Accessibility and Assessment in E-Resources Management

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Slides available at https://bit.ly/3xHZ6UW

Building Accessibility at the University of Washington Libraries

Andy Andrews

Brief Overview of Accessibility Partners at the UW

- UW IT Accessible Technology
- Assistive Tech Services
- DO-IT Center
- Disability Resources for Students
- Disability Service Office (Staff, Faculty, Public)
- D Center
- **IT Accessibility Liaisons**

Building Accessibility at the UW Libraries 2016-2017

- 2016-2017 – Libraries IT department and UW Assistive Tech Services consulted together on the accessibility of Primo.
- Jan 2017 - UW IT forms the IT Accessibility Liaisons program, led by the Accessibility Coordinator (Sheryl Burgstahler) for the UW and her team
- March 2017 - Start hearing about WA Policy #188
- July 2017 - Libraries Cabinet meeting focused on Policy #188
- August 2017 Library ITS folks host multiple Libraries-wide presentations on Policy #188
- September 2017 - Libraries start formulating a position devoted to accessibility

Building Accessibility at the UW Libraries 2018

- January 2018 - Job posting in published
- March 2018 - I accept the offer for the position
- April 2018 - Formed the Accessibility Working Group and various subcommittees
- October 2018 - AWG hosts Accessible Libraries Resource Day

Accessibility Improvements

- Optical Character Recognition, searchable PDF format, made default setting on all KIC scanners
- Save option for MP3 file format added to KIC Scanners
- 20 additional KIC scanners added, power height adjustable stations
- 14 power height adjustable workstations added to study areas
- AT Software (Jaws, ZoomText, Claro Reader) now available on guest research stations

Accessibility Working Group Projects

- E-resource keyboard testing of 650+ databases
- Accessibility audits of Pressbooks, Manifold, and Scalar
- Developed a series of 30 min. Quick Tips for our staff
- Friends of the Library award to create accessibility kits
- Libraries' YouTube Channel video captions verified and corrected
- ADA assessment of all our physical locations
- Communications group formed to get the word out to our staff and the public

Some Great Resources

- SBCTC's Library of Accessibility Resources has a great intro to accessibility course (free)
- My favorite resource is Rooted in Rights
- Orbis Cascade Alliance created an accessibility toolkit
- Professional certificate program in Information Accessibility Design & Policy (IADP) at the University of Illinois at Urbana-Champaign is a great program (not free).

Assessing VPATs, keyboard accessibility tests

Hana Levay

Brief Overview of Web Accessibility

W3C (World Wide Web Consortium) definition:

Web accessibility means that websites, tools, and technologies are designed and developed so that people with disabilities can use them.

More specifically, people can:

- perceive, understand, navigate, and interact with the Web
- contribute to the Web

How do we know if web content is accessible?

Brief Overview of Web Accessibility

Web Content Accessibility Guidelines (WCAG) - criteria produced by the W3C to ensure that websites and electronic content are accessible to all.

- WCAG Guidelines - Currently, WCAG 2.1 AAA is the top level of accessibility. (2.2 coming soon!)
- 13 Guidelines
- Each guideline has multiple success criteria with assigned levels
  - A: core criteria, minimum acceptable level of accessibility
  - AA: medium level
  - AAA: top level of accessibility

Brief Overview of Web Accessibility

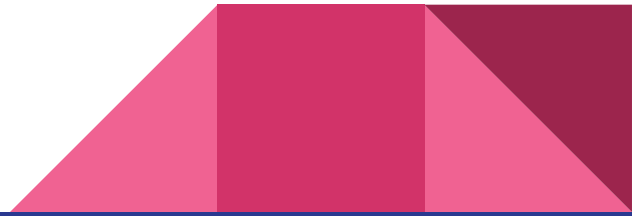
Example

WCAG Guideline 1.2: Time-based Media. Provide alternative to time based media.

Success Criteria examples:

- Level A: Captions provided for pre-recorded video. (1.2.2)
- Level AA: Captions provided for live video. (1.2.4)
- Level AAA: Sign language interpretation provided for pre-recorded video. (1.2.6)

9 total success criteria for this guideline, each assigned a level of A, AA, or AAA.



