MICHIGAN STATE UNIVERSITY | Usability/Accessibility Research and Consulting

To: Robert Van Rennes, Big Ten Academic Alliance
From: Graham L. Pierce, MSU Usability/Accessibility Research and Consulting
Subject: Artstor High-Level Accessibility Evaluation
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MSU Usability/Accessibility Research and Consulting (MSU UARC) conducted a high-level accessibility evaluation of Artstor to evaluate its conformance with WCAG 2.0 AA Criteria. This evaluation did not include all functionality or content of the site or all WCAG 2.0 AA Success Criteria.

During this evaluation, a number of issues were found that will make the site and its content impossible to use for many individuals with disabilities, and difficult to use for some others.

Critically, keyboard traps are present on the Search Results page and in the Advanced Search lightbox, and no means to pause, stop, or hide the rotator on the Home page is present. Keyboard traps prevent keyboard-only users, including individuals with dexterity impairments and screen reader users, from using any part of an affected page beyond the element that captures focus. Rotators that cannot be stopped create significant issues for individuals with cognitive and visual impairments, as well as for screen reader users. Issues of this type can interfere with the ability to use any part of a page for some users.

In addition to the keyboard trap issues noted above, keyboard users, including screen reader users and users with dexterity impairments, will not be able to use a considerable portion of the site. Most importantly, a variety of content (including all search results) cannot be reached or operated via keyboard. Focus order is also incorrect and confusing in several places, further increasing the difficulty of using the site with a keyboard. Some interactive elements lack a sufficiently visible focus indicator, making it difficult for many keyboard-only users to effectively use them, as they cannot determine when they have reached the correct element.

Individuals with visual impairments that rely on screen readers will have additional problems. Many images have missing or inappropriate alternative text, significantly impacting users with visual impairments. Structural information (e.g., appropriate heading and list usage) is not appropriately conveyed to screen reader users, making it difficult to understand content organization. Some form inputs are not appropriately labeled and custom elements do not correctly announce themselves, making them difficult to use for those that rely on screen readers.

Other issues were found that will make it difficult for users with a variety of disabilities to effectively use the system, including images of text used in place of styled text, insufficient color contrast, insufficiently descriptive page titles, inconsistent navigation, and language changes not being properly documented in the code.

To improve access for users with disabilities, UARC recommends a full WCAG 2.0 AA evaluation and that the problems discovered be remediated.

Note: For the purposes of this high-level review, search results for "diego rivera" were used as an example of a Search Results page, and "PAISAJE DE MIXCOAC/MIXCOAC LANDSCAPE" was used as an example of an Art page.

High-Level Findings

Conformance

- Keyboard traps exist when using Firefox on the Search Results page and in the Advanced Search lightbox. [WCAG 2.0 CR 5, WCAG 2.0 SC 2.1.2]
- The rotator on the Home page cannot be paused, stopped, or hidden. [WCAG 2.0 CR 5, WCAG 2.0 SC 2.2.2]

Document Structure

- Headings are not correctly used to organize content. [WCAG 2.0 SC 1.3.1]
  - On the Home page, "Artstor" should be tagged as an h1 and "Explore Artstor" should be tagged as an h2
  - On the Home page, "Art and Multimedia" and "Questions" should be h2s, not h3s
  - On the Home page, "From Our Blog" should be an h2, not an h1
  - On the Home page, "Collection", "Classification", "Geography", "Teaching Resources", "Image Groups" should be h3s, not h2s
  - On the Search Results page, h3s should be h2s
  - On the Search Results page, "Clear" links shouldn't be headings
  - On the Art page, "PAISAJE DE MIXCOAC/MIXCOAC LANDSCAPE" (title of piece) should be tagged as an h1
  - On the Art page, "Item Details" and "File Properties" should be tagged as h2s
  - In the Advanced Search lightbox, h3s should be h2s
- Lists are not correctly used to organize content. [WCAG 2.0 SC 1.3.1]
  - On the Search Results page, filters (e.g., "Paintings", "Drawings and Watercolors", "Photographs", etc.) should be coded as a programmatic list
  - On the Art page, contents of "Item Details" and "File Properties" should be in lists (or use headings)
- Changes in language are not documented in the code (e.g., Spanish usage on the Art page). [WCAG 2.0 SC 3.1.2]

