

# NNELS



## Accessibility Report for SimplyE

July 2022

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The opinions and interpretations in this publication are those of the author 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 ebooks for Canadians with print disabilities and advocates for an accessible and equitable reading ecosystem for Canadians with print disabilities.<sup>1</sup> 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.

## Accessibility Summary

The SimplyE app has included many great accessibility features that work well with assistive technologies. The recommendations in this report will help create an even more accessible experience. Fixing any labeling inconsistencies and adding control types to buttons in the app will help

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

create a more streamlined experience for screen reader users. Adding more visual adjustment options, like text spacing and more colours, will help people with low vision customize the app with their personal preferences.

## Introduction

SimplyE provides free access to digital books through participating public libraries. The service is offered as a mobile application on Android and iOS. Our testers used screen-reading and magnification software to assess the usability of the apps and website across supported platforms. Readers can find a complete list of all the software and operating systems used in this assessment in this report's *Systems and Assistive Technology* section.

This assessment aims to determine the usability experience of readers with print disabilities and to what extent they can access content through their local public library effectively and efficiently. While this report aims to provide an overview of the accessibility performance across supported platforms, this is not an in-depth review of SimplyE itself. As a result, some functionality may not be discussed at all or in-depth.

## 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, send and receive texts and emails, 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 Job Access with Speech (JAWS) and a free and open-source option called Non-Visual Desktop Access (NVDA). The 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 a 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. 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) applications.
- Adjusting the display, including font size, alignment, and colour contrast, or a combination of some or all these options
- Reading the text with a refreshable braille display
- Reading with assistive technologies designed for persons with dyslexia or other disabilities
- Reading with the app's built-in read-aloud functions

## Accessibility Performance and Recommendations

This section will dive deeper into specific accessibility issues encountered while testing the SimplyE apps and website. Below you will find the testing results and their related recommendations as they pertain to:

- Library Access
- Signing In
- Searching
- Reading and Navigating Books
- Visual Adjustments

Finally, the *Development Recommendations* sections contain suggestions for improving the interface on each platform. These suggestions will be relevant to any issues or observations noted above.

### SimplyE App for iOS

- Tested iOS versions: 14.7 and 15.4
- Tested app versions: 3.7 and 3.8

#### Signing In

All controls throughout the login process were easy to locate and use. Screen-reader users noted that the "Login" and "Logout" controls had no control type, even though they are presumably buttons. Adding a control type would allow VoiceOver to identify them as buttons, making it clear to the user that these are actionable controls.

#### General

The home screen has four tabs: "Catalogue," "My Books," "Reservations," and "Settings."

The catalogue tab contains a search field and various book categories, such as *Young Adult* and *Fiction*. A "More" button is located after each category heading; however, this button is also marked up as a heading. The result is that VoiceOver's heading navigation will read the heading itself and the

button next to it as separate controls, making for less efficient navigation. Since this button is not a heading, removing the heading role should fix this problem.

The “My Books” page is fully accessible. For VoiceOver users, each book is divided into four controls— “Title,” “Author,” “Read Now,” and “Return.” The two buttons are necessary but tapping on the author's name merely opens the book details page, just as tapping on the book's name would do. With this in mind, we recommend combining “Title” and “Author” into a single control to facilitate easier screen-reader navigation.

## **Searching and Browsing**

VoiceOver has trouble navigating the category carousels with swipe gestures. Swiping left or right will systematically move VoiceOver to the previous or next control on the screen, including the automatic scrolling of carousel views. However, the carousels do not scroll, so VoiceOver will read items that are not visually displayed on-screen. If the user double-taps one of these items, VoiceOver will perform a tap gesture on the screen, causing the wrong book to be displayed.

For low-vision readers, the home screen displays too many books at a time, and the lack of title captions on book covers makes book selection difficult, even on a large screen. Some low-vision readers will need to tap each book to learn its title, which is not an efficient discovery method.

After searching for books, a VoiceOver user can't move to the search results using swipe gestures. When VoiceOver focuses on the search field, it should be possible to move beyond it by swiping right, eventually reaching the results. Instead, VoiceOver makes a sound to indicate there are no more controls on the screen. It is still possible to touch a search result and use swipe gestures to navigate afterward, but this bug could prevent keyboard users or users unfamiliar with the “explore by touch” navigation style from reaching search results effectively.