Why do we need to know if web content is accessible?

Brief Overview of Web Accessibility

Civil Rights

Federal guidelines

- Section 504 - declares civil rights for individuals with disabilities, and grants protection from exclusion and discrimination based on ability
- Section 508 - requires all federal agencies to develop, procure, maintain and use information technology that is accessible to all people, regardless of whether they work for the federal government or not

Legal cases

- Recent example: Payan v LACCD ruled that LACCD must discontinue use of inaccessible library databases.
  - Must conform to WCAG 2.1 Level AA standards

Which library resources are not accessible?

Manual testing

Manually assess each resource for each success criteria.

- Accessibility Bookmarklets
  - Landmarks, Headings, Lists, Images, Forms
- Tota11y (firefox)
  - Headings, Contrast, Link text, Labels, Image alt-text, Landmarks
- Screen readers such as NVDA
- Keyboard testing
- Test with other assistive technology (speech to text, word prediction, etc)

VPATs

Collect VPATs

- Vendor Provided Accessibility Template (VPAT) itemizing each WCAG success criteria.
- Vendor responsible for declaring if their product supports each criterion.

How do we get started?

Goal

Improve the accessibility of subscribed third-party library resources.

Constraints:

- VPATS are hard to read, can be unreliable.
- Libraries have no control of third-party resources.
- Libraries subscribe to many resources.
- Accessibility testing tools often difficult to learn.
- No budget or time.

Plan of action

- Use keyboard testing and VPAT assessment to find which electronic resources are most likely to be not accessible.
- Then, negotiate with the vendors of inaccessible products.

Keyboard Testing

- Easy to learn, easy to use
- No software to download
- *Generally speaking*, if a website is accessible using keyboard navigation, it will also work with various assistive technologies.

> "An accessible website does not rely on the mouse; it makes all functionality available from a keyboard. Then people with disabilities can use assistive technologies that mimic the keyboard, such as speech input." [source]

Keyboard testing cheat sheet

- Navigate web pages using only the keyboard
- #nomouse challenge
- **Tab** – move to the next link, form element or button.
- **Shift+Tab** – move to the previous link, form element, or button.
- **Enter** – activate the current link or button.
- **Space** – check or uncheck a checkbox form element. Will also activate a button that currently has focus.
- **Up/Down arrow keys** – move between radio buttons or, in some cases, menu links.
- **Right/Left arrow keys** – in some cases, move between menu links or adjust sliders in audio and video plugins.
- **Escape** – Close the current modal dialog or dropdown menu and return focus to the element that spawned it.

Keyboard Testing

- For library resources, can you accomplish the main functions of the resource using only the keyboard?
  - Can you search?
  - Can you select a search result?
  - Can you interact with a search result?
  - For media, can you play and pause?
  - We are not testing content at this time, just the interface.
- UW keyboard testing results
  - 606 resources tested
  - 547 (90%) passed
  - 60 (10%) failed

TESTING RESULTS

Below are the results of our evaluations, along with any responses provided by vendors.

Note: a plus sign next to the resource name indicates testing by the **Library Accessibility Alliance** - a combined effort of the Big Ten Academic Alliance and Alliance of Southern Research Libraries

