High-Level Accessibility Evaluation (WCAG 2.1)

Human Kinetics Journals Platform

March 30, 2023

Prepared by:

Emily Mason, UX Researcher
User-Experience Lab
CCI Research & Innovation Center (RIC)
University of Tennessee
uxl@utk.edu

Primary Point of Contact:

Amy Forrester, RIC Assistant Director
aforres4@utk.edu

TABLE OF CONTENTS

SUMMARY

This report reflects the findings of a high-level assessment of Human Kinetics Journals platform for its conformance with the W3C Web Content Accessibility Guidelines version 2.1 (WCAG 2.1).

There are very few WCAG 2.1 compliance issues with the platform, and the few that are present are programmatic in nature and should be relatively easy to fix. However, creating an accessible platform is a constantly moving goalpost, so it is important to keep in mind that there are continual updates to the WCAG standards that may require more work in the future. Below are the most critical issues to focus on correcting to improve access for all potential users of the system.

Top Findings

1. **Compatibility:** Compatibility is the top issue with the system as reviewed. This is a common problem for most websites and can be complicated to solve depending on the design and implementation of components on the site. However, unresolved, it can lead to severe issues with the site's navigability for users that require a screen reader. Please consult the WAI-ARIA Patterns Guide as a reference for the successful implementation of ARIA.

2. **Keyboard Navigability:** Overall, the platform does a good job of making the site's functionality accessible using the keyboard. However, there are several issues identified where keyboard focus is not visible to the user, which makes it very difficult to navigate using the keyboard alone.

3. **Color Contrast:** There are a few issues with color contrast and link contrast. Keep in mind that all text must meet a 4.5:1 contrast with the background of the page. Links have additional requirements for contrast. They must also meet a 4.5:1 contrast with the background and a 3:1 with surrounding text or a text decoration identifying the text as a link, such as an underline.

Best Practices

Simple corrections can make a sizable difference.

- All page content should be contained by landmarks
- Documents should have one main landmark
- Page should contain a level-one heading
- Ensure landmarks are unique
- Heading levels should only increase by one
- Headings should not be empty
- ARIA role should be appropriate for the element
- Table header text should not be empty
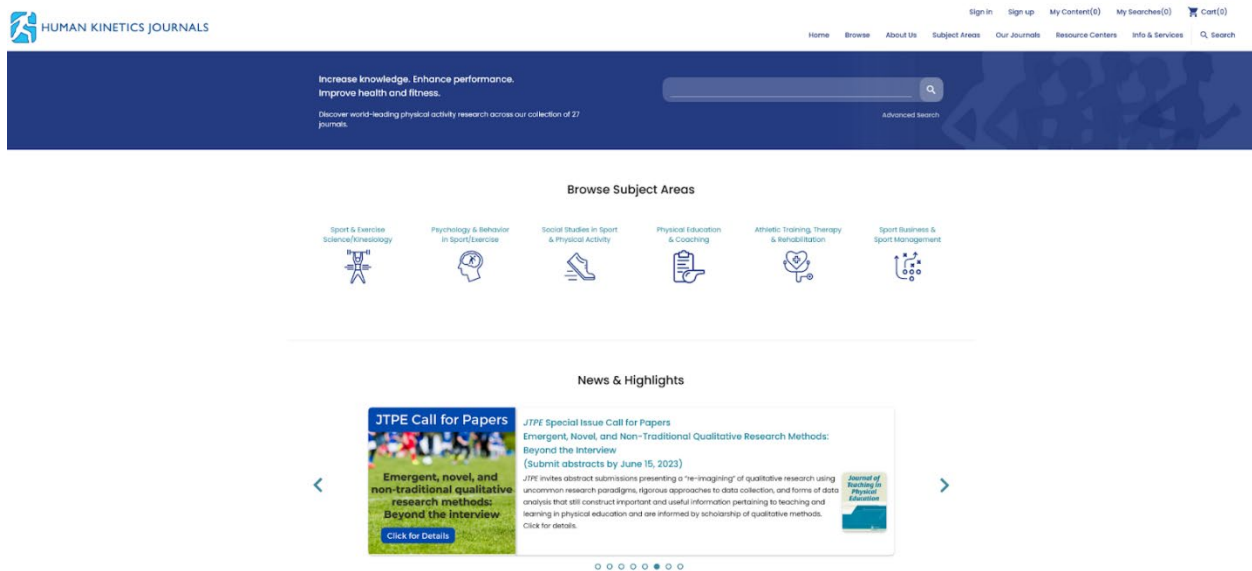
ACCESSIBILITY FINDINGS

This report was conducted against the Human Kinetics Journals platform and covers a selection of pages and features that were to be tested as a representative sample of the database's conformance to the WCAG 2.1 AA standards.

