Sakai Accessibility Compliance & Testing

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Special Guests: Ben Bricker, Morgan Cunningham & Marissa Thompson, Illinois State University

Credit: Photo by Loic Romer
Presentation Topics

- About the Sakai Accessibility Working Group
- How and why we evaluate accessibility
- How do you test for accessibility?
- Examples of Testing:
  - Hiring a professional firm: Sakai’s Ra11y - Review Accessibility Plan
  - Automated testing with paid software: Pomona College’s use of SiteImprove
  - Authentic User Testing: Illinois State University’s Accessibility Testing Team
- Resources for testers
- (Time allowing) QA testing with audience volunteers
Sakai Accessibility Working Group

Introductions
About the Accessibility Working Group

What we do:

- Accessibility consulting to the Sakai Community
- Identify and set standards to meet (WCAG 2 Level AA, WAI-AIRA)
- Track accessibility issues (+ write JIRAs)
- Work to resolve issues
- Help with accessibility documentation
- Meet every other Wednesday at 16:00 EST (20:00 UTC)
- [http://apereo.blindsidenetworks.net/](http://apereo.blindsidenetworks.net/)
- Choose “Apereo Room 4”, password “apereo”
- Keep in touch through the sakai-dev and sakai-user mailing lists
Join us!

Accessibility Working Group Calls
Every other Wednesday at 16:00:00 EST

Next Meeting: Wed, June 13, 2018
Accessibility = a11y

a11y is a shortening of accessibility, with 11 letters dropped
How & Why We Evaluate Accessibility
Global Standards and Beyond
The standard that we apply to Sakai and other modern web sites is WCAG2 (Web Content Accessibility Guidelines 2.0)
International & more stringent than the Americans with Disabilities Act (ADA) Section 508
Developed by W3C (World Wide Web Consortium)
Applies to more than just the HTML
Adopted into the procurement standards for organizations such as the California Department of Education
Big spec. Big deal.
“Make your content P.O.U.R. - NOT poor!”
POUR principle

- **Perceivable** - Is the content presented to users in a way that they can perceive? Does it rely on one sense? Have you considered how someone who isn’t well sighted might read that information, or how someone colorblind might?
- **Operable** - Can the content be interacted with by someone not using a mouse?
- **Understandable** - Are items like structural elements, like lists and headings, used in a meaningful way?
- **Robust** - Content must be robust enough so that it can be interpreted reliably by a wide variety of technologies and devices, including assistive technologies.

"Stupid Question: It’s the law and it’s morally right, so why else make content accessible?"
Universally-Designed Content is Better for Everyone!

**Cartoon:** Students waiting outside school while janitor shovels snow off stairs.

**Student in wheelchair:** Could you please shovel the ramp?

**Janitor:** All these other kids are waiting to use the stairs. When I get through shoveling them off, then I will clear the ramp for you.

**Student:** But if you shovel the ramp, we can all get in!

**Clearing a path for people with special needs clears the path for everyone!**

**Image credit:** Michael Giangreco. Absurdities and Realities of Special Education. SAGE: Corwin. 2007. CD. [http://www.uvm.edu/~cndi/archives/mgiangre/](http://www.uvm.edu/~cndi/archives/mgiangre/)
How do you Test for Accessibility?

Methodologies
Some Ways to Test

- Hire a professional firm to test, e.g., Level Access, Paciello Group, Deque, AccessibilityOz
- Automated Testing
  - Paid software
  - Use native browser tools to identify issues
- Manual testing using assistive technology (either simulating user experience or, better yet, having an authentic user test!)
- Using BOTH automated and manual testing is recommended!
METHOD 1: HIRE A FIRM
Example: Sakai’s Ra11y - Review Accessibility Plan
The RA11Y Plan (Review Accessibility Plan) is an initiative by the Sakai Accessibility Working Group to commission a substantive review of Sakai’s accessibility by a trusted third-party reviewer with a goal of obtaining a certification, including a VPAT (Voluntary Product Accessibility Template) and WCAG2-based review, that would assure potential adopters and current users alike.
RA11y Timeline (Original Projected)

