

# NNELS



## Accessibility Testing of OverDrive

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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<sup>1</sup>, 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.

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

## Introduction

The OverDrive platform provides access to various types of content including ebooks, audiobooks and emagazines. OverDrive supports 2 apps for reading –OverDrive and Libby– and we have done accessibility assessments of both. This is the second round of testing NNELS has conducted on OverDrive; the [first round](#) was done in early 2019. Please see Appendix A to read about changes between versions. Access to OverDrive is provided through local libraries, and the available content may differ by region.

This report will cover ebooks and audiobooks. The objective of testing the OverDrive app is to assess the usability experience of readers with print disabilities, and to what extent they can access audiobooks and ebooks through their local public library effectively and efficiently.

Our testers used screen reading and magnification software to assess the usability of the OverDrive apps and website across supported platforms. A complete list of all the software and operating systems used in this assessment can be found in the Systems and Assistive Technology section of this report. The objective of this assessment is to determine the usability experience of readers with print disabilities, and to what extent they can access audiobooks and ebooks through their local public library effectively and efficiently. It is important that readers with print disabilities can choose the reading systems that offer the accessibility features they require.

The results show that testers encountered many accessibility bugs, including unlabeled or mislabeled controls, and significant challenges reading and navigating ebooks on all platforms. This report highlights the accessibility barriers of the OverDrive apps and website, explains the barriers that these issues pose and why they are problematic, and advances some recommendations to enhance the usability experience for readers with print disabilities.

## 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 readers 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 and Recommendations

In this section we dive deeper into specific accessibility issues of the different features of the OverDrive app and website. Below you will find the testing results and their related recommendations as they pertain to:

- Library Access
  - Signing In
  - Searches
  - Downloading Titles
- Reading and Navigating Content
- Creating Bookmarks
- Visual Adjustments

We highlight some of the problematic issues as they relate to the different parts of the application in each of the platforms tested, but we do not elaborate on each of the features.

### iOS

- Tested in iOS version 13.4
- Tested app version: 3.8.6

The OverDrive iOS app requires interaction with the library-specific OverDrive website when adding books or managing loans, but uses a native app interface for reading and bookshelf management. The website (for interacting with OverDrive through the user’s library) works well with VoiceOver, and most buttons throughout the rest of the app have useful text labels.

The most challenging section of the interface is the ebook viewer: VoiceOver users had trouble scrolling through an ebook; navigating the table of contents is a cumbersome process.

Occasionally, VoiceOver will allow the user to touch or swipe to text and controls that are no longer visible. VoiceOver (and therefore the user) will assume the controls are still clickable and present on-screen, but in reality, the user may need to scroll or dismiss a popover in order to properly interact with them. We refer to this phenomenon as “backfield interference”. It occurs when new controls are painted over existing ones, without first clearing the screen of its old content. One area where backfield interference is prevalent is the table of contents, but it is important to note that this issue comes up randomly throughout the entire app. When the user is relying on VoiceOver and they encounter this behavior, it can cause confusion and lead to an unnecessarily complex interface. The user will need to explore the screen by touch—sometimes still seemingly encountering background controls—in order to find their way to the correct control.

### Signing In

Selecting a library and signing in is described as an easy process with no real barriers. When entering library card number and PIN, VoiceOver repeatedly announces the names of the fields as the user types into them. This does not prevent signing in, but it is a minor annoyance.

### Searching for Books

This section applies to searching for both ebooks and audiobooks. Testers noted that the basic search is very straightforward. They did not encounter any issues with entering queries. They did note that the different views in this section of the app can be problematic. By default, it is set to grid view, which is the most accessible view. If the user sets the view to list, it then becomes more difficult to navigate because there are more elements to swipe through. Most often, lists are found to be accessible by screen readers across the board, so this behaviour could be confusing to some users. Testers also discovered that there are unlabeled radio buttons in results displayed in list view.

A minor issue is the “Clear” control that deletes what the user has entered into the search box. Testers noted that while it can be navigated to, it is not apparent that it is clickable. This is because it only shows up as text, and the control type/role is not mentioned.

Testers found it confusing that ebooks and audiobooks had to be downloaded after being checked out. Even if they had automatic download turned on in their user settings, users have to add a title first in order to get to the list of books they have on loan. Since the testers had adjusted the settings and turned automatic download on, they expected that the ebook would appear on their bookshelf after borrowing it, but this was not the case. Testers found that they still had to manually download/open the books.

