

Assistive Technology Wiki Accessibility Report

Introduction

The [CS-SIS Adaptive Technologies Committee](#) applied the [Web Content Accessibility Guidelines version 2.0](#) (an internationally accepted standard for Web accessibility from [W3C](#)) in evaluating the Committee's own assistive technology pages on the CS-SIS wiki hosted by PBworks.

The [current](#) Section 508 standards are expressly based on WCAG 1.0 guidelines and the Section 508 [refresh](#) expressly incorporates all 26 "A" level Success Criteria and all 12 "AA" level Success Criteria from WCAG 2.0. In addition, the US Department of Justice has undertaken a [rulemaking proceeding](#) to make those 38 Success Criteria federal regulations applicable to entities otherwise covered by the Americans with Disabilities Act (an additional 23 success criteria designated as "AAA" level compliance are not part of the regulatory proceeding or the 508 Refresh).

The Committee used the [WAVE](#) accessibility tool and the [AChecker](#) accessibility tool to do a detailed analysis of each assistive technology page and found 11 errors on the introductory page. All 11 errors occur outside of the user editable fields and are created by the way PBworks codes its pages. The other three primary pages were identical (though certain coding errors introduced by the WYSIWYG editor within the editable wiki fields had to be corrected).

The error lists are divided by type and listed in order of likely significance. Each type is listed in keyboard focus order (though the focus order can be modified using the *tabindex* attribute and is modified by PBworks to move the search box ahead of where it otherwise would be). Following the lists are explanations of their significance and which guidelines the errors fail to conform to as defined by W3C.

Missing Skip Navigation

Error List

1. A "skip navigation" link is missing even though there are eight navigation links common to each page.

Practical Effect

The lack of skip navigation makes it more difficult for screen readers to bypass repetitive content.

Guideline/Success Criterion Non-Conformance

The skip navigation error does not conform to Guideline [2.4 Navigable](#) and Success Criterion [2.4.1 Bypass Blocks](#).

Missing Link Text

Error List

1. minimize/maximize main body arrow
2. PBworks homepage link
3. minimize/maximize Navigator menu arrow
4. minimize/maximize Sidebar menu arrow
5. minimize/maximize Recent Activity menu arrow

Practical Effect

Neither screen reader can read link text that isn't there. The homepage link error is less important because the next focus item is a second link to the same page. The missing text from the body arrow link could affect low vision users who would benefit from maximizing the screen but cannot see the arrow. The lack of text for the menu arrows prevents a user with a screen reader from minimizing the menus to bypass the listed links (though they can still bypass the links by using the proper key to move between headings).

Users of speech recognition programs such as Dragon NaturallySpeaking and Windows Speech Recognition are impacted by missing link text because they cannot say "click [name of link]" to click on a particular link. Instead, they must use the MouseGrid-number-number-click sequence (watch the 11 second [MouseGrid demo](#) using MouseGrid to click on one of the arrows in question).

While Dragon users can in some instances access links by speaking the document code (e.g., edit field input names), most users will not look at the underlying markup language.

The MouseGrid sequence can take significantly longer, particularly when using Windows Speech Recognition because WSR does not have a separate "move mouse" command to compensate for the limitations of MouseGrid.

Guideline/Success Criterion Non-Conformance

The missing link text errors do not conform to Guideline [2.4 Navigable](#) and Success Criterion [2.4.4 Link Purpose \(In Context\)](#) because the context is obvious to a sighted user but not to a screen reader user.

Missing/Confusing Focus Issues

Error List

1. The keyboard focus order is significantly different than the way a sighted user would read the page.
2. The style sheet does not provide for visible focus.

Practical Effect

The focus order requires that the small links at the bottom of the page come before the menu links on the right side. The lack of visible focus impacts low vision users who rely on visible focus to navigate pages. While some browsers provide visible focus, using the style sheet to provide visible focus standardizes responses.

Guideline/Success Criterion Non-Conformance

Neither focus error conforms to Guideline [2.4 Navigable](#). The focus order of the page does not conform to Success Criterion [2.4.3 Focus Order](#). The visible focus error does not conform to Success Criterion [2.4.7 Focus Visible](#).

