/A**
Additional Information:	**No related information 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 related information found.**

13. Flickering

A. The digital resource content does not contain anything that flashes more than three times in any one-second period.	**Pass**
Additional Information:	**No flickering found.**

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

A. STEM figures have appropriate markup that indicates that the image is a figure.	**Pass**
Additional Information:	**Some table structures are labeled as figures while each individual cell is accessible with NVDA (p.677, 678, 681, 682, 690, 739, 740, 747).**
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.	**Fail**
Additional Information:	**None of the equations has mark up and NVDA cannot read the equation correctly (p.684, 685, 687, 748, 749, 750, 751).**
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:	**10 out of 10 figures have title and notation (p.677, 678, 681, 682, 690, 739, 740, 747).**
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.	**Fail**
Additional Information:	**None of the equations has specific notation outside the paragraphs (p.684, 685, 687, 748, 749, 750, 751).**
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:	

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:	**URL not found.**
B. The organization providing the online materials has an accessibility statement.	**Fail**
Additional Information:	**URL not found.**
C. An Accessibility Evaluation Report is available from an external organization.	**Fail**
Additional Information:	**URL not 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:	**Pages 500-504 (PDF pg #s).**

3. Text Adjustment

A. Text is compatible with assistive technology.	**Pass**
Additional Information:	**Pages 500-504 (PDF pg #s).**
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:	**Pages 500-550 (PDF pg #s).**

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).	**Fail**
Additional Information:	**Pages 400-404 (PDF pg #s); tables seem to be "typed in" manually, so the text does reflow, but it completely destroys the legibility of the content as a table. Text that reads as paragraphs reflow coherently.**
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	**N/A**
Additional Information:	**Print version found here: http://business.athabascau.ca/faculty/david-**

	annand-edd/. Version found here is the same book as the PDF, but it was revised and redistributed in December of 2014 while the PDF version we are looking at was distributed in June of the same year. Page numbers could not be matched because they were different iterations.

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:	**Pages 500-504 (PDF pg #s).**

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).	**Pass**
Additional Information:	**Bookmarks for cover, TOC, chapters, subchapters, problems, and solutions are present and functional.**
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:	**No list class.**
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	**N/A**

content that is compatible with assistive technology.	
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:	**Many tables' formats are typed in manually (see Checkpoint 4A, Reflow). According to Accessibility Checker: Rows - Passed, TH and TD - Passed, Headers - Failed, Regularity - Failed.**

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:	**Accessibility Checker: "Navigation links - Passed"; Chapter 1 Problems & Solutions in-book links worked, 30/30.**
B. Live hyperlinks take you to any website or webpages external to the book.	**Fail**
Additional Information:	**Averaged score.**
C. Live links take you to the correct webpage that is functioning properly.	**Pass**
Additional Information:	**Links to several dictionary & wikipedia pages worked, 20/20.**
D. Live links are descriptive enough for the users to know where it should take them.	**Fail**

Additional Information:	No alt 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:	**Links are not underlined but are physically separated from main text.**
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:	**Passes color contrast test for large text.**
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**Light blue on white highlighted text fails test; >90% of text is fine.**
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	**N/A**
Additional Information:	**No simple images (beyond tables).**

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:	**"Primary language - Failed" -- Accessibility Checker.**
B. If the digital resource includes passages in a foreign language, these passages include	**N/A**

markup that declares the language in a manner that is compatible with assistive technology.	
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:	**Accessibility Checker: "Figures alternate text - Failed."**
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 (beyond cover page, technically).**
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 imagery.**

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 (though Adobe Acrobat XI Pro accessibility checker claims for there to be "tagged media").**
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.**

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	**N/A**

(presentation) and meaning (semantics) of the STEM content.	
Additional Information:	**One graph on page 340 of PDF (206 of text). No alt text (is skipped over by Adobe Acrobat Read Out Loud function).**
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:	**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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