On a book’s details page, all controls are accessible and readable. Again, the only notable observation was a matter of semantics: The “Description” and “Information” sections are headings and should be given a control type to match. This allows VoiceOver users to quickly jump to the relevant sections of the screen using custom gestures or the “Headings” option found in the rotor.

## **Audiobooks**

Testers found audiobook playback to be pleasant and accessible. The control buttons are clearly identified and labeled, and the percentage and time readouts are easy to detect and read. A VoiceOver tester noted that when a

book is downloaded, the progress percentage is read twice by VoiceOver—once from the progress bar control and again from the text label. These percentages are occasionally slightly different from each other—presumably because VoiceOver calculates the percentage of a progress bar differently from SimplyE’s calculation. The “download progress” label is also a separate control in VoiceOver’s navigation. We recommend combining these three controls into a single text label, which includes the text “Download Progress.” This will identify it to anyone who may stumble across it and reduce the number of required swipes.

Though not an accessibility issue, testers noted that adjusting the speed does not change the time display. The remaining time is therefore inaccurate when listening at a rate other than 1X.

## Ebooks

Note: The writer of this report could not find any ebooks that used the fixed layout reader view. The observations from other testers have been included in this report but could not be verified.

Ebooks come in two distinct styles—reflowable and fixed layout.

Reflowable ebooks are easily readable. VoiceOver reads and navigates the text efficiently, and the visual adjustments are suitable for many reading needs. One low-vision tester noted that when the font is “larger than the first couple of small sizes,” the page numbers in the index of a book are no longer accurate.

While making visual adjustments to the text, testers noted that VoiceOver did not announce which colour and font were currently selected. When buttons are given a “selected” state, VoiceOver will indicate this by prefixing the button name with the word “selected.” VoiceOver will indicate that the currently selected options are “dimmed,” but without additional context this could be confusing to some users who still rely on a screen-reader when navigating this screen.

Lastly, multiple testers noted that even when they had added bookmarks, VoiceOver read the text “There are no bookmarks in this book” after the list of bookmarks.

The second book layout—which we’ll refer to as fixed layout for this report—is more challenging. VoiceOver users found that these books could not be read properly, as the text has duplicated or incorrect characters. This is likely a problem with the book and not the app. However, within this interface, some buttons lack clear labels. For example, VoiceOver reads the back button as “chevron back” and the “Table of Contents” button as “Bookmark N.”

Testers found multiple books containing images of text rather than the text itself, creating several accessibility barriers. Screen readers are unable to read images of text, and users who require visual adjustments will not be able to change the appearance. A current example of this behaviour can be seen by downloading Drum Dream Girl on either platform.

## Visual Adjustment

In reflowable books, several fonts are available, including Open Dyslexic. Font size and brightness can be changed and colour themes are available, but users cannot individually customize the background and foreground colours. Additionally, there is no option to adjust line, word, or character spacing.

## Development Recommendations

- Avoid the use of duplicate headings on the “More” buttons.
- On the “My Books” tab, combine the “Title” and “Author” into a single text control.
- Add a “list view” to the home screen or add book titles to the “cover view” for low vision users.
- Ensure VoiceOver can scroll a carousel when using swipe gestures to navigate it.
- Troubleshoot “swipe order” problems, which prevent VoiceOver users from swiping past the search field after the results have loaded.
- Remove redundant percentage control when downloading audiobooks.
- To avoid user confusion, consider adding a “Table of Contents” label to the TOC button in reflowable ebooks.
- Improve and clarify the screen-reader labels in the fixed layout ebook reader.
- Add more appearance options, including spacing and custom colours.
- Add bookmarks to the audiobook player. (While not an accessibility concern, many testers requested it.)

## SimplyE App for Android

- Tested Android versions: 11 and 12
- Tested app version: 7.0 through 7.2

## Signing In

Signing in was an accessible and intuitive process with no noted accessibility barriers.

## General

The SimplyE Android app is quite accessible, and an effort has been made to ensure assistive technology users can access all necessary controls. Low-

vision users found that the bold text and simple controls created an intuitive and easy layout.

