Accessibility Inspection

Skyline High School
https://www.a2schools.org/skyline

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Executive Summary

An accessibility inspection was conducted of the a2schools.com/skyline website, examining the website as a whole. The inspection focused on identifying any and all accessibility issues, while also pointing out strengths of the website that should be maintained.

The most significant accessibility issues identified in this evaluation include:

- **The inability for screen readers to read content.** Much of the content on the main page, as well as subpages, is completely unavailable to users with visual disabilities. Tables coded incorrectly and navigation for subpages are just a few examples of issues found within the website.

- **Javascript being used for structuring content.** Excessive Javascript plagues the site, with content being added by the Javascript rather than being part of the page. The result is that if Javascript is removed pages will not load. Furthermore, if the pages do load, users with screen readers will not be able to access the content.

- **Images and PDFs being embedded into content.** A lot of important information or information in general is on PDFs and images, which screen readers cannot read. This impacts visually disabled users the most as they will not receive any information whatsoever.

- **Users cannot skip global navigation to arrive at main content area.** Visually disabled users, utilizing keystrokes, must navigate through 64 links before arriving to global navigation, and then approximately 250 side links to reach the content area.

- **Poor structural markup for tables.** Most tables on the site read content by row and don’t inform the user that the row is being read which makes it difficult to interpret data.

These are a few of the most important issues that require correction on the Skyline website; however, there are additional usability issues that also deserve attention. The following report will include an analysis of those issues, as well as potential recommended solutions.

Terminology & Conventions Used

Different terminology is often used when referring to specific aspects of the web page. To aid in the understanding of this inspection, a few terms are used consistently to describe methods used during research and data gathering. These terms are:

Read(s): During data gathering, multiple screen readers were used to mimic what disabled users utilize when accessing websites.

Tab: Use of the ‘tab’ key on the keyboard to navigate around a webpage.

Alt/alt text: Alternative text used for images, primarily for users with visual disabilities.

Jaws Button: Main button used when using the JAWS screen reader; the ‘insert’ key on the keyboard.

Aria: A set of attributes for HTML that make web applications more accessible for people with disabilities.

Span: A tag found within code which holds content.

Mailto: A special parameter which can be inserted into the code which will allow users to click the link and then be taken to their email.

Navigation: Navigation refers to the way in which users can move around from web page to web page. Navigation could include links, search bars, or menus.

Priority Levels

The issues identified in this evaluation are grouped into three levels of priority:

High Priority: These issues are likely to impact a large number of users significantly. They should be resolved as quickly as resources allow.

Medium Priority: Issues at this priority level are also likely to affect a large number of users but generally are less disruptive to the user experience, relative to the high priority issues. If resources are available to address these issues, they should be addressed.

Low Priority: Low priority issues typically impact a small subset of the overall user base, although they may impact a larger group. Regardless of the number of users affected, these issues carry only a minor negative impact. Low priority issues are generally easy to resolve. There is less time pressure to fix low priority issues, compared to medium priority issues and especially high priority issues.

Accessibility Guidelines

Simplicity & Clarity

Simplicity and clarity refers to how a layout should be easy to understand and follow. The layout should be free of extraneous or distracting elements. Unnecessary aspects, visually unfocused area, and unclear elements should all be removed in favor of simple and concise layouts.

Suggested Changes

High Priority:

- **Remove unnecessary content on each page to allow for easier scanning.** Pages include a three column layout with a large number of links, images, and content which makes scanning pages visually and with a screen reader difficult. Removing unnecessary links and images will improve scannability and readability of content for users with visual impairments

- **Create consistent line breaks and remove empty lines on all pages.** All line breaks read as “Blank”. Screen reader is reading paragraphs of text but breaking it up by lines, causing a disruption while reading, and sometimes omitting text altogether. Removing empty line breaks will improve readability for screen readers and allow users to hear content without disruption.

Medium Priority:

- **Remove span embedded in the Twitter icon div.** When passed over by the screen reader, Twitter is read twice due to have an additional tag which reads “Twitter” to screen readers.

- **Change links which lead to PDFs to read as “page name [PDF].”** Screen reader reads entire URL (lengthy and confusing) before reading ‘Powerpoint’ program information, then users are taken to PDFs which most screen readers cannot understand. Simplifying the titles of links to being more descriptive with the added [PDF] will warn visually impaired users to avoid clicking the link.

