One Size Does Not Fit All: Making Open Textbooks More Accessible

Judy Schmitt
University of Missouri-St. Louis, j.schmitt@umsl.edu

Follow this and additional works at: https://irl.umsl.edu/library-faculty

Part of the Accessibility Commons, and the Higher Education and Teaching Commons

Recommended Citation
Schmitt, Judy, "One Size Does Not Fit All: Making Open Textbooks More Accessible" (2021). Library Faculty Works. 18.
Available at: https://irl.umsl.edu/library-faculty/18

This Article is brought to you for free and open access by the University Libraries at IRL @ UMSL. It has been accepted for inclusion in Library Faculty Works by an authorized administrator of IRL @ UMSL. For more information, please contact marvinh@umsl.edu.
One Size Does Not Fit All:
Making Open Textbooks More Accessible

2021 Missouri A&OER Symposium
MARCH 3–5, 2021
About me

Judy Schmitt ([J.Schmitt@umsl.edu](mailto:J.Schmitt@umsl.edu))

- 20+ years in publishing industry
- Former textbook designer and layout professional
- Began incorporating accessibility requirements in 2009
Poll question

Do you make your documents accessible?

A. No, I haven’t really given it a thought
B. No, I don’t know how
C. No, I don’t have time
D. No, it’s not a priority
E. Yes, a little accessible
F. Yes, very accessible
Our agenda

- Why accessibility matters
- Standards
- Four principles of accessibility
- Options for publication and dissemination
- Design considerations and resources
Why you should care about accessibility

- **Ultimate goal:** Textbooks that are fully accessible, readable, and navigable by all
- People without disabilities can benefit, too
- Makes you more aware and empathetic
Who needs accessible documents

People who

- Use assistive technology (AT)
- Are colorblind or have other visual/cognitive disabilities
- Read textbooks on tablets or smartphones
Accessibility standards

- WCAG 2.1
  - Levels A, AA, and AAA
  - WCAG 2.2 coming soon
- PDF standards
  - ISO 32000-1
  - PDF/UA (ISO 14289-1)
WCAG and how to comply

- Useful for multiple pub types, not just Web
- WCAG quick reference
  - Levels + techniques and failures
- Much wordier version
Accessible PDFs

- No way to completely automate the process

- Key accessibility requirements
  - Tagging: [What Is a Tagged PDF?](#)
  - Logical reading order and reflow order
  - Color contrast, hyperlinks, tables, lists, bookmarks/TOC
How to test a document’s accessibility

- Acrobat’s Accessibility Checker
- Microsoft’s Check Accessibility feature
- Screen reader (e.g., NVDA, JAWS, VoiceOver)
- Lynda.com + CommonLook training webinars
To be accessible, a document or website must be

Perceivable
Operable
Understandable
Robust

Source: Bureau of Internet Accessibility (2019)
Addressing the Perceivable component

- Text alternatives
  - Images, time-based media
  - Decorative elements
- Adaptable content
- Distinguishable content

*Source: Bureau of Internet Accessibility (2019)*
How to handle math/chemical equations

- Image file: $2(4y + 1) = 3y$
- Alt text: “2 open paren 4 y plus 1 close paren equals 3 y”
  - Factors, radicals, fractions, exponents, etc.
- MathML code to prepare equation for the Web
  - HTML is not sufficient for math
How to handle charts and graphs

- Colors, lines, shapes, patterns
  - Guide to accessible data visualization
- Alt text + description in text or figure legend
  - Alt text: “Chart type of type of data showing reason for including chart.” (Data from link to data source)
Addressing the Operable component

- Keyboard accessible
- Enough time
- Seizures and physical reactions
- Navigable
- Input modalities

Source: Bureau of Internet Accessibility (2019)
Addressing the Understandable component

- Readable
- Predictable
- Input assistance

Source: Bureau of Internet Accessibility (2019)
Addressing the Robust component

- Reliable interpretation
  - Screen readers don’t always read what’s on the screen!
- Future compatible

Source: Bureau of Internet Accessibility (2019)
Publication & dissemination options

- Creation tools
  - Creating Open Educational Resources: Tips for New Creators (1:37 in video)
- Consider type of content, subject, end users
- Periodic updates
- See my OER Design session
Publication (format) options

- Simple Word doc
- PDF
- HTML
- Webbook or e-book
- See my OER Design session
Dissemination options

- Go beyond your LMS!
- Institutional repository
- OER websites and global repositories
- See Lena Marvin’s presentation on OER sharing
Design considerations and resources

- Colors and contrast
  - Charts, infographics
- Text size and column width
  - Eye tracking
- Headings
  - Fonts, colors, hierarchy, styles
- See my OER Design session
Choosing a color palette

- Learn UI Design: Data Color Picker
- PatternFly: Color Palette
- B. Jenny & N. V. Kelso: Color Oracle
Contrast analyzing tools

- The Paciello Group: Colour Contrast Analyser
- Learn UI Design: Accessible Color Generator
- WebAIM: Contrast Checker
- University of Sussex: Accessible Colour Contrast
Bureau of Internet Accessibility. (2019, September 13). *What are the four major categories of accessibility?* https://www.boia.org/blog/what-are-the-four-major-categories-of-accessibility


Thank you for your attention!

If you have questions, contact me at J.Schmitt@umsl.edu