## Bookshelf Management

This section applies bookshelf management for both ebooks and audiobooks. Although testers found it easy to return books from the bookshelf, they found that the list of titles can be difficult to interact with when trying to locate a specific title. The number of stars and ratings are included as separate controls for each title, and this has a negative impact on user interaction when using swipe gestures to go through each control. The testers noted they found this confusing as it was difficult to skip through all this additional information, specifically all the stars. This caused the overall navigation of this section to slow down for users relying on VoiceOver.

## Audiobooks

The audiobook playing screen is easy to navigate. In the menu for bookmarks and chapters, there is one button that lacks a text label, but all other buttons are easy to find, well-labeled, and function as expected. The time readout is presented as a single slider, which announces percentage, time elapsed and time remaining.

Testers found that they are not always able to get VoiceOver to interact with the elements on the audiobook player screen when there is a popover, such as Table of Contents. The user can still find the buttons, but they cannot be activated. These are controls outside of the focused area, such as Player Screen or Menu, that are read by VoiceOver but are not directly related to the focus area.

There is no confirmation to let the user know that a bookmark was successfully added. The user must open the bookmarks menu to determine whether it has been added.

## Ebooks

The main issue testers found when reading an ebook is the disconnect between VoiceOver's navigation and the actual ebook. When the tester scrolled through the ebook using the "read all" gesture (two-finger flick down, or the swipe left and right), they were taken through the paragraphs of the ebook, but noted that the screen didn't change. This means that, although it is technically possible to read the ebook, the app does not follow the user's progress as they navigate through it. When the app is reopened, it opens at the page they started on, and not the last point they were at (i.e. either the beginning of the ebook or section, or a percentage of the way through when using the position adjustment). When a sighted user reads an ebook they are able to scroll the screen in any direction with a single finger. For VoiceOver users, they should be able to do this by using three fingers in the same direction (which is VoiceOver's gesture to scroll.)

If a user wants to access the Table of Contents, they need to double-tap to reveal more options and then tap on the "Table of Contents" button. Unfortunately, there is no message to indicate that in order to see more options it is necessary to tap on the screen of text. Once there are more options on the screen it is possible to find a list of the sections, but when the tester clicked on them, nothing was activated. Once a section has been selected, the list of sections does not close automatically as it would in many other reading apps, and

there is no indicator that the section in question has loaded, so the user has to manually close the menu and discover through trial and error that the new section is now visible.

Testers noted that the navigation slider is unlabeled. VoiceOver just read it as "Slider" followed by the percentage. Despite this, the slider does work normally, and can be adjusted with the one finger slide gesture of up/down.

Testers also found backfield interference in this section of the app, specifically with the Table of Contents. It is possible that a user will swipe out of the Table of Contents and VoiceOver will announce controls that don't exist. The button to open and close this section is labeled as "Title Menu."

As is the case with audiobooks, there is no audible confirmation that a bookmark has been successfully added.

### Visual Adjustments

Other than magnification options provided by the device itself, the app does not seem to have a built-in magnification option for its user interface. In the iOS edition, buttons along the bottom of the screen are used to change font particulars, but there are only two options for font size here. The large font option is only 11 pt, which is not large enough for low-vision users.

The app offers a dyslexic font, which is a wonderful option for people with dyslexia. A specific background color cannot be selected, this can only be changed through pre-defined styles. The color of highlighted text cannot be changed.

### Developer Recommendations

- Eliminate backfield interference by using standard popover controls, which will limit VoiceOver's focus to the active popover and not allow the user to unwittingly stray back to the controls underneath. To ensure only relevant controls are visible to VoiceOver, turn it on and perform a two-finger swipe up. This will read the entire screen from top to bottom with audible clicks to signify each new control.
- Make sure that both view modes in the search results are entirely accessible for VoiceOver users by removing or simplifying elements that get in the way or slow down usability when the user swipes.
- Ensure the "clear search results" button (and other clickable controls) are identified as either a button or a link rather than a piece of text with visual styling.
- Fix automatic downloads so that books are indeed downloaded after a user checks out titles.
- In the bookshelf view, consider changing the star ratings into a picker, which could be swiped past with one gesture, instead of the multiple swipes it currently takes. Another option is to consider hiding the ratings by default and adding a button to display them, or even make them available when the user seeks more information about the ebook.