- **Add “aria-hidden” to tags on page ‘Nutrislice interactive menu.’** Reads entire page, including hidden text that is part of the HTML and CSS and is unnecessary to users. Adding area-hidden will tell the screen reader to skip over the parts not needed to the page.

Supporting Visual & Non-Visual Navigation

Navigation should be clear and efficient for users with visual disabilities as well as for users without visual disabilities. Content should linearize well, have references to spatial relationships and should contain opportunities for quick navigation such as ‘skipping.’

Practices to Continue

- **Providing a search bar which is clearly labeled with supporting ‘magnifying glass’ image.** Providing a search which is clearly visible on each page load allows for visually impaired users to find the content they are looking for quicker. Without the need for navigation, a lot of time can be saved. Additionally, the search bar is in a standard location which users will expect.

Suggested Changes

High Priority:

- **Allow users to skip global navigation to arrive at main content area.** Visually disabled users, utilizing keystrokes, must navigate through 64 links before arriving to global navigation, and then approximately 250 side links to reach the content area. Allowing users to skip these links, and reach the content area immediately, will improve the efficiency of visually impaired users and allow them navigate to page content more quickly.

Medium Priority:

- **Embed ‘Printable Menus’ section into main content area of ‘Menus’ page.** **‘**Printable menus’ section is inserted by using Javascript, thus screen readers skip over the content. By embedding the printable menus into the main content area of the page, screen readers would be able to read the content.

Proper Text Markup & Phrasing

A lot of what makes content accessible is how things are said as well as what markup is applied to that content. Labels should be descriptive, markup should be applied to content to improve accessibility, and text should be presented at an appropriate reading level.

Practices to Continue

- **Utilizing aria-label markup.** The website does occasionally utilize aria-labels which help visually disabled users navigate through the site. ARIA attributes are highly encouraged throughout the website to help facilitate navigation for users with visual impairments.

Suggested Changes

Medium Priority:

- **Add aria-label to all employee mailto links.** When using the JAWS keystrokes for spelling out a school employees mailto email address, the screen reader does not finish reading the entire address. The user is unable to get correct spelling for email addresses and must manually spell out the email address using the arrow keystrokes. Adding aria-labels to all mailto email addresses will ensure that the screen reader reads the entire email address when users expect.

Low Priority:

- **Remove redundant breadcrumb navigation.** A majority of breadcrumb trails on the website are redundant and irrelevant to the user. For example, on the ‘Administration’ page, the listed breadcrumb links read as: “Home > Administration > Administration > Administration Home”. Since there’s only one section on the ‘Administration’ page, the extra breadcrumb links become unnecessary and irritate the user. Removing the redundant breadcrumbs will increase user efficiency.

Proper Structural Markup

Logical document structure assists adaptive technology in interpreting a document and conveying that to the user. Headings should be in a logical order, and tabular data should be accessible with headers, etc.

Suggested Changes

High Priority:

- **Improve structural markup for tables by adding scope attribute.** Most tables on the site read content by row and don't inform the user that the row is being read which makes it difficult to interpret data. By adding the scope attribute to all tables, visually impaired users will be able to differentiate between rows and columns when being read table data.

- **Remove Twitter feed from left navigation area and relocate twitter in content area.** There are two Twitter feeds on the website that users must navigate through in order to reach content areas of the site. It takes the user over 250 navigation keystrokes in order to reach the first content area then it takes 150 navigation keystrokes to reach the site footer. This issue conveys a sense of disrespect to users and makes keystroke navigation difficult. Removing the first twitter feed and relocating the other will help improve user speed and efficiency.

Medium Priority:

- **Convert the 'All Course Syllabi' Google Sheet document to a HTML page on the site and remove PDF links.** Within the submenu of 'Academics' spawns an inaccessible Google Sheets document featuring links that lead to PDF files with no alt text. By removing the Google Sheets document and turning it into a page with a list of links, screen readers will be able read back the links. All linked documents should be converted to Google docs so screen readers can read the text.

Providing Content & Context

Since many disabled users experience content in a non-visual modality, it is important that they have proper context for interpreting the information as well as access to that content. Frames should be titled with hefty descriptions, summaries provided for data tables, videos captioned, and text transcripts readily available.

Suggested Changes

High Priority:

- **Add tags and text recognition to all PDF files.** Many PDF files on the site are a static image and not accessible to screen readers. For example: The ‘menu’ link located in the ‘Our School’ submenu reads automatically with no arrow navigation. Navigation keystrokes stops the screen reader and forces the user to re-cycle through the PDF document. Adding tags and text recognition to all PDF files will ensure visually impaired users are able to hear the content of the document accurately.