The resource was reviewed using a combination of manual and automatic review tools and assistive technologies, including the WAVE Accessibility Assessment tool, Axe Accessibility Assessment tool, WCAG Color Contrast Checker, and NVDA screen reader. All problems identified by automatic tools were double checked manually. This evaluation was performed using Firefox on Windows 10.

Below are the errors revealed during the accessibility evaluation of Human Kinetics Journals platform. Each result shows a summary of accessibility issues and reason it was flagged. Screenshots are included.

1. Initial Interface

Test Case: Test initial interface/landing page to ensure menus, sub-menus, search box, images, icons, etc. are accessible.

SC 1.3.1: Certain ARIA roles must contain particular children.
Location(s):
- <div class="slick-track" style="opacity: 1; width: 9970px; left: -1994px;" role="listbox">
- <ul class="slick-dots" style="display: block;" role="tablist">

Reason flagged:
– Element has children which are not allowed (see related nodes)
– Element has no aria-busy="true" attribute

SC 1.3.2: Content should be presented in a meaningful sequence.
Location(s):
– *<div aria-live="polite" class="slick-list draggable">*

Reason flagged:
– The aria-live region on this carousel is causing a serious issue by interrupting the flow of content for screen-reader users, making it difficult to determine where I am on the page.

SC 1.4.3: Elements must have sufficient color contrast.
Location(s): *multiple instances on this page*

Reason flagged:
– Element has insufficient color contrast of 4.17 (foreground color: #24879e, background color: #ffffff, font size: 10.5pt (14px), font weight: normal). Expected contrast ratio of 4.5:1
– Element has insufficient color contrast of 3 (foreground color: #1d9bf0, background color: #ffffff, font size: 11.3pt (15px), font weight: normal). Expected contrast ratio of 4.5:1

SC 2.4.7: Keyboard focus must be visible.
Location(s): *multiple instances on this page*

Reason flagged:
– When navigating using the keyboard, there several places on this page where the keyboard focus goes somewhere that can't be seen visually, making it very difficult to navigate the page.

SC 2.4.4: Links must have discernible text.
Location(s): *multiple instances on this page*

Reason flagged:
– Element does not have text that is visible to screen readers
– aria-label attribute does not exist or is empty
– aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty
– Element has no title attribute
– Element is in tab order and does not have accessible text

UXL

THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

SC 4.1.2: Elements must only use allowed ARIA attributes.
Location(s):
- \<div data-js="appbarHeader" class="site-header" id="header" aria-expanded="false"\>
- \<a tabindex="0" class="nav-toggle site-nav-toggle ico-menu js-site-nav-toggle c-IconButton c-IconButton--primary c-Icon c-Icon--before c-Icon--menu display@lg-none" data-popover-anchor="contentNavigation" aria-expanded="false"\>\<span\>Menu\</span\>\</a\>
- \<li aria-hidden="false" role="presentation" aria-selected="false" aria-controls="navigation01" id="slick-slide01" class="slick-active"\>\<button type="button" data-role="none" role="button" aria-required="false" tabindex="0"\>2\</button\>\</li\>
- \<button type="button" data-role="none" role="button" aria-required="false" tabindex="0"\>2\</button\>

Reason flagged:
- ARIA attribute is not allowed: aria-expanded="false".

SC 4.1.2: ARIA hidden element must not be focusable or contain focusable elements.
Location(s):
- \<button type="button" data-role="none" role="button" aria-required="false" tabindex="0"\>1\</button\>
- \<button type="button" data-role="none" role="button" aria-required="false" tabindex="0"\>3\</button\>
- \<button type="button" data-role="none" role="button" aria-required="false" tabindex="0"\>4\</button\>
- \<button type="button" data-role="none" role="button" aria-required="false" tabindex="0"\>5\</button\>
- \<button type="button" data-role="none" role="button" aria-required="false" tabindex="0"\>6\</button\>
- \<button type="button" data-role="none" role="button" aria-required="false" tabindex="0"\>7\</button\>
- \<button type="button" data-role="none" role="button" aria-required="false" tabindex="0"\>8\</button\>

Reason flagged:
- Focusable content should be disabled or be removed from the DOM.