skip to: **A B C D E F G H I J K L M N O P Q R S T U V W** X **Y** Z **#**

A

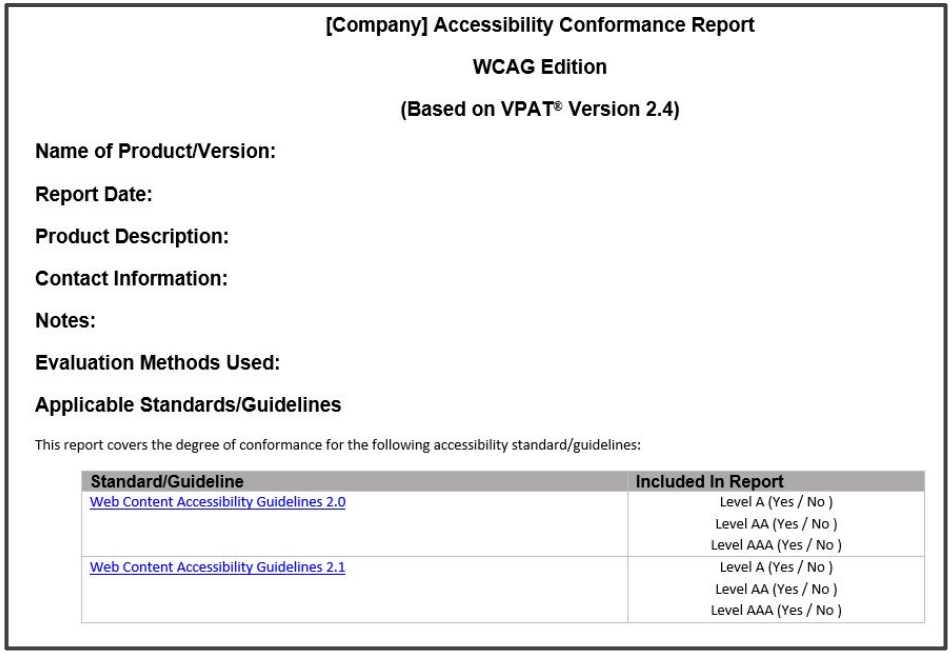
Resource	Vendor	Date Tested	Perform Search	Retrieve Result	Use Result	Basic Compliance
ABC Clio ebooks	ABC-Clio	4/3/2019	yes	yes	yes	yes
Academic OneFile	Gale	1/24/2019	yes	yes	yes	yes
Academic Search Complete	EBSCOhost	1/24/2019	yes	yes	yes	yes
Access World News	NewsBank	3/5/2020	yes	yes	yes	yes
AccessMedicine (+)	McGraw-Hill Medical	1/24/2019	yes	yes	yes	yes
AccessPharmacy	McGraw-Hill Medical	1/24/2019	yes	yes	yes	yes
AccessSurgery	McGraw-Hill Medical	1/24/2019	yes	yes	yes	yes
AccessUN	NewsBank	1/24/2019	yes	yes	yes	yes
ACLS Humanities E-books	Fulcrum	1/24/2019	yes	yes	yes	yes
ACM Digital Library	ACM	3/24/2021	yes	yes	yes	yes
ACS Publications (+)	ACS	1/24/2019	yes	yes	yes	yes
Afghanistan and the US,	Gale	3/35/2021	yes	yes	yes	yes

Introduction to VPATs

- Voluntary Product Accessibility Template (VPAT)
- Current VPAT template (As of February 2020, version 2.4)
- VPATs can be long and complicated, overwhelming for anyone new to accessibility.
- Warning: the existence of a VPAT does not guarantee accessibility compliance.
    - Ideally, a third party accessibility consultant fills out the VPAT, testing for each success criteria.
    - In reality, it's often filled out by the vendor's marketing team with no accessibility expertise.

Key Details in VPATs

- Metadata
  - Name
  - Date
  - Contact
  - Evaluation methods
  - Applicable standard
- 1.3.1 - Information and Relationships
- 2.1.1 - Keyboard testing
- 4.1.2 - Name Role Value



[Company] Accessibility Conformance Report

WCAG Edition

(Based on VPAT® Version 2.4)

Name of Product/Version:

Report Date:

Product Description:

Contact Information:

Notes:

Evaluation Methods Used:

Applicable Standards/Guidelines

This report covers the degree of conformance for the following accessibility standard/guidelines:

Standard/Guideline	Included In Report
Web Content Accessibility Guidelines 2.0	Level A (Yes / No) Level AA (Yes / No) Level AAA (Yes / No)
Web Content Accessibility Guidelines 2.1	Level A (Yes / No) Level AA (Yes / No) Level AAA (Yes / No)

This slide derived from the webinar “Accessibility in Procurement”

Example - Blank VPAT

Table 1: Success Criteria, Level A

Notes:

Criteria	Conformance Level	Remarks and Explanations
1.1.1 Non-text Content (Level A)		
1.2.1 Audio-only and Video-only (Prerecorded) (Level A)		
1.2.2 Captions (Prerecorded) (Level A)		
1.2.3 Audio Description or Media Alternative (Prerecorded) (Level A)		
1.3.1 Info and Relationships (Level A)		
1.3.2 Meaningful Sequence (Level A)		
1.3.3 Sensory Characteristics (Level A)		
1.4.1 Use of Color (Level A)		
1.4.2 Audio Control (Level A)		
2.1.1 Keyboard (Level A)		
2.1.2 No Keyboard Trap (Level A)		
2.1.4 Character Key Shortcuts (Level A 2.1 only)		
2.2.1 Timing Adjustable (Level A)		
2.2.2 Pause, Stop, Hide (Level A)		
2.3.1 Three Flashes or Below Threshold (Level A)		
2.4.1 Bypass Blocks (Level A)		
2.4.2 Page Titled (Level A)		
2.4.3 Focus Order (Level A)		

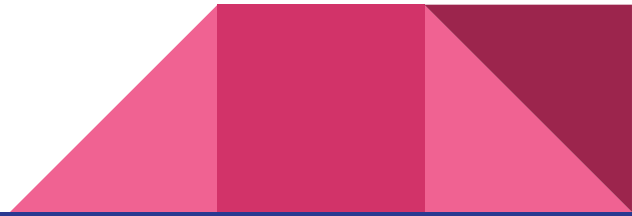
VPAT Metadata Project

Goal: Review VPATs for UW e-resources and extract metadata on key details

- Name, Date, Contact and Applicable Standard information copied directly
- Information in success criteria 1.3.1, 2.1.1 and 4.1.2 captured in two fields: “Conformance Level” and “Remarks and Explanation”
- “Evaluation Methods Used” described on a scale: Blank, Minimal, or Full

VPAT Metadata Project

- Challenges
  - VPATs are not always completely filled out
  - Using a scale to summarize “Evaluation Methods Used”
    - Different levels of detail used to describe evaluation methods
      - “Assistive technologies” vs naming specific products
      - “Testing is based on general product knowledge”
- Findings:
  - There is a wide range of detail provided in VPATs
  - Some VPATs are very informative, while others do not provide much information about a product’s accessibility



VPAT Metadata Project

Criteria	Conformance Level	Remarks and Explanatio
1.1.1 Non-text Content (Level A)	Supports	
1.2.1 Audio-only and Video-only (Prerecorded) (Level A)	Supports	
1.2.2 Captions (Prerecorded) (Level A)	Supports	
1.2.3 Audio Description or Media Alternative (Prerecorded) (Level A)	Supports	
1.3.1 Info and Relationships (Level A)	Supports	
1.3.2 Meaningful Sequence (Level A)	Supports	
1.3.3 Sensory Characteristics (Level A)	Supports	
1.4.1 Use of Color (Level A)	Supports	
1.4.2 Audio Control (Level A)	Supports	
2.1.1 Keyboard (Level A)	Supports	
2.1.2 No Keyboard Trap (Level A)	Supports	
2.1.4 Character Key Shortcuts (Level A 2.1 only)	Supports	
2.2.1 Timing Adjustable (Level A)	Supports	
2.2.2 Pause, Stop, Hide (Level A)	Supports	
2.3.1 Three Flashes or Below Threshold (Level A)	Supports	
2.4.1 Bypass Blocks (Level A)	Supports	
2.4.2 Page Titled (Level A)	Supports	
2.4.3 Focus Order (Level A)	Supports	
2.4.4 Link Purpose (In Context) (Level A)	Supports	
2.5.1 Pointer Gestures (Level A 2.1 only)	Supports	
2.5.2 Pointer Cancellation (Level A 2.1 only)	Supports	
4.1.2 Name, Role, Value (Level A)	Partially supports	For most user interface components, the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to user agents, including assistive technologies. However, there are minor exceptions. These include: • Tooltip controls are not exposed to assistive technologies. • Modal dialogs lack appropriate roles and ARIA attributes. • Autocomplete functionality lacks appropriate roles and ARIA attributes. • Custom <select> widgets lack appropriate roles and ARIA attributes. • Error states of form elements is not made programmatically available to assistive technology users. • Tabbed navigation has not been assigned the correct roles and ARIA attributes.