- Project conceived at Apero 2015 June 2015
- Vendors considered November 2015
- Contract Signed with SSB Bart January 2016
- Work starts on Audit results addressing identified issues June 2016 August 2016
- Phase 1 May 2015 - August 2016
- Phase 2: Remediation work August 2016 - February 2018
- Sakai 12 has strong WCAG compliance statement January 2018
- Regression test done by SSB Bart (now Level Access) December 2017
Funding

We raised $86,000+ and many development hours! Big THANKS to…

- Apereo
- Durham Tech
- Tufts University
- Pepperdine
- Longsight
- Brock University
- Illinois State University
- University of Virginia
- University of Rhode Island
What We Reviewed

- rA11y was a review of the most common 17 tools in Sakai.
- 40 specific static items were reviewed within them, as well as 20 tasks.
- Focus was primarily on student tasks.
- The review was conducted by SSB Bart (now Level Access) on a server hosted by Marist.
Initial Test Results (June 2016)

76% Compliance against WCAG 2 AA
SSB Bart (now Level Access) returned a report and an interim WCAG 2 compliance statement for Sakai, with 61 issues detected (some of these are the same issue appearing on multiple pages).

Work began on addressing issues (labelled rA11y).

Some of that work shipped in 11.3 and 11.4 (big screen reader fix in 11.3!) and will ship in 12.
Following first round testing, 95% of the issues were resolved (fixed, incorporated, duplicate or non-issue)! Thanks developers!!

Details at: https://confluence.sakaiproject.org/display/2ACC/rA11y+Plan
Regression Test Results (February 2018)

68% compliance against WCAG2 AA
Why Such a Low Score?

- Level Access testing identified 116 new issues in Sakai JIRAs. Most of these are **newly identified** issues in the regression test related to new features/code in Sakai 12.
- Many of the issues identified by Level Access appear on multiple pages (most prevalent issues are described by Level Access as “Pattern” and “Global”).
- Level Access marked about 10% as “Not Fixed” or “Partially Fixed” from first round testing.
- A lot of excellent work was done (90% of original issues completely fixed taking into account regression test!) but we have a lot more to do!
Final Audit & Compliance Statement

- Unfortunately, the results from the regression test would not yield a strong compliance statement.
- Level Access recommends having 90% compliance rating before we get a statement.
Next Steps

- 116 Sakai JIRAs (labelled a11y2) were created.
- Developers have started work on these and 24 have already been fixed.
- Level Access has discussed setting up a new contract to assist us with continued work, so they can test smaller changes as we go.
- Longsight has estimated 100 hours for fixing “Pattern” and “Global” issues this summer (thanks Josh Wilson, Sam Ottenhoff, Matthew Jones, and Earl Nietzel!!)
- We are waiting on Level Access’ estimate to determine total cost.
- Development hours, funding, and developers needed!
Key Takeaways

- Remediation is MUCH more difficult and costly than building accessibility into product design from the beginning.
- When new development occurs, we must be vigilant not to introduce new accessibility issues.
- Building accessibility into our development and testing process ensures that we will not need remediation work.
Method 2: Automated Testing With Paid Software

Example: Pomona College’s Use of Siteimprove
SangHyun Jeon, PhD.
Claremont Sakai History
Pomona College Accessibility History

- Provider selection
  - Siteimprove vs Monsido
- Regular accessibility meetings
  - Communications/ITS
- External vendors - contract
  - Accessibility Requirements
- Digital accessibility website
What is Siteimprove?

- Third party SaaS provider
- Web site tools to help content authors identify
  - broken links, misspellings and ADA compliance issues
- Email reports to site administrator
- Weekly scan results: content evaluations with potential issues
- Siteimprove setup
Siteimprove’s Index
Digital Certainty Index (DCI) Score Dashboard

- **Digital Certainty Index**: Score 87.1 / 100
  - Fix this issue and reach 88.8 points. Pages at level 2 with multiple Level AAA errors.