SC 4.1.2: ARIA input fields must have an accessible name.
Location(s):
- *\<div class="slick-track" style="opacity: 1; width: 9970px; left: -1994px;" role="listbox"\>*

Reason flagged:
- aria-label attribute does not exist or is empty
- aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty

- Element has no title attribute

SC 4.1.2: Buttons must have discernible text.
Location(s):
- <button class="display@lg-none c-IconButton c-IconButton--search" data-js="searchButton" type="button"></button>
- <button name="searchBtn" class="c-IconButton c-IconButton--contrast c-IconButton--search color-white" id="home-searchBtn" type="submit" style="background-color: rgba(255,255,255,0.2);border-radius: 15px;"></button>

  Reason flagged:
- Element does not have inner text that is visible to screen readers
- aria-label attribute does not exist or is empty
- aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty
- Element has no title attribute
- Element's default semantics were not overridden with role="none" or role="presentation"

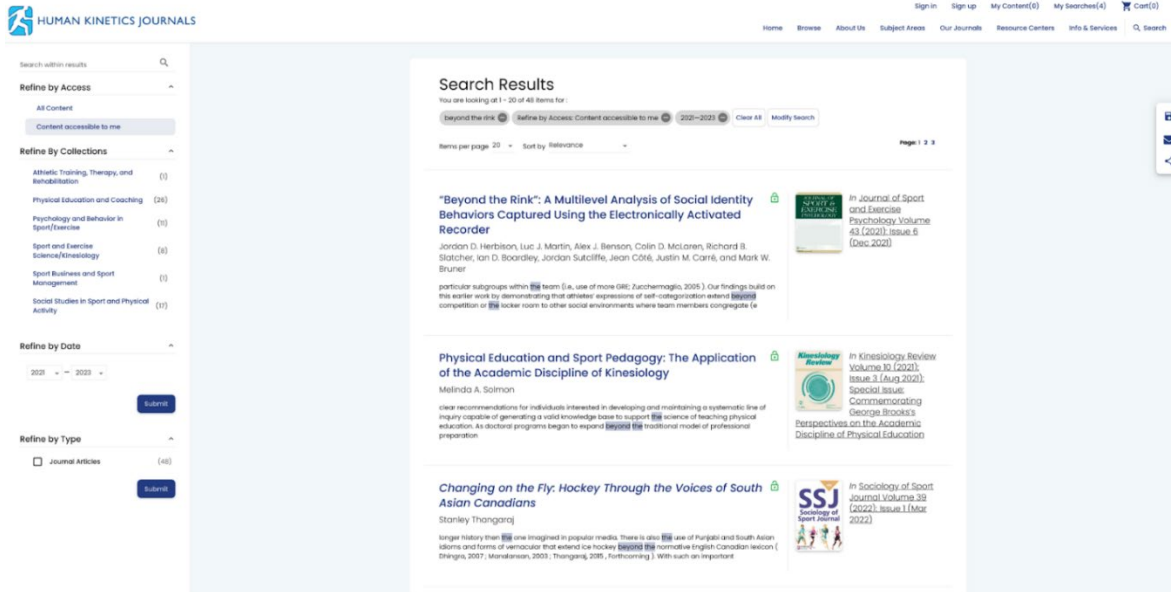**SC 4.1.2:** Buttons must have discernible text.
Location(s):
- <a href="https://journals-humankinetics-com.utk.idm.oclc.org/fileasset/JTPE/2022_JTPE_Outstanding_reviewer.png" target="_blank" tabindex="0">

  Reason flagged:
- Element has focusable descendants

2. Search Results

Test Case: From the initial landing page, conduct a search for: "beyond the rink". Test search results page, including filters. Under filters, select "Content accessible to me", under Refine by Date choose "2021" in the From: drop-down menu and "2023" in the To: drop-down menu, and under Refine by Type check the box next to "Journal Articles". At the top of page, in the Items per page menu choose "20".

SC 1.3.2: Content should be presented in a meaningful sequence.
Location(s):

- <div aria-live="polite" class="slick-list draggable">

    Reason flagged:

- This is concerning the toolbar on the right-hand side of the page; Focus moves to the toolbar after the filters panel, breaking the logical flow of content. Also, when trying to move focus back to the filters panel from the toolbar, it skips to the content info area.

SC 1.4.1: Links must be distinguishable without relying on color.
Location(s):

- ... Show More

    Reason flagged:

- The link has insufficient color contrast of 1.54:1 with the surrounding text. (Minimum contrast is 3:1, link text: #243b81, surrounding text: #212121)
- The link has no styling (such as underline) to distinguish it from the surrounding text

SC 1.4.3: Elements must have sufficient color contrast.
Location(s):

- ... Show More

    Reason flagged:

- The link has insufficient color contrast of 1.54:1 with the surrounding text. (Minimum contrast is 3:1, link text: #243b81, surrounding text: #212121)
- The link has no styling (such as underline) to distinguish it from the surrounding text

SC 2.4.7: Keyboard focus must be visible.
Location(s): *This issue has multiple instances on this page.*

    Reason flagged:
– Keyboard focus for several of the dropdowns and checkboxes on this page isn't visible, making it unclear that I have currently selected that element.

