High–level accessibility review – BTAA
(Jove Science Education Platform)

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November 2, 2021

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Contents

Jove Science Education Platform

Summary

Top 3 problems for the Jove Science Education Platform

This assessment covers portions of the Jove Science Education Platform. The assessment revealed serious problems with screen reader compatibility, resulting in screen reader users missing critical information needed to understand content and operate features.

1. **Name, Role, Value –** Several controls on the site are only mouse accessible, and cannot be operated with a keyboard due to missing roles, programmatic names for the controls and required states. Additionally, several links are missing an href attribute, resulting in them being missed by Assistive Technology.
2. **Contrast –** Several interactive controls, text and link text is low in contrast.
3. **Images –** On all 'results' images are linked as a part of the result set but the images and the links are missing a label or alternative description.

Accessibility findings

Project wide issues

The issues presented in this section were identified in multiple pages and are recorded here to avoid repetition. These are applicable to each screen. Due to particularities, similar issues are still reported on a page per page basis, where applicable.

Automated findings using Axe

Issues found through automated testing come from the Axe plugin, an open source accessibility testing tool that is available for Chrome, Firefox and Edge. Details here: https://www.deque.com/products/axe/.

1. **SC 4.1.1 A –** There are elements on the page with IDs that are duplicated: jove-style-slick-css, mktb-title, mktb-description, mktb-action
2. **SC 3.1.1 A** – All pages on the site do not have their primary language programmatically defined using the lang attribute and a valid value.
3. **SC 1.1.1 A** – Many decorative images in the header are missing an empty alt attribute.
4. **SC 1.4.3 AA** – The 'Faculty Resource Center' text is low in contrast at 4.23:1 contrast ratio.
5. **SC 1.4.3 AA** – The 'Access provided via' text is low in contrast at 4.49:1 contrast ratio.
6. **SC 1.4.3 AA** – All instances of white text on light blue background in the footer is low in contrast at 3.13:1 contrast ratio.
7. **SC 1.4.3 AA** – All instances of white text on light green background in the cookie banner is low in contrast at 2.15:1 contrast ratio.
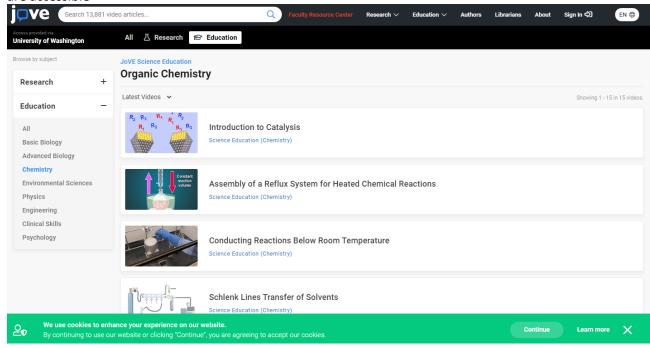
Additional manual findings using NVDA screen reader

1. **SC 1.4.12 AA** – When text spacing rules are applied, the content in the cookie banner is not completely available because the banner does not accommodate the spacing and the white text escapes.
2. **SC 1.4.12 AA** – When text spacing rules are applied, the header content does not respect the line and letter spacing changes.
3. **SC 1.4.3 AA** – The placeholder 'Search 13,881 video articles..' is low in contrast at 3.7:1 contrast ratio.
4. **SC 1.4.11 AA** – The 'up arrow' (back to top) and 'X' (close cookie banner) icons are low in contrast against an adjacent color. A 2.2:1 contrast ratio was observed.
5. **SC 2.4.1 A** – The 'skip to content' link does not actually skip common navigation content
6. **SC 4.1.2 A** – The 'Research', 'Education' and 'EN' (language picker) controls are missing an href.

7. **SC 4.1.2 A** – The 'Research', 'Education' and 'EN' (language picker) controls are missing their expanded / collapsed state.
8. **SC 4.1.2 A** – The 'Research', 'Education' and 'EN' (language picker) controls are missing a programmatic indication that they contain a submenu.
9. **SC 4.1.2 A** – The 'Education' control is visually 'pressed' but is missing a programmatic indication of the same.
10. **SC 4.1.2 A** – The 'Share on WeChat' link is missing an href attribute.
11. **SC 2.4.7 AA** – The 'Continue' button in the cookie area is missing a visible focus indicator.
12. **SC 2.2.1 A** – The application times out without warning and without providing the user an accessible method to extend the timeout.