- Consider adding a sound or a VoiceOver alert when a bookmark is successfully added.
- Change the “bookmarks” and “contents” tabs in the audiobook player so that a VoiceOver user can tell which one is selected.
- Clear all irrelevant controls from the “title menu” view so that the user does not encounter controls such as invisible chapter titles when the bookmark view is active.
- When navigating to new chapters—particularly in the ebook view, where the user won’t hear them start playing—consider closing the title menu so that the player and ebook viewer are back in focus with the new content.
- In the ebook viewer, consider detecting the use of VoiceOver and subsequently leaving navigation controls visible, since the user may not know they can tap the screen to reveal them.
- Fix the text view so that the user can swipe with three fingers to scroll through the book, and VoiceOver is able to automatically scroll through the text when reading continuously.
- Label the navigation slider with something like “Book position” so that the user knows its purpose.
- Increase the maximum allowed font size so that the user does not need to rely on the Zoom magnifier to enlarge text.
- Allow the user to choose their own foreground and background colours so that users with low vision or learning disabilities can customize the interface to meet their needs.

## Android

- Tested in Android version 10
- Tested App Version: 3.8.7

Due to the way the textboxes are coded, testers discovered that selecting text within them is cumbersome. It was noted that when the tester selects text in an edit box, the keyboard disappears until the user double-taps to edit the textbox again.

Multiple testers reported sluggishness when navigating the parts of the app that invoked a web view, such as the views for searching and borrowing books. This resulted in difficulty navigating or reading the events on-screen.

## Signing In

Overall, testers found that logging in is accessible, and that the edit fields are labeled properly for the most part. It was noted that the label for the "Card Number" edit field is written as "Card Number," which likely matches the text title to the control.



## Searching for Books

This section applies to searching for both ebooks and audiobooks. Testers found that the search feature is well laid out, and all combo and text boxes are labeled properly. As explained earlier in this report, the only accessibility issue is with the text selection in the edit fields.

There are two possible views for the search results: grid view, or list view. The default is set to grid view, which is accessible and navigable by TalkBack. The only issue noted by testers is that there are blank spaces that TalkBack encounters while moving through the grid. This can reduce efficiency if the user swipes instead of exploring by touch. Testers discovered that list view also works, but the only issue is the radio buttons are labeled with verbose and complex phrases. For example, it says “you rated this title 4 stars” when the user comes across the radio button. In addition to being confusing, it can also take a blind user longer to move through the buttons than if they were labeled more concisely.

Although testers found that the check-out process is accessible (with all the combo boxes and buttons properly labeled,) they noted two issues with sluggish responses and loss of focus for TalkBack, which made it difficult to interact with this piece of the app. The loss of focus was reported to occur after a tester clicked the “Borrow” button. If the user tried to click on other items, there would be no response until they were able to relocate the area again to dismiss the Successfully Borrowed message. This meant that the focus was outside the dialogue box for confirmation of the borrowed item, and all other sections of the page were inaccessible.

It is important that the focus of a screen reader, like TalkBack, can keep focus in an area until the user chooses to leave through a series of clear actions and commands, and that there is a clear notification when something changes on the screen that requires the user to interact with it before moving to another section.

## Audiobooks

In the audio player screen, by the “Play/Pause” button, there are numbers that indicate time elapsed and time remaining. Testers noted that TalkBack does not identify these two controls by name; it only reads the numbers for each.

## Ebooks

The menu to navigate the reader is not very easy to find. One tester reported that when the menu opens, the screen reader does not always read the menu to alert them that they are already in it. The items on the main menu were all labeled, but some items appear to be somewhat out of place. For instance, the information about the Loan, as well as the menu for bookmarks, are both nested under the Table of Contents section.

The ebook viewer is accessible, although testers recorded their experience as not ideal. Simple navigation through the ebook works well with TalkBack; users were able to scroll to the next or previous page while swiping forward or back through the text, and a two-finger swipe works well to move by page. Regarding full-screen view for the ebook, clicking on the



page number at the bottom of the screen to display controls works well, but is not particularly intuitive or discoverable for a TalkBack user.

Although testers were able to navigate by chapter and read the text, they could not find a "Read to End" or "Read Aloud" feature, and had to manually scroll to continue reading text. Also, all the headings are identified as hypertext, but testers reported mixed results when clicking these; they did not appear to work consistently.

For TalkBack, there is a well-labeled button on the top-right of the screen to set a new ebookmark. After this is selected, the tester noted that there is a popup message confirming that the ebookmark has been set, complete with its title. However, the process to show the list of ebookmarks is nearly impossible to figure out without visual assistance. The tab that lets the user cycle between ebook contents and ebookmarks is unlabeled. The testers did note that the "Contents" button is well labeled, as is the clickable list of chapters that appears.

