Accessibility Testing of RBdigital

Conducted by the National Network for Equitable Library Service (NNELS)

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The opinions and interpretations in this publication are those of the authors and do not necessarily reflect those of the Government of Canada.

About NNELS

The National Network for Equitable Library Service (NNELS) is a digital public library of ebooks for Canadians with print disabilities1, and an advocate for an accessible and equitable reading ecosystem for Canadians with print disabilities. NNELS supports principles of openness, inclusion, and choice. NNELS is hosted by the BC Libraries Cooperative, a community service not-for-profit cooperative and a national leader in information and technology services.

Our team of Accessibility Testers has expert knowledge in the areas of accessibility testing, analysis, software development, and leadership. The team works to educate and advise publishers, technology vendors, and public libraries on best practices for accessibility. Our testers have lived experience with a range of print disabilities, including blindness, low vision, and learning disabilities.

Introduction

The RBdigital platform provides access to books in electronic audio and text format, as well as electronic magazines. Users first authenticate using their school or local library, attaching this to an RBdigital account which will enable them to search and download content.

1 Print disabilities are defined by Canada's Copyright Act and include visual, mobility, or comprehension impairments such as dyslexia.

The present report specifically discusses the revised RBdigital website, including the use of the Audio Eye tool and its effect on the user experience. NNELS has tested mobile and desktop RBdigital apps for Windows previously and reported on their accessibility, but with the acquisition of RBdigital by OverDrive in mid-2020, development of the mobile apps is not expected to continue.

Introduction to Assistive Technology

All mainstream operating systems include built-in screen readers (Narrator on Windows, VoiceOver on Apple devices, and TalkBack on Android) that read the contents of the screen out loud, allowing users with visual disabilities to browse apps and websites and accomplish many other tasks with ease. Keyboard commands and custom touch gestures provide a flexible way for a user to find and interact with the controls on-screen. Windows also has alternative screen reading software available, most notably a commercial option called JAWS (Job Access with Speech) and a free and open-source option called NVDA (Non-Visual Desktop Access). Text spoken by a screen reader can be sent to a refreshable braille device. Mainstream operating systems are also equipped with user interface magnification, large text options, and high-contrast viewing mode to assist people with low vision.

To ensure usability and accessibility of an application by people with print disabilities, all functions and controls must be accessible using assistive technologies (including screen readers, screen magnification software, and switches and voice controls for people with mobility impairments). The DAISY Consortium explains that the basic assumption of accessibility evaluations is that reading systems "should support reading with eyes, ears, and fingers." (DAISY Consortium, 2017). It should be possible for users to read the content of the document by:

- Reading the text with screen readers or self-voicing text-to-speech (TTS) functions
- Adjusting the display including font size, alignment, and color contrast, or combination of some or all of these options
- Reading the text with a refreshable braille display
- Selecting font types designed for persons with dyslexia or use software designed for people with learning disabilities
- Reading with the app's built-in read aloud functions

Accessibility Performance

This website was tested in multiple desktop web browsers and the results were found to be the same, with only small layout changes which did not impact the user experience.

Despite the issues described below, it is apparent that significant work has been done to improve screen-reader compatibility with the website: All buttons have clear labels, and the structure of the page is consistent and makes great use of headings and landmarks. Most important sections of the platform are easy to navigate.

Audio Eye

Audio Eye is a service which provides a toolbar, accessibility certification, and a help desk which users can contact for questions related to usage of the website with assistive technologies. During a website redesign in late 2019, RBdigital began using this service as part of their website.

The toolbar contains visual adjustments, a read aloud feature for the page (which is not meant to replace a screen-reader), and access to the help desk. Screen-reader users found that it served to clutter the page unnecessarily, placing usage information for the toolbar directly at the top of the page before the content. Some testers also found that their keyboard focus would frequently shift to the toolbar at the bottom of the page.

The Audio Eye service also includes a second version of the main navigation menu, reached by pressing a button called "Open Accessible Main Menu". Testers found that this menu is not fully functional, as any of the sub-pages such as Books > Audiobooks fail to load the correct section of the website. Using the built-in navigation menu–as opposed to the accessible version–proved much more reliable, and the accessible menu does not contain any extra functionality, raising the question of why this separate navigation option is necessary.

As a general rule, replacing or enhancing key portions of a website with either an alternative version or an external service only serves to segregate the users who need this alternate functionality. It leads to the potential for key functionality to become unusable in the alternate version. In this case, users have been unable to load entire sections of the website using this "accessible menu" since it was added to the website. Although the normal main menu functions correctly, users will first encounter the accessible version and will expect to have full access to the website.

When one of the testers contacted the help desk, they did not obtain a useful answer to the question of whether they facilitate accessibility support outside the functionality of the toolbar. Given the issues discussed in this report, the Audio Eye certification does not appear to be a testament to the true accessibility of a website.

Signing In

Each library is assigned a unique "subdomain.rbdigital.com" access page, and a user's login information is specific to their chosen library. While in 2019 many testers assessed the Skipjack testing library, in the evaluation we conducted for this report, all testers accessed content through their public libraries. The layout and functionality of the website did not differ by region.

The dialog that appears after clicking the "Login" link has a hint at the top, which is only visible to screen-reader users and reads as follows:

> "This is a login dialog. It begins with a heading. Press escape key to exit the dialog."