Medium Priority:

- **Add descriptive alt text to all site images.** Most images on the site have poor alt text descriptions, which is unhelpful to visually impaired users. Adding proper alt text will allow users to hear a description of the image.

Low Priority:

- **Replace automatic captioning from YouTube videos with proper formatting.** While the videos, hosted by YouTube, have a closed captioning option, the captioning that is displayed is not properly formatted. The beginning of new sentences lack capitals and punctuation, making it hard for hearing impaired users to distinguish when the sentence starts or begins; effectively making the captioning a long run-on sentence. Replacing YouTube’s automatic captions with a formatted transcript of the content will help hearing impaired users understand the context of the video.

Device Independence

Requiring users to have a given input device in order to use a website ignores the fact that not all users will be able to use all input devices. Functionality should not be based on one device alone, such as a mouse. Content should be tabbable, and should be accessible for other input devices.

Suggested Changes

Medium Priority:

- **Repair ‘aria-controls’ attribute for proper keyboard navigation with JAWS.** The navigation menu located in the content area, is inaccessible to disabled users who do not utilize a mouse. JAWS prompts users to select JAWS Button + ALT + M in order “to move to an element; 1 of 6” (referring to menu options: ‘Welcome’, ‘Headlines’, ‘Enrolling’, etc). After entering the keystrokes, the scree reader says, “Failed to move to element”, which renders the user helpless and unable to navigate to those elements when using keystrokes to navigate.

Low Priority:

- **Restructure icon links spacing.** The social media icons in the footer and the top right icons in the header area, are improperly spaced and the icon link (anchor element) is not centered around the icon. This makes clicking icon links much harder for users with mobility-related impairments and can disorientate users who accidentally click off-center of an icon link. By making the links centered around the logo images, mobility impaired users won’t accidentally navigate to a new page when clicking-off center.

Graceful Degradation

Concerns how user experience holds up when technologies are disabled as well as when adaptive technologies are used. Content should be accessible without CSS/JavaScript, and the user experience should still be intact with the usage of a screen reader.

Suggested Changes

High Priority:

- **Remove almost all Javascript files and convert pages to hard-coded HTML.** Excessive Javascript plagues the site with content being added by the Javascript rather than being part of the page. The result is that if Javascript is removed pages will not load. Furthermore, if the pages do load, users with screen readers will not be able to access the content.

Medium Priority:

- **Change the CSS dependencies so that the CSS is independent of the Javascript.** The site uses both Javascript and CSS to align and structure content. When CSS is disabled, the content floats over each other. CSS is styling content generated from Javascript rather than HTML. By making the CSS dependent upon the HTML alone, the site would still be readable to users.

Allowing User Control

Control over the interface is crucial for disabled users; any aspects out of their control may derail the user experience. Animations, flickering, blinking and other page elements should be freezable. New windows should not spawn without informing the user, and text should be resizable.

Suggested Changes

High Priority:

- **Disable homepage site navigation when viewing search results.** When using the top right search bar from the homepage, a Google Custom Search results window appears on top of the homepage screen with no notification informing the user, which means visually impaired users would never know their search has finished. When navigating through the search results via keystrokes, the screenreader first reads the top navigation of the homepage (as if the Google search window isn't there), then begins reading the search results, followed by the footer links within the homepage. Disabling the homepage navigation when search results are shown and prevent confusion and irritation from visually impaired users who are just trying to navigate their search results.

Low Priority:

- **Replace pixelated logos.** While visually impaired users are able to increase the text size on the website the Skyline High School logos located in the header and footer regions appear extremely pixelated and distorted. Replacing these images with a higher resolution logo will create visual design consistency and help visually impaired users decipher the image when resizing text on a page.

Respecting the User

Many practices convey to users a sense of disrespect (abuse); those users will leave the website and not return. Timed intervals may be too short, or the color contrast may not be acceptable.

Practices to Continue

- **Keeping the site free of time-based intervals and steps.** Users with disabilities need more time to complete tasks. Ensuring users have ample time to complete a task respects users and improves the user experience.

Suggested Changes

Medium Priority:

- **Increase text size of global navigation links.** The contrast ratio of the global navigation is: 3.20:1. This ratio passed WCAG 2.1 Guidelines compliance Level AA for large text (18 point or 14 point bold) only. For AAA compliance, global navigation should have at least a 4.5:1 contrast ratio.