### Visual Adjustment

Although there are many options for visual adjustments, additional options for text and background colour would be beneficial. Some people with low vision find it helpful to read on blue backgrounds, and would benefit from a larger selection of colour. The testers noted that there is a dyslexic font, which is a wonderful option for people with dyslexia.

### Developer Recommendations

- Make sure the text spoken by TalkBack matches the text that is rendered visually, such as not including "&nbsp;" in accessibility labels.
- Fix the functionality of text-boxes to enable TalkBack users to select and delete text.
- Change the labels for the star rating radio buttons in search results to be less confusing and verbose. A good way to do this without breaking compatibility elsewhere is by changing "You rated this title" to "Your rating:". Example: "Your rating: 5 stars."
- Troubleshoot the focus trap that occurs after checking out a book (when the user needs to find the dismiss button manually and is unable to move around the screen using swipe gestures).
- For audiobooks, add "time elapsed" and "time remaining" labels before the numbers in the time readout.
- Consider making the ebook reading menu more intuitive.
- To allow users to find and activate full-screen in an ebook, add a text label or hint to decrease the learning curve, such as "Click to show controls."
- If possible, change the text view so that TalkBack can read to the end without the user needing to manually flip pages.
- Add a label to the tab that cycles the user between bookmarks and ebook text.

- Add more options for font size, font colour and background colour.

## Windows (Universal App)

The below information applies to the universal Windows 10 app, which can be downloaded from the Windows store. The classic media manager, which exclusively downloads and plays audiobooks, will be discussed in a later section of this report.

The universal Windows app is partially powered by a web-view of the OverDrive site, which allows for title searching, loan management and browsing for new content. Although the OverDrive website is very accessible and easy to navigate, screen reader users found that the app's built-in web browser was extremely sluggish even on powerful hardware; in particular, multiple NVDA users reported that after browsing their library through the app, the screen reader became slow and unresponsive even when using other applications. As soon as the OverDrive app was closed, the computer became responsive again. These users opted to browse the website through a web browser, which eliminated the responsiveness problems.

Unfortunately, the native controls in the app also suffer from significant accessibility barriers. Almost every button and list item is badly labeled or completely unlabeled. In particular, the main menu button has no label, meaning that a screen reader simply reads it as "button" and users will need to discover it by trial and error; and many list boxes such as the list of downloaded books are impossible to navigate because every list item is read by the screen reader as "MediaConsole.ViewModel.LinksViewModel". This issue also affects other sections of the app noted below.

## Signing In

NNELS conducted testing of this app in early 2019 and found that signing in was very problematic but not impossible. During the latest tests conducted in May of 2020, some screen reader users were completely unable to navigate the app in order to select a library and enter their information. The screen reader became unresponsive and was not able to render the web-view at all, and common keys such as tab and arrows proved similarly ineffective. When users were able to sign in, the app suffered from the lag described above.

Selecting the local library was described by testers as being extremely difficult if not impossible, requiring extensive workarounds to emulate the mouse pointer. List boxes and other controls, such as check boxes and buttons, lack titles and textual captions. Once a short list of local libraries was finally presented, each selection was simply named "MediaConsole.ViewModel.LinksViewModel" with no way to distinguish between the various options. When the testers searched to add a library, they were presented with a list of 43 numeric OverDrive options in various countries, and an untitled button that didn't appear to do anything. As it is, this step is a huge barrier for accessibility with screen readers, and more than one tester was not able to sign into the app at all.

## Searching for Books

This section applies to searching for both ebooks and audiobooks. All search functionality is powered by the OverDrive website, which is library-specific but generally very accessible and easy to navigate. As noted above, any task which requires rendering a webpage inside the app causes significant screen reader lag, and testers found that using a browser to search for books was much easier.

In the bookshelf within the OverDrive app, testers found it difficult to navigate; each item is read as "MediaConsole.ViewModel.MediaViewModel", which means there is no way for the user to distinguish between the titles. In addition, the position of the items in the list seems to change based on the most recently read books, so the user is not able to work around this issue by remembering the items by location in the list.

