Striving for Accessible Content:
It Takes a Village

The Road to Electronic Information Accessibility: How Do We Increase Student Success?

Hosted by ALCTS, the Association for Library Collection & Technical Services
Are your products fully compliant with Section 508 and/or WCAG 2.0 AA?  □ Yes □ No
Impact Factors

Disability
- Vision
- Hearing
- Mobility
- Learning
- Cognitive

OS/Device
- iOS desktop
- iOS mobile
- iOS tablet
- Android mobile
- Android tablet
- Desktop

Assistive Technology
- JAWS
- NVDA
- VoiceOver
- Narrator
- ZoomText
- Window Eyes
- Magnifier
- Claro
- ReadSpeaker TTS
- Read&Write
- Kurzweil

Browser
- IE
- Firefox
- Chrome
- Safari
Let’s take a journey

and follow the content
Partners in Ecosystem

- Student/End User: Provide feedback
- Researchers/Professors: Creation of Proprietary Content
- Library/Institutions: Provide feedback, Conform to guidelines and best practice for customizations
- Publishers: Data distribution formats, Submission guidelines particularly for figures, images
- Discovery/Aggregators: Leverage formats and appropriate meta data within UI
Content Must Be

- Perceivable
- Operable
- Understandable
- Robust
Start with the Author
Initial Content Creation

Often starts with a Word document possibly with embedded elements, from the simple to the complex
Microsoft Word provides the ability to add accessibility tags such as alt text to embedded diagrams.

Right click on figure (Windows365).
Initial Content Creation - headings

If you use Headings in your MS document, then they will form the table of contents for sighted and non-sighted users.
Initial Content Creation – built in checkers

Built-in accessibility Checker...

EBSCO Information Services Usability Study on Accessibility

ABSTRACT

Purpose

Last Spring, EBSCO Information Services conducted a usability study with several students with visual impairments. The goal was to understand how these students conduct research and identify areas for improvement of the EBSCO Discovery Service such that it would meet the needs of all potential users. This paper outlines the findings of this research and the applicability to the design of any online resource.

Methodology/Approach

Utilizing the Bentley University User Experience Lab to facilitate the study, and the Carroll Center for the Blind in Newton, MA for recruitment of college students, EBSCO solicited feedback on how these students conduct research on the web in general, as well as their experience using EBSCO’s Discovery Service. The study involved a structured interview with 8 visually impaired students from the Boston area who had recently been enrolled in a college course. The students were also asked to complete certain tasks using the Discovery Service and report back as they completed each activity.

Findings

The findings demonstrated that for the most part, students with visual impairments engaged in research on the web and with the Discovery Service in a similar manner to sighted students. They used the same search engines, accessed the same layout conventions for results lists and filtering, and wanted easily viewable full-text documents. Differences involved their ability to navigate in a similar way to sighted users. Elements that one could skip over quickly as a sighted user were more of a nuisance to those relying on a screen reader. Also, improved descriptions for graphics, functions, and form fields were noted as improvements for better management of the visual and auditory elements of the search interface.

This is a processed PDF file.

1. Prepare
Set file and views to display in the window view box.
Add Document Details Entry
Set Open Options
Set: Annotate OCR
Detect Form Fields
Set Tab Order/Property
2. Set Language 
3. Run Accessibility Check

I have access to the full text of this document.
Although many work tools now have the ability to leverage accessibility tags ..... Often they are left unused
Partners Across Ecosystem - Publishers

- Researchers/Professors
  - Creation of Proprietary Content

- Publishers
  - Submission guidelines particularly for figures, images
  - Data distribution formats
Content Submission to Publisher

• Submission guidelines often include reference to accessibility

Accessibility Guidelines

JITP strives to present all content in formats that are accessible to all potential audiences, even when publishing work that incorporates a range of multimedia formats. To ensure access for the widest possible range of users—including those who may use screen readers—we ask that authors consider the following guidelines:

- When including images, provide brief alternate text that fully describes each visual being presented, including a summary of any important information presented in flow charts, graphs, or other visualizations.
- For some examples of what these alternate text descriptions might look like, see the “Images” section of Accessibility and Usability in Porn, Sex, or Sex: Elizabeth Brewer’s section of the webtext “Multimodality in Motion: Usability and Erotic Spaces” published in Zepe (15:1).
- When including video media, ensure that it is fully captioned.
- When including audio media, provide the Editor with a full transcript of the spoken text and descriptions of any unspoken content.
- When including in-text hyperlinks, ensure all links include meaningful text that indicates where users will be directed (as opposed to generic “click here”).