SC 4.1.1: IDs used in ARIA and labels must be unique.
Location(s):
– <select onchange="this.form.submit();" class="form-control countList c-Select c-Select--native mb-1" id="pageSize" name="pageSize"><option selected="selected" value="10">10</option><option value="20">20</option><option value="50">50</option></select>
– <select onchange="this.form.submit();" class="form-control sortList c-Select c-Select--native mb-1" id="sortby" name="sortby">

    Reason flagged:
– aria-label attribute does not exist or is empty
– aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty

SC 4.1.1: ID attribute value must be unique.
Location(s):
– <div data-component="ActionBar" class="c-ActionBar pageLinks c-ActionBar c-ActionBar--standalone c-ActionBar--anchored-page-right" id="pageLinks">

    Reason flagged:
– Document has multiple static elements with the same id attribute: pageLinks

SC 4.1.2: Elements must only use allowed ARIA attributes.
Location(s):
– <div data-js="appbarHeader" class="site-header" id="header" aria-expanded="false">
– Menu

    Reason flagged:
– ARIA attribute is not allowed: aria-expanded="false".

SC 4.1.2: Buttons must have discernible text.
Location(s):
– <button class="display@lg-none c-IconButton c-IconButton--search" data-js="searchButton" type="button"></button>

- <button class="display@lg-none mb-2 ml-2 c-IconButton c-IconButton--filterList" type="button"></button>

   Reason flagged:
   - Element does not have inner text that is visible to screen readers
   - aria-label attribute does not exist or is empty
   - aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty
   - Element has no title attribute
   - Element's default semantics were not overridden with role="none" or role="presentation"

SC 4.1.2: Select element must have an accessible name.
Location(s):
   - <select data-js="refineByDateSelectStartDate" value="fromDate" name="fromDate" class="c-Select c-Select--native c-Select--native--variant--outlined mt-0 pl-2">
   - <select data-js="refineByDateSelectEndDate" value="toDate" name="toDate" class="c-Select c-Select--native c-Select--native--variant--outlined mt-0 pl-2">

   Reason flagged:
   - Form element does not have an implicit (wrapped) <label>
   - Form element does not have an explicit <label>
   - aria-label attribute does not exist or is empty
   - aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty
   - Element has no title attribute
   - Element's default semantics were not overridden with role="none" or role="presentation"

3. Individual Results

Test Case: lick on the article title "'Beyond the Rink': A Multilevel Analysis of Social Identity Behaviors Captured Using the Electronically Activated Recorder":
   o Test an individual article/search result landing page.
   o Test opening and collapsing the two menus on the right of the page.
   o Test the related articles, article sections, references, article metrics, PubMed, Google Scholar links in the menu furthest on the right.
   o Test the download PDF button on the main page and the headings and tables in the HTML version of the article.
   o Test the save, citation, and email links to the right of the main page.

SC 1.3.1: Elements must have sufficient color contrast.
Location(s): 1

- *<ul class="c-List">*

   Reason flagged:
- List element has direct children that are not allowed: br, a

SC 1.4.1: Links must be distinguishable without relying on color.
Location(s): *This issue has multiple instances on this page.*

   Reason flagged:
- The link has insufficient color contrast of 1.54:1 with the surrounding text. (Minimum contrast is 3:1, link text: #243b81, surrounding text: #212121)
- The link has no styling (such as underline) to distinguish it from the surrounding text\

SC 1.4.3: Elements must have sufficient color contrast.
Location(s): *This issue has multiple instances on this page.*

   Reason flagged:
- Element has insufficient color contrast of 2.21 (foreground color: #a2b1b6, background color: #ffffff, font size: 9.8pt (13px), font weight: normal). Expected contrast ratio of 4.5:1
- Element has insufficient color contrast of 1.49 (foreground color: #cad5d9, background color: #ffffff, font size: 10.5pt (14px), font weight: normal). Expected contrast ratio of 4.5:1

SC 2.1.1: All functionality must be keyboard accessible

Location(s):

– Volume 43: Issue 6

Reason flagged:

– This dropdown is skipped in the keyboard navigation.

SC 2.4.7: Keyboard focus must be visible.
Location(s): *This issue has multiple instances on this page.*

Reason flagged:

– This is related to the "Related Articles" section in the right-hand toolbar; keyboard focus is not visible on the related article links.