By the time the user hears this text, they've already interacted with the dialog. The next line under this hint is the aforementioned heading, which is called "ACCOUNT SIGN IN." If this hint did not exist, the user would have interacted with the dialog and would immediately see the "ACCOUNT SIGN IN" heading, which would tell them that it is in fact a login dialog that begins with a heading. Keyboard-related hints such as "press escape to exit the dialog" are not inclusive of touch-screen users.

In addition, keyboard users noted that it was not possible to reach the sign-in button by pressing the tab key.

Navigating Book Lists

The below information applies to the dedicated audiobooks and ebooks pages as well as curated book lists.

RBdigital uses screen-reader hints (text that is only available to a screen-reader user) to indicate book author and book title, and there is no separation between the individual books in each list. In addition, the name of the current curated list is repeated twice for every book listing—once before the author and once before the title. This is helpful when browsing the dedicated pages for audiobooks and ebooks, but within a curated list, there is no way to determine whether the current result is audio or text format without opening the information page. The below lines serve as an example of the way a screen-reader interprets this layout:

> COMBATING RACISM Book Title
> MEDICAL BONDAGE
> COMBATING RACISM Book Author Deirdre Cooper Owens
> COMBATING RACISM Book Title
> THE HEMINGSES OF MONTICELLO
> COMBATING RACISM Book Author Annette Gordon-Reed
> COMBATING RACISM Book Title
> SOUL BY SOUL
> COMBATING RACISM Book AuthorWalter Johnson
> COMBATING RACISM Book Title
> COMING OF AGE IN MISSISSIPPI
> COMBATING RACISM Book AuthorAnne Moody

These repetitions of the category name (Combating Racism) are not helpful; the user will have encountered the associated heading already. There is no consistent way to navigate to the previous or next title, nor is there a format indicator to tell the user whether the title is an audiobook or an ebook.

Since the category names are under level 2 headings, adding a level 3 heading around every book title would create this level of separation, and would also allow the removal of the "book title" hints. If the format of a book is visually indicated, this should also be reflected by a piece of text under the heading for that book.

As with the main menu, the "accessible version" of the carousels is far less useful than the version that already exists. The accessible carousels use a slideshow format that displays a single book at a time, so the user needs to manually navigate to the "next" button, activate it, then navigate back to the slide area to find the title of the next book. The book listings in this "accessible" carousel have the same verbose format as detailed above, including the repeated category names and the lack of format.

Searching

The search dialog begins with a hint that says "This is a search dialog. It begins with a heading. Press escape key to exit the dialog." In fact, there is no heading at the beginning or anywhere else within the search dialog.

The selector for audiobooks, ebooks, or magazines is contained within a sub-dialog of the search dialog. While this is perfectly usable with a screen-reader, this is overly complex for a screen that only contains one set of radio buttons, and users may find it confusing or miss it entirely, going on to wonder why their search results only contain audiobooks.

Overall, the search dialog works well. Advanced search uses well-labeled collapsible buttons for the various categories such as genre and audience.

Search results have no separation between title and author. The above suggestions for heading separation would be helpful in the results section as well. There is no indication of whether a result is an ebook or an audiobook, but the user can only search for one at a time and must choose the format while performing a search.

Managing Loans

Checking out a title causes a helper file to be downloaded to the user's computer. This is a .ocdf file for audiobooks, which can be opened in the RBdigital media manager; or a .acsm file for an ebook, which will open Adobe Digital Editions.

The button to select a checkout duration for an audiobook is called "dropdown", which is unhelpful and does not indicate the currently selected checkout time. When checking out an ebook, the button has a better label that simply says "for 7 days".

In the "checked out" section of the website, the remove buttons have very verbose labels which repeat the name of the book twice (for example, "Activate to remove Treasure IslandTreasure Island title"). The word "remove" is also inconsistent with the rest of the website, which refers to this process as returning.

Audiobooks

The website appears to have basic functionality for reading audiobooks within the browser. However, our testers were not able to access any functionality aside from starting playback and selecting a chapter. The playback position, speed, and volume could not be adjusted, and no bookmark functionality could be found.

Ebooks

Ebooks cannot be read at all using the website. After checking out an ebook, a helper file is downloaded to the user's computer, allowing them to add the book to Adobe Digital Editions. This software is largely accessible across Windows and Mac OS.

Magazines

The "articles" tab, which provides the most accessible view for a magazine, is not seen as clickable by screen-readers. However, it works well and provides a list of articles in the selected magazine. Once selected, the articles are quite readable, though images do not contain alt-text.

Visual Adjustments

Users of magnification software found that the website worked well overall, though testers said it would be helpful to have more fonts available, text spacing options, and larger sizes to avoid the need to use high levels of magnification. The articles tab is the best view for magazines, as it provides customizable text rather than images of the page.

Conclusion

The RBdigital website is quite usable with assistive technology, providing a well-structured page and several additional navigation options, such as landmarks and headings. However, many of the improvements that were made with accessibility in mind have caused significant accessibility barriers, including the additional screen-reader hints, accessible main menu, and accessible carousels. With the recommendations listed in this report, RBdigital would provide a pleasant user experience for readers with print disabilities.