VPAT + Keyboard Testing Rubric

VPAT Completion score: “how does it look?”

- 0 - Complete VPAT
- 1 - Many edits but no comments
- 2 - Some edits but not helpful
- 3 - None/out of date/blank/default template

Keyboard test:

- 0 if passed
- 3 if failed

VPAT success score: “what does it say?”

- 0 - Full evaluation method, most "supports" with comments
- 1 - Some “partially supports” with comments
- 2 - All “partially supports”, or, no comments
- 3 - Mostly “does not support”, no comments, ineffective evaluation methods

VPAT 2.1.1 “Keyboard Testing” and keyboard test agreement:

- 0 if they agree
- 1 if they don't agree

Overall score: higher score correlates to higher risk of inaccessibility (range of 0 - 10)

VPAT scoring examples - probably accessible

	Metadata	Rubric				
VPAT Platform/Vendor	Name	VPAT Completion score	VPAT success score:	VPAT and keyboard	Keyboard test	Overall score
IBIS World	my.ibisworld.com	0	0	0	0	0
ScienceDirect (Elsevier)	ScienceDirect	0	0	0	0	0
Social Explorer	Social Explorer	0	0	0	0	0
Brill	Brill Online	0	1	0	0	1
Clarivate	InCites Journal Citation Reports (JCR)	0	1	0	0	1
CQ Press (Sage)	CQ Press Library	0	1	0	0	1
Engineering Village (Elsevier)	Engineering Village	0	1	0	0	1
HathiTrust Digital Library	HathiTrust Digital Library	0	1	0	0	1
IOP Science	iopscience.iop.org	1	0	0	0	1
Springer	SpringerLink	0	1	0	0	1
Wiley	Wiley	0	1	0	0	1

VPAT scoring examples - probably not accessible

VPAT Platform/Vendor	Name	VPAT Completion score	VPAT success score:	VPAT and keyboard	Keyboard test	Overall score:
Conference Board	conference-board.org	3	3	1	3	10
Knovel	Knovel	2	2	1	3	8
WOIS	Career Planner 2021-22	3	2	0	3	8
ASTM Standards & Engineering Digital L	ASTM Standards and Engineering Digital Libı	3	3	1	0	7
Associated Press	APStylebook.com	3	3	1	0	7
HSUS - Cambridge UP	Historical Statistics of the United States Mille	3	3	1	0	7
New Play Exchange		3	3	1	0	7
PrivCo	PrivCo Academic Enterprise Plan	3	3	1	0	7

Conclusions

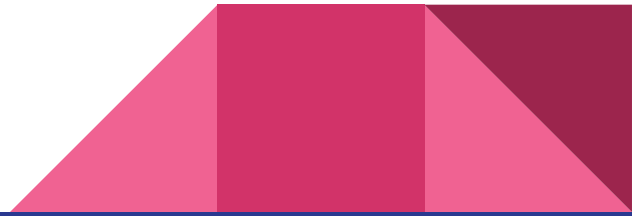
- 53 complete assessment results
  - 65 VPATs assessed
  - 12 did not have keyboard test results associated with them
- Eight scored in the 7-10 range - 15%
- 24 scored in the 0-3 range - 45%
- Results more nuanced than pass/fail
- Out of date or no VPAT and a failed keyboard test guarantees a poor result.
- Keep in mind: this score only shows likelihood of inaccessibility. It does not guarantee accessibility. It helps us narrow our scope.

Moving Forward

Focus on the vendors who scored the highest, indicating their products likely to be inaccessible.

- Ask to add accessibility license language.
- Consider asking for one-year license with intent to renew only if improvements made in that time.
- Include accessibility results when considering products to license or cancel.
- Inform vendors that accessibility impacts decision making.

Vendors need to work with us to improve accessibility.



Additional Resources

- Library Accessibility Alliance
  - Accessibility Toolkit
  - Model license language
  - Testing results
- WCAG Guidelines
- UW keyboard testing results
- CUNY VPAT Repository
- Webinar: Accessibility in Procurement and slides
- Dangers of Accessibility Overlays - factsheet

Contact

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