1. Jove Science Education Landing Page

Source: https://www-jove-com.offcampus.lib.washington.edu/education/17/organic-chemistry

Test case: Test the initial interface/landing page to ensure menus, search box, images, icons, sort by, etc. are accessible

Automated findings using Axe
1. **SC 1.3.1 A** – The 'Latest Videos' filter drop down is missing a programmatic label.
2. **SC 1.1.1 A** – All linked images in the results listing are missing an alternative description.
3. **SC 4.1.2 A** – All image links to the left of each search result item is missing a programmatic name.
4. **SC 1.4.3 AA** – All instances of grey text (#7C7C7C) on light grey background (#F8F8F8) is low in contrast at 3.93:1 contrast ratio.
5. **SC 1.4.3 AA** – The 'JoVE Science Education' text is low in contrast at 2.94:1 contrast ratio.
6. **SC 1.4.3 AA** – All grey text in the left-hand filters e.g. "Psychology" is low in contrast at 4.34:1 contrast ratio.
7. **SC 1.4.3 AA** – The 'current' left-hand filter e.g. "Chemistry" is low in contrast at 2.87:1 contrast ratio.

Additional manual findings using NVDA screen reader
1. **SC 4.1.2 A** – The 'Research' and 'Education' left-hand filter categories are missing a programmatic role that indicates they are interactive.
2. **SC 4.1.2 A** – The 'Research' and 'Education' left-hand filter categories are missing their expanded/collapsed state.
3. **SC 1.4.1 A** – The 'Chemistry' link is visually identified as the 'current' page but this information is not programmatically provided.
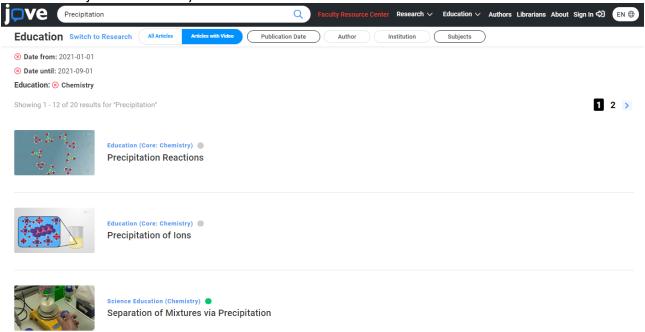4. **SC 2.4.7 AA** – The 'Latest Videos' filter drop down is missing a visible focus indicator.

2. Jove Science Education Search Results

Source: https://global-Jove Science Education-
com.offcampus.lib.washington.edu/ha/default.aspx#./!?&_suid=16320811030310335378153705472

Test case: Use the Search box at the top of the page to search for Precipitation. Using the Filter Results menu to:
- Limit the Publication Date from 01/01/2021 to 09/01/2021
- Limit the Subjects to Chemistry in the Education column of the menu.

Automated findings using Axe
1. **SC 1.1.1 A** – All linked images in the results listing are missing an alternative description.
2. **SC 4.1.2 A** – All image links to the left of each search result item is missing a programmatic name.
3. **SC 4.1.2 A** – The 'next' pagination link is missing accessible link text.
4. **SC 1.4.3 AA** – The 'Switch to Research' text is low in contrast at 3.13:1 contrast ratio.
5. **SC 1.4.3 AA** – All instances of white text on light blue background (or inverted colors) is low in contrast at 3.13:1 and 3.23:1 contrast ratios.
6. **SC 1.4.3 AA** – All instances of light grey text against white background is low in contrast at 2.74:1 contrast ratio.

Additional manual findings using NVDA screen reader
1. **SC 1.3.1 A** – The 'next' pagination icon is informative but is implemented as CSS pseudo-content.
2. **SC 1.4.11 AA** – The informative 'green dots' are low in contrast against an adjacent color at 2.2:1 contrast ratio.
3. **SC 1.4.11 AA** – The informative 'grey dots' are low in contrast against an adjacent color at 1.6:1 contrast ratio.
4. **SC 1.4.11 AA** – The informative 'next' pagination icon is low in contrast against an adjacent color at 2.9:1 contrast ratio.
5. **SC 1.4.11 AA** – Unchecked 'subject filter' checkboxes are low in contrast in their default, unchecked state against an adjacent color. The visible boundary has a 1.2:1 contrast ratio.
6. **SC 1.3.1 A** – The 'Education' text is inappropriately identified as a heading 4, which misrepresents the structure of the page as the search results are marked as heading 2.
7. **SC 2.4.7 AA** – The 'Publication Date', 'Author', 'Institution', 'Subjects' controls do not receive a visible
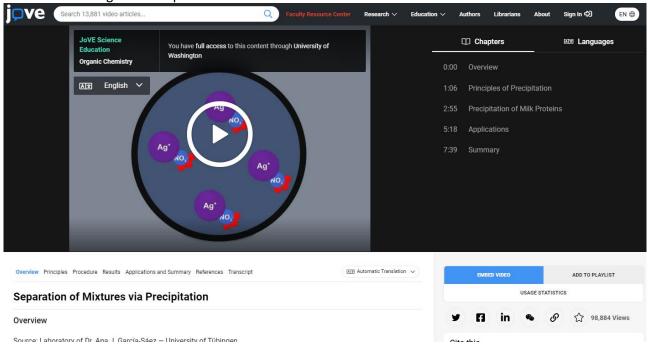
focus indicator.

