

Accessibility and Usability

Tim Hostetler and the ADS Team

ADS Users Group Meeting, 19-20 Nov. 2020



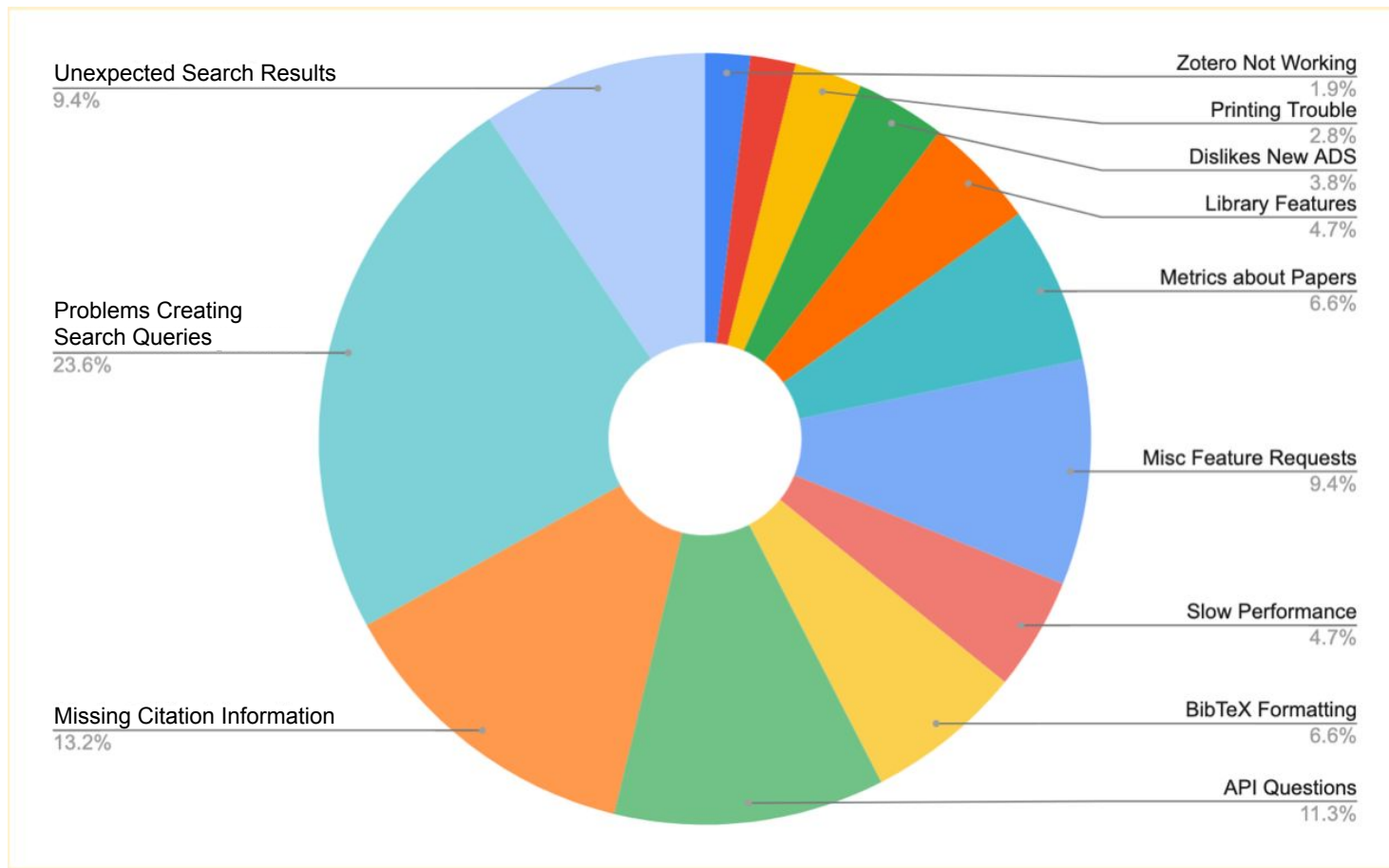
Expert Assessment and Audit

- Contracted Harvard Web Publishing
 - UX Consultants specializing in academic web apps
 - Web accessibility and usability analysis
 - Provides status reports
 - Solutions to arrive at our goals
 - Suggestions and concepts based on user feedback and own expertise
- A good fit
 - Small team that spent a good deal of time to understand the application
 - Thoughtful suggestions based on thorough user feedback analysis
 - Provided detailed reports defending their suggestions/critiques

