

Summary of Accessibility Testing of the RBdigital Native Mobile Apps: iOS version 4.7.5 and Android version 4.7.0

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.

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About NNELS:

The National Network for Equitable Library Service (NNELS) is a digital public library of books for Canadians with print disabilities, and an advocate for an accessible and equitable reading ecosystem for their users. 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

This is a short summary of the accessibility report for the RBdigital native mobile apps in iOS and Android. It contains highlights of the most relevant findings. The full version of the report presents detailed information about the different sections of the app; including examples, detailed findings, and recommendations for fixing the barriers that our testers identified. Please refer to the [full report](#) for information on the testing of the RBdigital browser in Windows and Mac, as well as the usability experience of the RBdigital Media Manager (which will be discontinued later this year). Please note that while this summary

report focuses on barriers and challenges, there were several areas in which the apps performed well; this information can be found in the full report.

For this report, our team of testers evaluated the accessibility of the RBdigital apps for people with print disabilities¹ and found that the apps, as of April 2019, presented several barriers for users of assistive technologies. The app worked moderately well for audiobook content, but it was difficult to access emagazines content; notably, everyone testing in iOS was unable to read emagazines.

The objective of testing was to assess the usability experience of readers with print disabilities, and determine to what extent they can access audiobooks, ebooks and emagazines through their local public library effectively and efficiently. People with print disabilities use [screen readers](#), [refreshable Braille displays](#) and other assistive technologies in their computers and devices to access information.

To ensure usability and accessibility of an application by people with print disabilities, all functions and controls must be accessible using assistive technologies. 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](#))

Testing approach

NNELS developed a list of criteria for testers to perform a structured review of the accessibility of mainstream library reading applications. We drew on the [guidelines](#) that the DAISY Consortium developed for the systematic assessment of the accessibility of hardware and software-based reading systems. This methodology allows us to determine the accessibility of the functions and features of each reading application from the user perspective.

All testers performed several tasks, corresponding to the different functions of the application, and answered questions systematically. The questions for all functions are grouped into various categories, including:

- Library access – Creating an account, login, searches, results, and downloads
- Reading (including listening to audiobooks, and reading ebooks and emagazines) – App resuming reading at the same position; pausing before different sections; text to speech indicating emphasis
- Navigation – Moving through different elements in a book or an article such as headings, paragraphs, as well as spelling words; moving to different sections in an audiobook and change the listening position in time increments
- Visual adjustments - adjusting colour contrast, font sizes and types, and margins

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

Summary of Accessibility Priorities

The most important priorities across iOS and Android in the versions tested are:

- Label buttons and fix other element labels. Ensure that all buttons in the app are labeled with text. Unlabeled buttons are not easily identifiable by people who rely on screen readers.
- Information presented on pages should be more concise. When screens contain too much information, it is not easy for someone who cannot visually explore them to orient themselves and find what they are looking for.
- Add screen reader detection for automatic switch to Text View, and improve Text View for the PDF reader to enable people relying on screen readers to access magazine content.
- Configure all alerts so that they are audibly announced.

iOS with VoiceOver

Although this app is usable on iOS with VoiceOver (Apple's built-in screen reader), most testers describe the app as having issues that prevent accessibility, including unlabeled buttons and menus that are tricky to navigate. The testers noted that the app seems to be separated into three different apps that all present different user experiences for audiobooks, ebooks, and emagazines. They even noted that the search functions are not the same for each resource. The audiobooks section is by far the most accessible, then ebooks, and then emagazines. In the versions referenced in this report, testers noted that emagazine content is not accessible to readers relying on VoiceOver.

Gestures

When it comes to navigating between controls in the app, VoiceOver, which has very intuitive gesture controls for its users, does not always work as cleanly as it does in other apps. Moreover, slide-out menus and dialogues appear out of order when using swipe gestures, which can cause confusion for the user.

A major issue is that when a menu or feature is activated, the previous screen is dimmed to form an inactive background. This is a common practice throughout the app, but presents a major challenge for VoiceOver users. Instead of being positioned on the new controls, the user is left stranded on the previous screen.

A prime example of this is the Menu button. When activated, it expands with options such as My Account and Log Out. However, testers were not able to swipe to these options, they could only navigate the original screen. The only way to access the menu field is to tap on the far-left side of the screen, then swipe through its controls. This is problematic, because blind users will not know where the menu is, or even that they have to tap it.

Searching

The accessibility of the search dialog requires improvements. The search section has improperly labeled buttons, and users are not able to swipe to fields reliably.

When a user tries to swipe through the results, they do not appear to be in a logical order, and there is no clear indication what button belongs to what resource, so it is difficult to determine which button activates the actions and on which book.

Audiobooks

All testers were able to use the app for downloading and playing audiobooks. The controls for listening to audiobooks are nicely laid out, and the labels and buttons appear to be appropriately labelled and interact well with VoiceOver. When an audiobook is playing, however, the function to skip by percentage value by swiping up or down with one finger does not work. The seek slider is broken with VoiceOver, and when a user swipes up or down the percentage changes but it does not change the actual playback.

ebooks

When it comes to ebooks, testers found two main issues that make reading difficult. First, the navigation buttons, as well as any lists on the reading screen, are all unlabeled. Second, it is not possible to use three fingers to scroll through the book, which is the gesture used by screen reader users that is similar to how a sighted user would scroll it with a single finger. The only way to turn the page in the reader is by finding and selecting an unlabeled button, which is again inaccessible to users with VoiceOver.

Additionally, there is no “Read Aloud” button to read the entire book or chapter using text-to-speech functionality within the app. Testers attempted to read books by using the standard VoiceOver gesture to read text (swiping down with two fingers), but found that the pages are not visibly shown as the chapter progresses, as is the case when using the same gesture in other apps. This causes VoiceOver to read further ahead than the page that is currently on the screen, which creates overlap and confusion for the reader navigating the ebook.

Android with TalkBack

Buttons/Searching

Many buttons in the app are unlabeled for screen readers, which makes trying to use the app a bit of a guessing game.

For searching, there are unclear or missing button labels: the search button on the top navigation bar is unlabeled. After trial and error testers were able to discover its use, but noted that after clicking it they are not presented with a search box, but with two buttons: “audiobooks” and “emagazines.” It is not very clear that this is the search function, since the

screen reader only indicates that it is a button for “audiobooks” or “emagazines” and “double tap to activate.”

Audiobooks

Testers relying on TalkBack found it easy to access and listen to audiobooks. Several (although not all) buttons are clearly labeled, and publications are well divided by content headings. In the audiobook window, the list of chapters is clear and accessible for the screen reader, and narration snaps to the selection as soon as the new chapter is clicked.

ebooks

The ebook reader is not accessible, even though there are several labeled buttons. One of the two testers that assessed the app in Android could not get TalkBack to read any text beyond the title of the ebook.

emagazines

The emagazines open in a PDF Reader, which presented a highly-graphical user interface that is not accessible. When a user presses the “Text” button this did not improve the readability, and pressing the “Back” button made the app crash.

Conclusion

In this summary we highlighted the main barriers of the RBdigital platform for readers with print disabilities. For details and specific examples, please see the full report.

By amending the development process and interface of this app, readers with print disabilities will be able to fully experience what RBdigital has to offer them.