- **Quality Assurance**: Score 96.2 / 100
  - Fix this issue and reach 99.3 points. No new pages added within last 30 days.

- **Accessibility**: Score 88.9 / 100
  - Fix this issue and reach 94.0 points. Pages at level 2 with multiple Level A/AA errors.

- **SEO**: Score 76.3 / 100
  - Fix this issue and reach 80.8 points. Mobile speed.
Accessibility Overview

Score details

- Errors (all WCAG levels): 90 / 100
- Warnings (all WCAG levels): 97 / 100
- Pages with multiple Level A/AA errors: 70 / 100

Overall score: 88.9 / 100

Accessibility Score progress

Score breakdown

Levels of Conformance and Severity

Issues (all roles)

Fix These Issues To Improve Your Score

- Pages at level 2 with multiple Level A/AA errors: 5.08 points
- Pages at level 1 (homepages) with multiple Level A/AA errors: 2.00 points
- Pages at level 3 and above with multiple Level A/AA errors: 0.91 points
- CSS Validation: 0.79 points

Fixed Issues

- The image does not have the correct alternative: 0.81 points
- No ARIA image is missing alternative text: 0.81 points
- Webpage title is missing text: 0.81 points
- Missing button in form: 0.81 points

Export

Export

Accessibility Overview

Score details

- Errors (all WCAG levels): 96.9 / 100
- Warnings (all WCAG levels): 92.0 / 100
- Pages with multiple Level A/AA errors: 70.0 / 100

A weighted measure of how well your site conforms to WCAG, based on the proportion of pages which have two or more Level A or AA errors.
Accessibility Overview – Overall Score

Overall score:

Accessibility: 88.9/100

Industry benchmark (Education): 68.4

Change to your score over the last 30 days
Accessibility Overview – Issues Panels

Legend

Roles

Issues (all roles)

Fix These Issues To Improve Your Score

<table>
<thead>
<tr>
<th>Issue</th>
<th>Points you can gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text area has no description</td>
<td>0.04 points</td>
</tr>
<tr>
<td>Text area has no description</td>
<td>0.04 points</td>
</tr>
<tr>
<td>Text area has no description</td>
<td>0.04 points</td>
</tr>
<tr>
<td>Language of page has not been set</td>
<td>0.02 points</td>
</tr>
<tr>
<td>No top-level heading on the page</td>
<td>0.02 points</td>
</tr>
</tbody>
</table>

Fixed issues

<table>
<thead>
<tr>
<th>Issue</th>
<th>Points already gained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing button in form</td>
<td>0.01 points</td>
</tr>
<tr>
<td>Link identified only by color</td>
<td>0.01 points</td>
</tr>
<tr>
<td>Form control label is missing text</td>
<td>0.01 points</td>
</tr>
<tr>
<td>Select box has no description</td>
<td>0.01 points</td>
</tr>
<tr>
<td>WAI-ARIA validation error is present when page loads</td>
<td>0.01 points</td>
</tr>
</tbody>
</table>

See all issues

Last completed crawl: 5/12/2010

Next complete crawl scheduled for: 5/17/2010
How to fix issues?

Link text used for multiple different destinations

Decision for this issue
No decision taken

2.4.9 Link Purpose (Link Only)
Description of this issue:
The same link text is used for links going to different destinations. Users might not know the difference if they are not somehow explained.

How to fix it:
If the destination page is the same, this is not an issue.

If the destination pages are not the same, make sure the links can be distinguished by their link texts or WAI-ARIA labels (‘aria-labelledby’ or ‘aria-label’) alone to make the difference clear to all users.