SC 4.1.1: ID attribute value must be unique.
Location(s):

– <div data-component="ActionBar" class="c-ActionBar pageLinks" id="pageLinks">
– <div id="f1" class="figure">

Reason flagged:

– Document has multiple static elements with the same id attribute: pageLinks

SC 4.1.2: Elements must only use allowed ARIA attributes.
Location(s):

– <div data-js="appbarHeader" class="site-header" id="header" aria-expanded="false">
– Menu

Reason flagged:

– ARIA attribute is not allowed: aria-expanded="false".

SC 4.1.2: Certain ARIA roles must contain particular children.
Location(s):

– <div class="container-body   c-Card c-Container--constrained ui-accordion ui-widget ui-helper-reset" role="tablist">

Reason flagged:

– Element has children which are not allowed
– Element has no aria-busy="true" attribute

SC 4.1.2: Buttons must have discernible text.
Location(s):

– <button class="display@lg-none c-IconButton c-IconButton--search" data-js="searchButton" type="button"></button>

Reason flagged:
- Element does not have inner text that is visible to screen readers
- aria-label attribute does not exist or is empty
- aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty
- Element has no title attribute
- Element's default semantics were not overridden with role="none" or role="presentation"

SC 4.1.2: Interactive controls must not be nested.
Location(s):
- <li class="c-Tabs__tab ui-tabs-tab ui-corner-top ui-state-default ui-tab" role="tab" tabindex="-1" aria-controls="container-18169-item-18162" aria-labelledby="ui-id-1" aria-selected="false" aria-expanded="false">
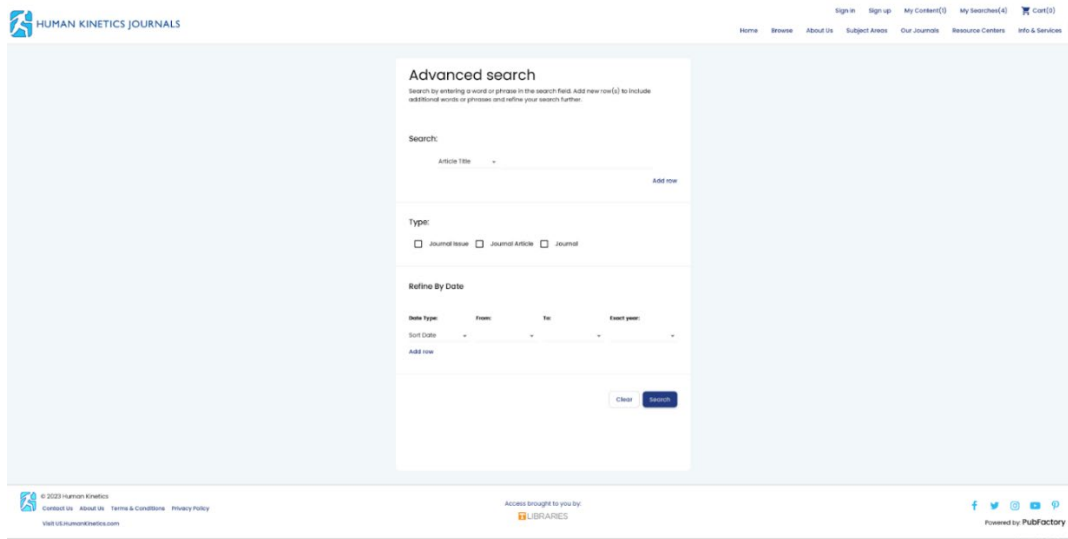
Reason flagged:
- Using a negative tabindex on an element inside an interactive control does not prevent assistive technologies from focusing the element (even with 'aria-hidden=true')

Note: While not a violation, the checkboxes in the "References" section of the right-hand panel shouldn't contain focusable elements. When tabbing, focus should move between the group of checkboxes and not further into the input to activate a link. This affects the usability of the site and the speed at which a user can navigate a list of checkboxes. Consider an alternative design here if possible.

4. Advanced Search

Test Case: Test Advanced Search page: https://journals-humankinetics-com.utk.idm.oclc.org/advancedsearch

SC 2.4.7: Keyboard focus must be visible.
Location(s): *This issue has multiple instances on this page.*

Reason flagged:
‒ Keyboard focus for several of the dropdowns and checkboxes on this page isn't visible, making it unclear that I have currently selected that element.

SC 4.1.2: Elements must only use allowed ARIA attributes.
Location(s):
‒ Menu

Reason flagged:
‒ ARIA attribute is not allowed: aria-expanded="false".