## Audiobooks

Although testers were able to play audiobooks, they found significant accessibility bugs within the player. Testers noted that there are list boxes for chapters and parts, but both are improperly labeled with "mediaConsole..." similar to the list of titles in the bookshelf. Additionally, pressing enter on a Chapter or Part has no effect on what is currently playing. Testers also found that several buttons have no label, so the screen reader will simply read them as "button." Through trial and error, they discovered these are navigation buttons including: Play/Pause, Next/Previous Section, and Skip Back/Forward. It was discovered that there is also an unlabeled "Close" button that returns users to the library. The lack of label on this particular button means that until a user discovers it by trial and error, they will not be able to exit the book player and return to the main screen.

The buttons in the small "Now Playing" bar are labeled. However, the controls that are meant for sleep timer and speed control are labeled as "1x" and "off," though they do update to reflect a change in speed (for instance, "1.5x.") It was noted though that when the user does select these buttons, a regular Windows menu opens that is fully accessible.

## Ebooks

The ebooks are displayed chapter-by-chapter, eliminating the ability to skip to a heading or table outside the current chapter. Testers did note that navigation within any given chapter works fine. The screen reader usually begins reading the ebook as soon as it is opened, and navigating between paragraphs works well. However, once a list of chapters is pulled up, or the next chapter button is pressed, testers could not find an easy way to navigate back to the reading pane without closing and reopening the app.

A Windows user relying on JAWS and NVDA reads an ebook by pressing Control-T to pull up the ebook navigation pane. However, while the list of chapters is fully accessible, there appears to be no way to select one from the keyboard. To troubleshoot this, the user has to review the Table of Contents with the keyboard, then find the appropriate chapter with the mouse cursor and click it, then close and reopen the app to read the next chapter. Though testers noted there is a slider to indicate ebook position (which can be repeatedly clicked with the mouse to go back, and a page counter which can be advanced to the next chapter

with repeated clicking) this method of navigation is inexact, and it causes the window to lose focus, necessitating closing and reopening of the app.

Testers were unable to use e bookmarks. They did not find links or buttons to access this feature.

### Developer Recommendations

- Troubleshoot the significant responsiveness issues experienced by screen reader users when web-based content is displayed in the app.
- Label all list boxes, and standardize the way these labels are made so that future list boxes will have a valid label.
- Ensure all buttons have a valid text label, particularly the main menu button, the audiobook playback controls, and all close buttons.
- Add keyboard shortcuts to navigate an ebook by chapter or page and access reader options.
- Ensure the table of contents can be closed with a keyboard shortcut and/or a button that is announced correctly by a screen reader.
- Ensure chapters in an ebook's table of contents can be opened with the keyboard.
- In addition to labeling sections and chapters of an audiobook, ensure that pressing enter on those sections will correctly move to them.
- Ensure screen reader users have access to bookmarks in an ebook.

### Website

There are two versions of the OverDrive website, the official one, and the one corresponding to the specific public library that provides access to content; in the latter case, accessibility depends on the design of that particular website.

The website was tested on mobile and desktop operating systems, so unless otherwise specified, all information below pertains to both. Since many of the findings are the same across different browsers and operating systems, this information will pertain to any software combination unless otherwise noted.

### Signing In

Testers had no trouble signing into their library-specific version of OverDrive.

### Searching for Books

Our testers were able to search for both ebooks and audiobooks, check out titles, manage loans, and view all information about a title. The search filters rendered properly as comboboxes on Windows and as pop-up menus on MacOS.

## Reading Books

While managing the bookshelf and searching for new books was a pleasant experience, reading those books was challenging. The in-browser readers for both ebooks and audiobooks have many unlabeled controls and other accessibility barriers. Specifically, the text of ebooks is shown, but navigating an ebook or audiobook by chapter is not possible—clicking on the desired section does not change book position at all. Additionally, because of the lack of labels on playback controls, the only way testers could get an audiobook to start playing was through trial and error until playback started.

When the tester opened a popover screen, such as Table of Contents or Search, they were not able to close it again. They attempted to close these screens by pressing the “Done” button that shows up near the other controls, but it did not work. They also found that the other buttons have inconsistent labels and seem to do nothing when pressed.

One tester discovered that there are numerous timestamp controls in the audiobook player, and these seem to be a minute apart and span the entire content. For example, it was noted in a 12-hour audiobook that there were over 700 controls on each page. When the user clicked them, there was no effect.

Testers did note that the website in Windows can be used easily to check out ebooks and then they can play them in the OverDrive media manager, Adobe Digital Editions, or the mobile OverDrive app, which are more accessible options.

## Visual Adjustments

Our testers found that a dyslexic font can be enabled in account settings, and one tester of the mobile site was able to use pinch-to-zoom gestures to adjust the size of text. However, no other visual adjustments were found. Since this website is most likely being viewed in a user’s web browser, many of these adjustments can be made through browser-specific settings.