8. **SC 1.3.2 A** – When the date picker function is added, the code is inserted at the end of the DOM, which results in a keyboard user not being able to encounter the function.

9. **SC 4.1.2 A** – The 'Prev', 'Next' and 'Clear' links in the date picker are missing an href attribute.

10. **SC 1.3.1 A** – The 'From' and 'Until' input labels in the date picker are not associated with their associated input fields.

11. **SC 2.4.7 AA** – The checkboxes in the 'subject filter' area do not receive visible focus indicator.

12. **SC 1.3.1 A** – The groups of checkboxes in the 'subject filter' area are not programmatically associated with their respective group labels.

13. **SC 4.1.3 AA** – When filters are applied the 'in progress' status message is not automatically announced by AT.

14. **SC 4.1.2 A** – The 'Switch to Research' control is missing a programmatic role.

15. **SC 4.1.2 A** – The 'All Articles' and 'Articles with Video' links are missing an href attribute.

16. **SC 4.1.2 A** – The 'Articles with Video' link visually appears to be 'pressed' but this same state is not programmatically available.

17. **SC 4.1.2 A** – The 'remove [filter name]' controls are missing a programmatic role and name.

18. **SC 2.1.1 A** – The 'remove [filter name]' functions rely on device-specific event handlers and are not keyboard accessible.

19. **SC 1.3.1 A** – The 'remove [filter name]' functions are implemented as CSS pseudo-content without an accessible alternative.

20. **SC 1.3.1 A** – The informative 'grey dots' and 'green dots' that indicate 'no access' or 'has access' is implemented as CSS pseudo-content without an accessible alternative.

3. Jove Science Education Item Page

Source: https://www-jove-com.offcampus.lib.washington.edu/v/5558/separation-of-mixtures-via-precipitation

Test case: Select the result for Separation of Mixtures via Precipitation
Test the ability to view the video and text and navigate through both using the chapter headings for the video and headings at the top of the text

Automated findings using Axe

1. **SC 1.4.3 AA** – All instances of white text on light blue background (or inverted colors) is low in contrast at 3.13:1 and 3.23:1 contrast ratios.
2. **SC 4.1.1 A** – Elements on the page are using duplicated IDs: translation_menu
3. **SC 2.4.1 A** – The 'views' IFRAME is missing a title attribute and value.
4. **SC 1.3.1 A** – The page contains two TEXTAREA inputs that do not have a programmatic label.
5. **SC 4.1.2 A** – The 'Twitter', 'Facebook' and 'LinkedIn' links are missing a programmatic name.
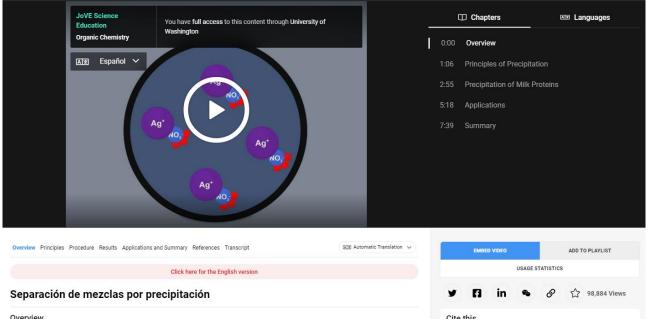
Additional manual findings using NVDA screen reader
Not completed due to Insufficient time

4. Jove Science Education Item Page - Spanish

Source: https://www-jove-com.offcampus.lib.washington.edu/v/5558?language=Spanish
Test case: Use the Automatic Translation menu at the top of the text to translate the text into Español.

Automated findings using Axe

1. **SC 1.4.3 AA** – The 'Click here for the English version' text is low in contrast with a 4.2:1 contrast ratio.
2. **SC 1.4.3 AA** – The 'here for the English version' text is low in contrast with a 2.82:1 contrast ratio.
3. **SC 1.4.3 AA** – All instances of white text on light blue background (or inverted colors) is low in contrast at 3.13:1 and 3.23:1 contrast ratios.
4. **SC 4.1.1 A** – Elements on the page are using duplicated IDs: translation_menu
5. **SC 2.4.1 A** – The 'views' IFRAME is missing a title attribute and value.
6. **SC 1.3.1 A** – The page contains two TEXTAREA inputs that do not have a programmatic label.
7. **SC 4.1.2 A** – The 'Twitter', 'Facebook' and 'LinkedIn' links are missing a programmatic name.

Additional manual findings using NVDA screen reader
Not completed due to Insufficient time