Missing Form Label

Error List

1. The site search input box

Practical Effect

Though the search box has a title that enables screen readers to identify it as a search box, the title does not indicate what is being searched. Though the text in the box says "search this workspace" screen reader users do not hear that text if using the tab key. One cannot use the arrow keys to navigate from the top of the browser to the search box. The only circumstance in which a screen reader user would hear the text in the search box is if the screen reader started reading from the top and continued without interruption from the user.

Guideline/Success Criterion Non-Conformance

The missing labels do not conform to Guideline [1.3 Adaptable](#) and Success Criterion [1.3.1 Info and Relationships](#) because not all of the relevant information regarding the input boxes can be programmatically determined. The missing labels do not conform to Guideline [3.3 Input Assistance](#) and Success Criterion [3.3.2 Labels or Instructions](#) because the lack of labels makes user input error more likely.

Missing Markup Language

Error List

1. The “Insert a link” *onmousedown* event is missing an *onkeydown* event.

Practical Effect

While a user with no vision at all does not benefit from the equivalent treatment of keyboard and mouse input, there are nevertheless some users who use keyboards rather than mice who would benefit from the keyboard making the same focus changes that moving the mouse does.

Guideline/Success Criterion Non-Conformance

The missing markup does not conform to Guideline [2.1 Keyboard Accessible](#) and Success Criterion [2.1.1 Keyboard](#) because the change of the image occurs only when moving the mouse to and from the selected areas and not when moving the keyboard focus to and from the selected areas.

Other Missing Attributes

1. XHTML requires both *xml:lang* and *lang* but *lang* is missing.

Practical Effect

The missing language attributes made no perceptible difference in the Committee's testing.

Guideline/Success Criterion Non-Conformance

The language errors do not conform to Guideline [3.1 Readable](#) and Success Criterion [3.1.1 Language of Page](#) because the language cannot be programmatically determined.

Conclusion

The errors on the PBworks wiki significantly impact users of assistive technology in ways that can be quantified and explained. Because these errors are beyond user control, individual users cannot bring the wiki into compliance. Unfortunately, a Committee investigation revealed that there are no pre-existing alternatives that fully comply with WCAG guidelines. Noncompliance is a widespread problem. Even the National Federation of the Blind website does not fully comply with the guidelines. The guidelines permit a statement of partial compliance if the noncomplying elements are beyond the Committee's control and this must suffice for the present.

Appendix

Screen Readers and Speech Recognition Lists

Responses to Accessible Items*

Jaws Screen Reader

- If the item is a text link, JAWS reads the link text.
- For any item with alternative text (e.g., an image), JAWS reads the alternative text.
- For any item with a label, JAWS reads the label text.

NVDA Screen Reader

- If the item is a text link, NVDA reads the link text.
- For any item with alternative text (e.g., an image), NVDA reads the alternative text.
- For any item with a label, NVDA reads the label text.

Dragon NaturallySpeaking

- If the item is a text link, the proper Dragon command is "click [name of link]".
- For any image link whose alternative text matches the image, the proper Dragon command is "click [name of link]".
- For any box with a visible label, the proper Dragon command is "click [name of label]". While this command would work even if the label was not visible to the person reading the page, most users will not look at the underlying markup language.

Windows Speech Recognition

- If the item is a text link, the proper WSR command is "click [name of link]".
- For any other item, the proper WSR command is "Show numbers [say #] ok" (if using Internet Explorer) or "Mousegrid".

Responses to Inaccessible Items*

Jaws Screen Reader

- If a link has no text, JAWS says "link."
- For any image without alternative text, JAWS reads the image source element text.
- For any item without a label, (usually an editable box) JAWS says "edit."

NVDA Screen Reader

- If a link has no text, NVDA says the anchor element text.
- For any image link without alternative text, NVDA says the anchor element text.
- For any button lacking alternative text NVDA says “button” (if using Internet Explorer) or the image source element text (if using Firefox).
- For any item without a label, (usually an editable box) NVDA says “edit.”
- For any image without alternative text, NVDA says nothing at all.

Speech Recognition

- Use the “MouseGrid” command for any otherwise not accessible link in Dragon NaturallySpeaking.**
- Use either "MouseGrid" or "Show Numbers" (if using Internet Explorer) with Windows Speech Recognition.

*Google Chrome is not an accessible browser.

**Dragon NaturallySpeaking provides number markers if the speech is ambiguous, but this functionality does not work in every browser and browser security settings can render the markers unreadable.