Keyboard Support

- When using Firefox, the Date text inputs on the Search Results page and in the Advanced Search lightbox are keyboard traps. [WCAG 2.0 SC 2.1.2, WCAG 2.0 CR 5]
- The "Log in" and "Register" links on all pages cannot be opened via keyboard. [WCAG 2.0 SC 2.1.1]
- On the Home and Search Results pages, "Advanced Search" link cannot be opened via keyboard. [WCAG 2.0 SC 2.1.1]
- On the Search Results page, "Clear" links cannot be opened via keyboard. [WCAG 2.0 SC 2.1.1]
- On the Search Results page, filter categories (e.g., "North America (2485)") cannot be expanded via keyboard. [WCAG 2.0 SC 2.1.1]
- On the Search Results and in the Advanced Search lightbox, the "BCE" and "CE" buttons cannot be reached via keyboard. [WCAG 2.0 SC 2.1.1]
- On the Search Results page, the "Reset" and "Apply" buttons cannot be reached via keyboard. [WCAG 2.0 SC 2.1.1]

- On the Search Results page, the search button, buttons to change search result size, "Select" button, "Others are alto interested in..." link, "View related media" link, and checkboxes for search results cannot be reached via keyboard. [WCAG 2.0 SC 2.1.1]
- On the Search Results page, individual search result links cannot be reached via keyboard (i.e., there is no way for keyboard users to reach pages for individual works of art via the search process). [WCAG 2.0 SC 2.1.1]
- In the Advanced Search lightbox, "Help" link cannot be opened via keyboard. [WCAG 2.0 SC 2.1.1]
- In the Advanced Search lightbox, dropdown values (e.g., "In Any Field") cannot be changed via keyboard. [WCAG 2.0 SC 2.1.1]
- Focus order is inappropriate for notifications at the top of the screen (they should receive focus first, not between the "Register" link and the site menu). [WCAG 2.0 SC 2.4.3]
- On the Search Results page, "Clear" links for filters receive focus immediately after "Artstor" graphic at start of page, not immediately before/after associated filter links. [WCAG 2.0 SC 2.4.3]
- On the Art page, "Add to Group", "Download", "Cite this Item", "Print Preview", "Copy", and "Report Error" receive focus after the "Register" link and before "Learn more" bars and other page content, instead of in the appropriate order. [WCAG 2.0 SC 2.4.3]
- Focus is not limited to the Advanced Search lightbox when it is open. [WCAG 2.0 SC 2.4.3]
- In the Advanced Search lightbox, the "Help" link receives focus after the "Artstor" link on the page behind the lightbox. [WCAG 2.0 SC 2.4.3]
- In the Advanced Search lightbox, users must advance focus through dozens of elements to move beyond the Classification, Collection Type, and Geography options. [WCAG 2.0 SC 2.4.3]
- Focus is not sufficiently visible on some content. [WCAG 2.0 SC 2.4.7]
  - Menu and image links on Home page
  - Checkbox, page change buttons, and Artstor buttons on Search Results page
  - Image link on Art page
  - Checkboxes in Advanced Search lightbox

Navigation
- Art page title does not mention "Artstor". [WCAG 2.0 SC 2.4.2]
- Menu is not present on Art page. [WCAG 2.0 SC 3.2.3]

Forms and Data Submission
- In the Advanced Search lightbox, text inputs are not programmatically labeled. [WCAG 2.0 SC 3.3.2]
- In the Advanced Search lightbox, grouping labels for checkboxes (e.g., "Classification") are not programmatically associated with inputs. [WCAG 2.0 SC 3.3.2]

Images
- Appropriate alternative text is not provided for visual content. [WCAG 2.0 SC 1.1.1]

- - Art on Home page (e.g., "Art Institute of Chicago" is not appropriate alternative text for "A Sunday Afternoon on the Island of La Grande Jatte" by Georges Seurat)
  - "What's new?..." graphic on Home Page
  - Art on Search Results page ("No title available" isn't appropriate; if visible text captions are sufficient, images should have null alternative text)
- On the Home page, "What's new?..." is an image of text, instead of styled text. [WCAG 2.0 SC 1.4.5]

Color and Visual Characteristics

- Grey icons on light grey background (social media icons in page footer) and light grey text on white background ("BCE"/"CE" when not selected on Search Results page and in Advanced Search lightbox; "Clear" links on Search Results page; "Creator", "Title", etc. on Art page) have insufficient contrast. [WCAG 2.0 SC 1.4.3]

Custom Elements and Dynamic Content

- On the Home page, the rotator cannot be paused, stopped, or hidden. [WCAG 2.0 SC 2.2.2, WCAG 2.0 CR 5]
- On the Search Results page, roles and values (i.e., that they expand and whether or not they are expanded or collapsed) are not provided for expanding filters (e.g., "Europe"). [WCAG 2.0 SC 4.1.2]