During the submission process, you will be asked to confirm that your submissions follow these access guidelines. You can find further information about implementing these guidelines in the “Practices to Implement” and “Further Reading & Resources” appendices.

If you would like assistance in meeting these standards, please reach out to the JITP managing editor at as early as possible at editing@iptpedagogy.org.

Back to top

Multimedia Submissions

Authors of video and multimedia texts are advised that submissions should already be in edited and polished form. Multimedia pieces significantly longer than 3–10 minutes are probably not likely to be article-equivalent, and that might be a better match for a publisher other than a journal.

Please see our multimedia submissions guidelines page for details.
• Does the software support?

  – Enter title, abstract
  – Upload document
  – Upload figures
  – Include captions
  – Assign keywords for indexing

Step 2: File Upload

• Your article file must not contain any author details or any information that would identify the authors but must include the structured abstract.

• Please keep file names short (less than 128 characters).

• Upload as many files as included for your manuscript in groups of three or fewer (larger files take longer to upload). These files will be combined into a single document for the peer review process.

• All figures and plates should be submitted in electronic form, of high quality and legible (e.g., formats: .pdf, .ai, .eps, .ps, .tiff). Original figure creation files are preferred. If supplying photographic images set them at a high resolution (300dpi) and at least three times (e.g., formats: .tif, .jpeg, .tiff).

• To designate the order in which your files appear, use the drop-downs in the “Order” column below.

• When you upload files by clicking on the “Submit” button, you can “Save and Continue” instead.
Data is compiled and transformed for distribution

• Editing/Peer-review process
• Metadata extracted
• Figures and tables linked or embedded
• Layout and design finalized
• Export data for distribution, e.g., print, pdf, xml,
Partners Across Ecosystem - Aggregators
Formats Received

- XML
- PDF
- Scanned PDF
## Benefits of XML

<table>
<thead>
<tr>
<th>Feature</th>
<th>XML</th>
<th>PDF</th>
<th>Scanned PDF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrates Web Standards – Dynamic Linking</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Reflowable Text (Optimized Display)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Accessibility Standards</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Searchable Images, Formulas, Tables</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Support for Non-Roman Languages</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Adjustable Font Size, Background Color, Text</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Dynamically embedded Audio, Video, Images</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>
Identifying Key Steps for Developing Mobile Applications and Mobile Websites for Libraries

Devendra Dilip Pattnaik, Raymond Regentrell Herris, and Edwin Cortez

ABSTRACT
Mobile applications and mobile websites (MANSW) represent information systems that are increasingly being developed by libraries to better serve their patrons. Due to the lack of in-house IT personnel necessary to develop MANSW, a majority of libraries now face an reliance on external IT professionals who may or may not understand library and patron needs better than they can and may struggle to find or source financial resources. This paper outlines system requirements and design perspectives to ensure the successful and effective support of libraries and IT professionals engaged in developing MANSW. This paper identifies key steps and considerations to take while developing MANSW for libraries. It also reviews library and information science graduate programs to equip their students with the specific technical knowledge needed to develop and implement MANSW.

INTRODUCTION
The unprecedented demand and changing use of a variety of mobile technologies by diverse patron populations and the ubiquitous nature of mobile content, and the increasing demand for location-aware library services have forced libraries to "go mobile." Mobile applications and mobile websites (MANSW) that is, web portals running on mobile devices, represent information systems that are increasingly being developed and used by libraries to better serve their patrons.

However, a majority of libraries often lack in-house human resources necessary to develop MANSW. Because of a lack of staff equipped with the requisite IT skills and knowledge, they are often forced to partner with and rely on external IT professionals, potentially losing control over the process of developing MANSW. Partnership with external IT professionals does not always help libraries meet the information needs of their patrons but instead can depower their finances and resources. It becomes necessary for libraries to understand the process of developing MANSW to better evaluate and assess MANSW for better serving library patrons in the future.

Devendra Dilip Pattnaik (dpattnaik@tnstate.edu) is an Associate Professor, School of Information Sciences; Raymond Regentrell Herris (rregentrell@tnstate.edu) is an Assistant Professor, Technology, City Technology Department, Nashville State, Nashville, Tennessee; and Edwin Cortez (cortez@tnstate.edu) is a Professor, School of Information Sciences, University of Tennessee at Knoxville.

