



A Longitudinal Study on Higher Education Web Accessibility: Implications for Advocates

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These slides: <http://staff.washington.edu/tft>

This presentation is based on a paper that will soon be published in *Disability and Rehabilitation: Assistive Technology*

The Population

- 127 higher education institutions in the Northwest (Washington, Oregon, Idaho, and Alaska)
- 7 doctoral/research universities
- 26 masters colleges/universities
- 14 baccalaureate colleges
- 57 associates colleges
- 23 other (theological, art, health, etc.)

Procedure

- Manually evaluated all home pages
 - Phase I: 2004-05
(three assessments, approximately 3 mos. apart)
 - Phase II: one assessment in 2009
- During Phase I, provided technical support to a subset of the population (12 institutions), either by email, phone, or in-person training

Measure #1: Alt Text on Images

- 3 = all informative images have meaningful alternate text, and all decorative images have alt="" (alt text judged 'meaningful' if it communicates in any way the content of the image). Examples of alternate text that is not meaningful are alt="photo" and alt="file1.jpg"
- 2 = Meets the above conditions on *some* images
- 1 = Meets the above conditions on *no* images

Measure #2: Access by Keyboard

- 3 = features that can be accessed by mouse can also be accessed by keyboard **in IE7**.
- 2 = technically possible to access all objects by keyboard, but difficult due to such factors as illogical tab order or lack of visual cues indicating current focal position on the page (*including* browser default visual queues).
- 1 = impossible to access certain features by keyboard.

Measure #3:

Coded Support for Navigation

- 3 = a *skip navigation* link is available and working
- 2 = a *skip navigation* link is present but broken
- 1 = no *skip navigation* link is present so long as a link is warranted on the page. A link was judged to be warranted if the page contains main content in addition to navigation content.

New Measure #1: Keyboard Accessibility, Strict

- Same as Measure #2 (Access by keyboard), but visual cues were interpreted more strictly. If there was no stylized change when an element received keyboard focus, the page was determined to be technically difficult (e.g., no higher rating than a 2)

New Measure #2:

Logical HTML Heading Structure

- 3 = a reasonably logical HTML heading and subheading structure is present, where content that clearly seems visually to be a heading or subheading is marked up as such.
- 2 = a heading structure is present, but does not reflect the apparent visual structure of the page.
- 1 = No heading structure is present.

New Measure #3: Dynamic Menus

- Does the page contain dynamic menus (Y/N)?
- Menus were considered 'dynamic' if hovering over a menu item with a mouse triggered the display of a submenu.

New Measures #4 and #5: Adobe Flash

1. Does the page include Flash content (Y/N)?
 - Two methods for identifying Flash:
 - *JAWS Find Next Object*
Insert + Ctrl + O
 - Visual determination, verified by right clicking on suspected Flash content
2. If yes, is the Flash content accessible to screen reader users (Y/N)?

Results

Results on Measure #1: Alt Text

Percent of home pages with meaningful alternate text on all images:

- In 2004-05:
 - 27%
- In 2009:
 - 41%
- Institutions who received technical support were significantly more likely to improve on this measure

Results on Measure #3: SkipNav

Percent of home pages with “skip navigation” links:

- In 2004-05:
 - 7%
- In 2009:
 - 19%
- Institutions who received technical support were significantly more likely to improve on this measure

Results on Measure #2: Keyboard

Percent of home pages on which all content was accessible by keyboard:

- In 2004-05:
 - 78%
- In 2009:
 - 65%
- Institutions who received technical support were significantly more likely to *decrease* in accessibility on this measure

Results on New Measure #1: Keyboard Accessibility, Strict

When applying a stricter measure of keyboard accessibility, including a requirement that visual cues be consistent with those provided for mouse users, only 13% of pages have full accessibility.

Results on Other New Measures

- 45% of pages have reasonably logical heading structure (over half have no coded navigation whatsoever)
- 39% of pages include dynamic menus
- 38% of pages (40 pages) include Flash content
- Of the pages with Flash, only one had included accessible Flash features (that one institution had received extensive technical support)

Summary: Significant Changes

- Home page accessibility improved on basic measures
 - Alt text for images
 - Skip navigation links
- Keyboard accessibility declined
 - High incidence of dynamic menus
 - High incidence of Flash content
 - Very little attention paid to accessibility of these relatively new technologies

Effect of Outreach

- Overall, changes over time do not appear to be associated with assigned outreach group (receiving a letter was not in and of itself sufficient to increase accessibility).
- However, those self-selected institutions who received support and/or training (regardless of assigned group) showed significantly more improvement than those who received none, but only on the three checkpoints where there was significant improvement overall.

Effect of Outreach (cont.)

- On two of three checkpoints where there was significant decline, those who received the most extensive training showed a significantly greater decline.
- Therefore, changes in technology may have a stronger effect on web accessibility than advocacy, support and training do.

Implications

- The number of institutions that are motivated to address accessibility *at some level* are low, but growing
- What motivates them?
 - Law suits or fear of legal risk
 - Increased focus on standards-based design
 - Greater relevance of web-enabled mobile devices
 - Effects of outreach, advocacy, and/or education
 - One champion within the institution

More Implications

- Outreach and education may have a positive short-term effect, but may not be strong enough to counter the factors that motivate institutions to deploy inaccessible emerging technologies.
 - Easy to forget accessibility when absorbed in implementing an exciting new technology
 - Under institutional pressure to implement new technologies
 - Intend to work out accessibility later

What Can We Do?

- Breed more champions, reduce independence on individuals
 - Empower the infrastructure
 - Pursue a top-down approach
- Work with vendors toward improving accessibility of authoring tools
- Educate web developers on how to use accessible features of authoring tools

What else can we do?

- Encourage researchers in computer science and engineering to play an active role in advancing the state of web accessibility
 - Better, more intelligent assistive technologies
 - Tools that automate caption and transcript production
- Stay in touch
 - <http://www.athenpro.org>