User Feedback

- Analysis of 106 email threads from users from Oct 2019 - Mar 2020
 - Bug reports, complaints, questions, etc.
 - Key observations:
 - Users tend to only contact support about specific questions/problems
 - i.e. a particular query or bug while perform a certain action
 - Some common themes can be seen indicating potential pain points
 - Provided areas to explore during usability testing

User Feedback



Analysis of User Feedback via emails

- Identified early usability pain points, addressed most of them
 - Difficulty with syntax for complex queries
 - Not always clear where to find data or metrics about specific results
 - Finding and maintaining accurate citation information can be difficult
 - Lack of understanding why there might be discrepancies between metadata in ADS and publishing sources
 - Unexpected results when searching for authors with common names, names with accents, and/or uncommon spellings (Mikal vs. Michael)
 - Lack of clarity about all the features available within the system
 - Changes in the export of BibTex citations
 - Occasionally, ADS has slow performance

Usability Study

- Usability study and report
 - 20 international participants
 - Users provided with a series of tasks, simple to complex
- Research questions
 - How is the Astrophysics Data System used as a research tool?
 - How usable is the flow?
 - How easy is it to find things?
 - How do people discover new (and old) features?
 - Is it accessible to users of assistive technology?

Usability Study

- How is the ADS used as a research tool?
 - Used by the majority of the participants more than once a week
 - User types: students, librarians, and power users
- How usable is the flow?
 - Quick-fields and query samples used frequently
 - 30% of participants utilized the autocomplete feature
 - Flow is less smooth for classic form users, but it is preferred by some
 - Some users started a query using classic form but refined it using the quick-fields and other modern form features later
 - 60% were modern form users, with some sticking to classic form because they found it more user friendly
 - Filters don't auto-clear; 20% of users didn't realize they had old filters applied when performing a new search
 - 25% of users were confused about the state of the filters while refining

Usability Study

- How easy is it to find things?
 - Users from all categories preferred ADS over competitors (i.e. Google Scholar)
 - 90% of participants used specific form fields for searching
 - About 50% knew how to use the Explore menu features
 - Most users were comfortable with the export tool
- How do people discover new (and old) features?
 - Some users discover features at the beginning of sessions
 - Several users discovering the paper form for the first time
 - Users discover features as needed
 - 35% attempted to guess the boolean search syntax
 - 30% utilized the help pages, with only one saying they frequented it
 - Those who used them, found the help pages invaluable

Usability Study

- Recommendations (highlights)
 - Make applied filters more prominent
 - Where possible provide shortcuts vs special syntax
 - Provide “did you mean...” feature for misspelled author names
 - Some text was confusing, i.e. “co-reads” and “Switch to basic HTML”
- Wireframes
 - Provided examples of two pages where simple changes could improve usability
- Takeaways
 - Review internally the viability of certain suggestions
 - Utilize new capabilities like A/B testing to confirm usability
 - What can we learn from these insights to continue improvements elsewhere?

Web Accessibility Overview

- Importance of web accessibility
 - Strive to be as open and accessible to as many users as possible
 - ~15% of users have a disability which affects their ability to access information on the web
- WCAG 2.0
 - Web Content Accessibility Guidelines
 - Our goal is to meet this standard

Sources:

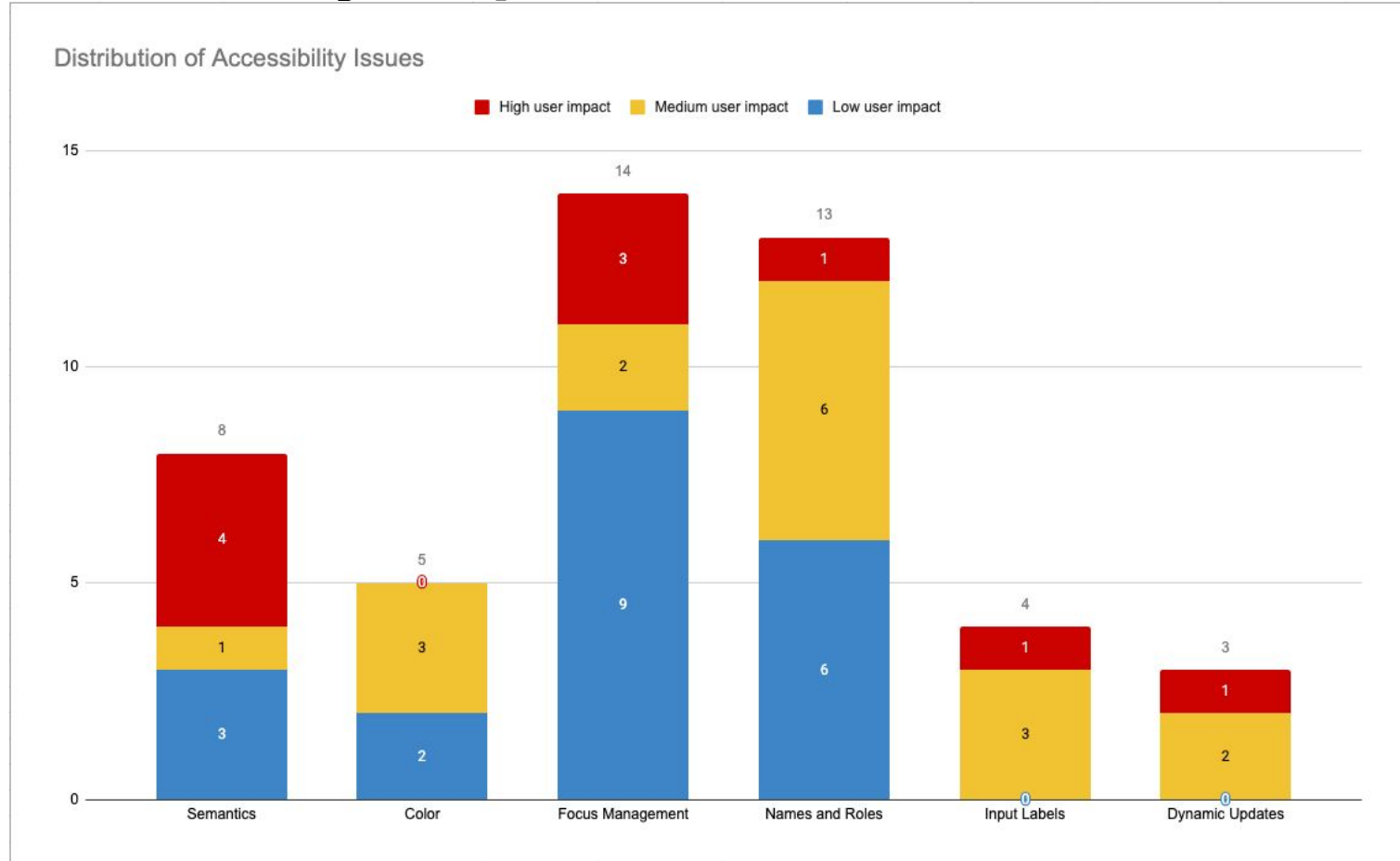
<https://www.interactiveaccessibility.com/accessibility-statistics>

<https://www.w3.org/WAI/WCAG21/quickref/>

Accessibility Report

- Areas
 - Semantics
 - Color
 - Focus management
 - Names and roles
 - Input labels
 - Dynamic updates
- Audit
 - Utilized screen-readers VoiceOver (Mac) and NVDA (Windows)
 - Provided detailed descriptions of each area, and examples
 - Audit report enumerated many issues, rating them low to high
 - Team also offered support, as needed, during our development

Accessibility Report



Work to do

- **Prioritized accessibility issues**
 - Some high priority bugs have been addressed
 - Modern form search examples visual indicators, better tab ordering
 - Increased contrast in landing pages and results page
 - Pages have proper tab order, better keyboard navigation
 - Additional fixes are harder to implement because they require in-depth testing and underlying changes in the application
 - Gradual improvements planned as technical debt is paid off (refactors)

Questions?

- [Links](#)
 - Reports available upon request:
 - [User feedback report](#)
 - [Usability test report](#)
 - [Accessibility audit report](#)
 - Miscellaneous
 - [Harvard web publishing](#)
 - [Accessibility statistics](#)
 - [WCAG reference](#)