INFORMATION TECHNOLOGY AND LIBRARIES | SEPTEMBER 2016 | 45
XML Processing

Identifying navigation headings using sec-type field to form Table of Contents

Identifying & properly representing tables

Identifying captions and alt-text

Source types, Subjects added
Linkages to author, other metadata
UI Rendering

- HTML

- PDF

VoIP Accessibility: A Usability Study of Voice over Internet Protocol (VoIP) Systems and a Survey of VoIP Users with Vision Loss

Jaclyn Packer and William Rensel

Structured Abstract: Introduction: Accessibility of Voice over Internet Protocol (VoIP) systems was tested with a hands-on usability study and an online survey of VoIP users who are visually impaired. The survey examined the importance of common VoIP features, and both methods assessed difficulty in using those features. Methods: The usability test included four paid participants who are blind and four who have low vision. Four different tasks using four different VoIP systems (two Windows-based, two iOS-based) were presented in random order. The online survey included participants with prior VoIP experience. 50 individuals who were blind and 22 who have low vision. Results: Usability test participants found that receiving an incoming call was the easiest task and transferring a call was the most difficult. Those with previous iOS experience had a large advantage with the two iOS systems over those with little experience. For the online survey, most respondents (81%) had used VoIP at home for...
Considerations - other 3rd Party Content

- Integrated, embedded content
- Images
- Videos
- Audio
Impact Factors & Testing Combinations

- Disability
- Device
- Browser
- Assistive Technology

Source: https://webaim.org/projects/screenreadersurvey7/

There are many combinations in use, with JAWS with IE the most common, followed closely by NVDA with Firefox.
Partners Across Ecosystem - Institutions

- **Researchers/Professors**
  - Creation of Proprietary Content
- **Library/Institutions**
  - Provide feedback
  - Conform to guidelines and best practices for customizations
- **Publishers**
  - Data distribution formats
  - Submission guidelines particularly for figures, images
- **Discovery/Aggregators**
  - Leverage formats and appropriate metadata within UI
A Tale of Two Rooms
Customizations: Be Aware of Cognitive Overload

Cognitive overload occurs when the volume of information supply exceeds the information processing capacity of the individual.

Source: IGI Global [https://www.igi-global.com/dictionary/cognitive-overload/36188]
Customization: Color Selection for branding

**Deuteranomaly** is a reduced sensitivity to green light and is the most common form of color blindness.

Sources:
- [http://www.colourblindawareness.org/colour-blindness/types-of-colour-blindness/](http://www.colourblindawareness.org/colour-blindness/types-of-colour-blindness/)
- [https://webaim.org/](https://webaim.org/)
Partners in Ecosystem - students

- **Student/End User**: Provide feedback
- **Researchers/Professors**: Creation of Proprietary Content
- **Library/Institutions**: Provide feedback, Conform to guidelines and best practice for customizations
- **Publishers**: Data distribution formats, Submission guidelines particularly for figures, images
- **Discovery/Aggregators**: Leverage formats and appropriate meta data within UI
Student: What does this mean to me?

• Do I know how to search/browse for the content I need?
• Can I read and understand the content I find?
• Do I know how to select the best content for my assignment?
• Can I extract the content in a way to use for my assignment?
Impact Factors

Disability
- Vision
- Hearing
- Mobility
- Learning
- Cognitive

Assistive Technology
- JAWS
- NVDA
- VoiceOver
- Narrator
- ZoomText
- Window Eyes
- Magnifier
- Claro
- ReadSpeaker TTS
- Read&Write
- Kurzweil

Browser
- IE
- Firefox
- Chrome
- Safari

OS/Device
- iOS desktop
- iOS mobile
- iOS tablet
- Android mobile
- Android tablet
- Desktop
Partners Across Ecosystem – Students
Open Communication & Vigilance

- **Listen** to each other, to our users, students, researchers to understand evolving needs
- **Educate** our partners such that content is created accessible from it’s inception
- **Work with** publishers and aggregators to make sure data is provided in the most flexible and appropriately tagged format
- **Evaluate**, re-evaluate and continue to improve
Q & A

• Demita Furnner, d.Furnner@snhu.edu
• Aaron Flint, a.flint@snhu.edu
• Jill Power, jpower@ebsco.com

Hosted by ALCTS, the Association for Library Collection & Technical Services