Filter occurrences

Decision
☑️ No decision taken
☐ Can’t fix
☐ Approved

Cancel Apply filter

Showing 2 of 2 occurrences

Occurrences on this page
2

Link:
https://mainpgateway

Highlight in
Page content HTML

How do I meet this criteria?
Use one of the following techniques from WCAG 2.0:

- ARIA7
- ARIA8
- G91
- H30
- H33
Siteimprove Accessibility Checker

- Free Chrome Plugin
  - Anyone
  - Evaluate any webpage
  - Without costing
  - Check page by page
  - No fix guidance
“Pomona College is very proud of the stride we’ve made in improving accessibility.”
Method 3: User-based Accessibility Testing

Example: Illinois State University's Accessibility Team

Ben Bricker
Morgan Cunningham
Ron McGettrick
Marissa Thompson
Accessibility Team

**Morgan Cunningham** is a senior at Illinois State University studying Social Work. She is passionate about advocating for the disability community. In the future she’d like to pursue a career working with individuals with disabilities.

**Marissa Thompson** is also a senior at Illinois State University. She is double majoring in Special Education for Low Vision/Blindness and Special Education Learning and Behavior Specialist. Marissa loves teaching and working with individuals with disabilities.

Pictured (Left to Right): Marissa, Morgan, and Zoot
Team Background

- Our team was formed in December of 2016 by our executive vice president Charles Edamala and Todd Smoak Director of Application Services.
- Our original scoped was to provide accessibility review and testing of the ISU Sakai LMS system (“Reggienet”).
- Our scope has expanded to encompasses all enterprise applications that our department supports (65 applications).
- To date, our team has found close 40 issues both in-house, with external vendors, and working with the sakai community.
- The accessibility testing team is made of 2 part-time accessibility testers with 1 full time supervisor reporting to AT leadership.
How we go about testing

1. Leadership identifies potential applications to review, ideal times to do testing and create a maintenance window. A testing calendar is created.
2. Morgan and Marissa are given training on the app or website that will be review.
3. Morgan then tests the app using JAWS 18.0
4. Marissa watches and lets Morgan know if there are any visual blockers on the screen preventing JAWS from working.
5. After finding defects in the website, Marissa types up a spreadsheet documenting the defects.
6. Morgan prioritizing the defects and they submit the spreadsheet for review.
7. ISU leadership meets monthly with the accessibility supervisor to review the report and coordinate fixes with our development teams or vendors.
How to set up your own accessibility testing team

- **Establishing partnerships** with accessibility organizations (student accommodation offices, special education programs, human service agencies, or other local groups) on or near your campus.

- **Utilizing their recommendations** and referrals on potential candidates to work for you.

- **Create a job posting with specific requirements** according to employment laws in your state. We recommend hiring candidates with knowledge or experience in the world of accessibility.
But it’s just me on the team!
What can I do?
Use a Screen Reader for Testing

Screen Readers for Windows and Mac:

- Freedom Scientific JAWS (Expensive, but robust, fully-featured, and often used by those with low vision):
  http://www.freedomscientific.com/Products/Blindness/JAWS
- NVDA for Windows (open source!): https://www.nvaccess.org/
- VoiceOver for iOS:
  - In iOS, go to the Settings page, select General > Accessibility > Speech
Browser Tools & Plugins

Chrome:
- ChromeVox screen reader plugin for Chrome
- Chrome’s Developer Tools - Accessibility Audit

Firefox:
- Fangs (Firefox screen reader emulator)
- FAE - Firefox Accessibility Extension

Chrome and Firefox:
- WebAIM’s WAVE plugin - http://wave.webaim.org/extension/
Sakai Accessibility Working Group List of Resources:

https://confluence.sakaiproject.org/display/2ACC/Accessibility+Resources+Listing
THE FUN PART
Let’s do some testing!

Credit: Photo by Tourism Montréal, Stéphan Poulin
Volunteers?
Step Right Up!
JOIN THE CONVERSATION

https://confluence.sakaiproject.org/display/2ACC/Accessibility+Working+Group

Accessibility Working Group Calls

Every other Wednesday at 16:00:00 EST

Next Meeting: Wed, June 13, 2018
THANK YOU!

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Credit: Photo by Loic Romer
Thank you to the following photographers and organizations for permission to use these photos for our Open Apereo 2018 conference in Montreal, QC.

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