Each of the book carousels (such as non-fiction) has a dedicated heading. On Android, this heading is seen as nothing but a piece of static text. As a result, screen-reader users cannot quickly navigate the category headings. Additionally, tapping on the heading for a book category causes more books to load, but this functionality is not obvious to TalkBack users since the control is only read as a piece of static text. In this case, each category should be labeled as a button and a heading, with an accessibility hint to let users know they can “double-tap to load more books.”

The “Download,” “Listen,” and “Get” buttons have redundant screen-reader labels, which include the word “button” as part of the text. This causes TalkBack to read controls such as the “Download button button.”

## **Searching and Browsing**

Navigating the search results list with a screen-reader is inefficient because each book listing is separated into four individual controls. These are: the book title, the book title and author, the book author, and a download button. The second control (book title and author) provides all relevant information, so the individual author and title controls should be hidden from TalkBack users. This is especially problematic when navigating with left/right swipe gestures, as it slows navigation and causes redundant information to be spoken.

## **Audiobooks**

Testers found the audiobook player to be intuitive and easy to use. Some of the button labels are verbose for screen-reader users, namely the buttons for adjusting playback speed and sleep timer. For instance, the playback speed button is read as follows: “Set your playback speed. The playback speed is currently set to 125%.” Despite these wordy labels, none of the controls are reported as buttons in TalkBack. If all buttons are reported as such, these two controls' labels can be made much more concise—for instance, “Playback speed: 125%.” TalkBack will announce the word “button” after reading this label, making users aware they can double-tap to change the setting.

## **Ebooks**

The interface for reading ebooks is simple and accessible, assuming the book has readable text. For visual users, the book text is shown according to the preferences available under the Settings button. This includes a selection of fonts (with Open Dyslexic among them), text size and brightness adjustment, and three colour schemes.

Many of the controls in this reader view do not have a control type, so a TalkBack user will not hear the word "button" or any other identifying information besides the label. The buttons missing a control type include "Settings," "Table of Contents," "Add A Bookmark," and some of the buttons within "Settings."

When listing bookmarks, a duplicate control is shown with the same label as the currently selected bookmark. If this control is necessary, its purpose should be more precise.

For TalkBack users, the content of a book is shown in a web view so any well-formatted book should be accessible. If there is alt text included in an image, that text will be read when encountering the image.

TalkBack has a gesture to read all text continuously. This feature does not seem to work when reading a book in SimplyE. Rather than automatically flipping the page, TalkBack moves past the book view and starts reading the bottom controls. This may be a TalkBack limitation.

## Visual Adjustment

The main interface of the app does not seem to contain any visual adjustments, but the ebook reader is quite flexible, allowing users to switch between several fonts and override the publisher's choice. Users can adjust size and brightness and choose between three preset text and background colour combinations. However, they cannot adjust character, word, and line spacing.

## Development Recommendations

- Add control types to all buttons in the interface. Remove the word "button" from the labels of the controls so it is not spoken twice.
- Reduce the number of controls shown on search results pages so that screen-reader navigation is more efficient.
- Make the button labels (for sleep timer and audio speed) less verbose.
- Investigate the possibility of allowing TalkBack to read continuously, turning pages as it goes. If this is not possible, consider adding a scrolling view.

## Conclusion

The SimplyE platform has been designed with accessibility considerations, and the resulting interface is intuitive and pleasant to use. A user of screen magnification expressed the need for a layout with larger controls on iOS and found that browsing books could be challenging when titles are not displayed textually. Screen-reader users found that the interface was broadly accessible but for some minor bugs and button labels.



NNELS appreciates the accessibility enhancements on both iOS and Android and hopes that the suggestions in this report can assist the developers in working toward an even more accessible SimplyE experience.

## Systems and Assistive Technology

- Operating Systems
  - iOS 14.7-15.4
  - Android 11 and 12
- Mobile Applications
  - SimplyE 3.7, 3.7.1, 3.7.2, 3.8 (iOS)
  - SimplyE 7.0 and 7.2 (Android)
- Screen-readers
  - VoiceOver (iOS)
  - TalkBack (Android)
- Magnification
  - Zoom (iOS)

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