## Developer Recommendations

- Label all buttons and controls in the ebook and audiobook viewer.
- Ensure that using a keyboard to select a chapter in the table of contents will move the user to that chapter.
- Consider adding keyboard shortcuts for common actions in the ebook and audiobook viewers, such as playback controls and turning pages.
- Ensure that pressing the “done” button on a popover using a keyboard will correctly close it. Examples include the table of contents or the text search function.

## OverDrive Media Manager (Windows and mac OS)

The OverDrive Media Manager is a desktop application which can be [downloaded](#) from the OverDrive website. It allows users to play and manage audio books. When managing loans on the OverDrive website, users can choose to read the book online or download it. In the

case of an audiobook, the download will be a .ODM file which will open in the OverDrive media manager. This file acts as an instruction set, telling the media manager where to find the audio files associated with the book. Once the files are downloaded to the user's machine, they can be viewed and listened to using a simple and accessible user interface. The app also includes functionality for adding bookmarks, speeding up the narration, and burning the book to one or more audio CDs.

Testers found this to be a much more stable and accessible alternative to the audiobook player on the website or the universal Windows app. The media manager has no known accessibility barriers, and it downloads MP3 files that can be used in any other audio player. In short, it is currently the best method for a screen reader user to read audiobooks on Windows and MacOS.

## Other

As the ebook viewers on both the website and universal app are difficult to navigate, users can install Adobe Digital Editions (ADE) and download local copies of ebooks instead. Our testers found that accessing ebooks through ADE is more accessible than attempting to read them using the OverDrive apps. This requires the creation of an Adobe ID.<sup>2</sup>

## Conclusion

In this report we highlighted the main barriers of the OverDrive platform for readers with print disabilities. We also recommended some improvements to make it a better option for users relying on assistive technologies.

The most important priorities across all platforms (iOS, Android, Windows and Mac) include: labeling all buttons and controls; expanding the number of features available only through the apps so that users are not required to also rely on a browser (which is particularly relevant for mobile devices); and simplifying some of the menus and improving the functionality of popovers.

Several parts of the OverDrive app and website are enjoyable and intuitive to use, such as browsing the catalogue and reading audiobooks. This is especially true for the iOS version. However, the reading functions for ebooks across all platforms were not very accessible. This effectively prevents users on some platforms from reading ebooks at all, as they are protected by DRM and thus cannot be opened by an alternative—and more accessible—reading application. As OverDrive is one of the most widely used library apps, it should be fully accessible to people who use screen readers or other accessible technologies. By fixing these issues the app will become more accessible and can be enjoyed by a wider audience

<sup>2</sup> Adobe Digital Editions for Windows works very well with NVDA; it was not tested with JAWS or Narrator. Digital Editions for MacOS is usable with VoiceOver, but a tester noted that there was no way to continuously read a book; each page needed to be read manually by moving the VoiceOver cursor through the book.

of users. Hopefully, this feedback can be used to improve the apps so people can take advantage of the content available through their library's general ebook and audiobook collection.

## Contributors

The following people contributed to this report, including testers and editors.

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## Appendix A: Changes from 2019 to 2020

Some of our testers participated in both rounds of OverDrive testing and were able to identify the changes between versions. Additionally, this document was carefully fact-checked during the process of updating it with new test data. Though much of the app's functionality has remained the same, the following changes were observed between versions:

### iOS

- The mislabeled controls for determining the time elapsed and time remaining have been consolidated into a single slider which reads both the time values and percentage. This was a clever solution that also cut down on user interface clutter.
- When searching for books, managing loans or otherwise interacting with the embedded web interface, the bottom toolbar (including the back and forward buttons) is now fully labeled, allowing VoiceOver users to find the correct button.
- When signing in with a library card and PIN, the names of the text fields are constantly and frequently repeated by VoiceOver as the user types. This behavior was not observed in our previous testing.



- Some other buttons—such as the button to close the title menu—have more distinct labels that clarify the function of the button for a VoiceOver user.

### Android

- Many controls are now properly classed as links and buttons. Previously, TalkBack only announced the name of the control, and not the control type.

### Windows

Most screen reader users were not able to log into version 3.8 of the Windows app. Where 3.7 was frustratingly sluggish, 3.8 was nearly impossible to use with a keyboard, and only one screen reader user was able to move past the login screen. According to that tester's report, the interface still has all of the barriers described above.