# Transcript of “Accessible Reading Technologies” Webinar

Webinar date: November 16, 2023

## Introduction and Overview

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**Jessica Desormeaux:** All right, we're all set for Charmaine. Please take it away.

**Charmaine Co:** Okay. Thank you for coming out today, everyone. This webinar will aim to introduce you to the different kinds of accessible reading technologies that exist and are available to people with print disabilities. To begin with, here's an outline of what we're going to be covering today.

We will first begin by going over what print disabilities are by definition, and then we'll have a breakdown of what the term “accessible reading technology” actually means. And then we'll look at some examples of accessible formats and what they might amount to, and then we'll start to get into some different types of accessible reading technologies with demonstrations and videos to illustrate them. So it'll be like a survey of the different technologies that are available. You'll get a taste of things like text to speech programs and what they're all about. We'll get into some examples of literacy support software, braille reading devices, screen magnifiers, DAISY players and more affordable audiobook players. We'll go over some voice-activated devices and some accessible reading apps as well. So a whole range of technology there. Then, we will conclude the presentation by sharing some learning resources on where you can get more information or try some of these technologies out for yourself.

## What are Print Disabilities?

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So to begin with, a print disability is a condition that prevents a person from reading ordinary print. And in the Canadian Copyright Act, there are actually three types of print disabilities, and they're not an exhaustive list. There are probably more out there, but these are the types that specify the kinds of conditions that can legally qualify a person to have access to alternate format materials.

The first are visual disabilities like blindness or low vision, as well as the inability to focus or move one's eyes. The second are physical conditions, often called motor disabilities or motor challenges, such as cerebral palsy, severe arthritis, paralysis, or M.S., that prevent a person from holding a book or turning pages due to them being unable to effectively use their hands. The third kind of print disability is any impairment that relates to comprehension like a learning disability such as dyslexia, the most common one, where there are differences in the brain that prevent the person from processing or making sense of the print, even though they are able to visually see the print on the page. They need it in an alternate format in order to make sense of it, like audio format, for instance. So these conditions might be-- appear one at a time. So a person could just have one of them or they might be combined. So, for example, a person can have dyslexia along with a visual impairment, or they can be temporary, such as cataracts. So if someone has cataracts, they won't be able to read print as it is in its original state.

## What Does “Accessible Reading Technology” Really Mean?

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Now, we'll look at what “accessible reading technology” really means. And the idea with this is that offering the content alone in an accessible format is only a small part of the process that needs to be implemented in order for materials to be truly made accessible to those living with print disabilities. It's often actually assumed that we just have to make our content accessible. We just have to make the books that we offer in accessible format and that's it. But that's actually only part of the story. And a lot more needs to be done in order to make things truly accessible.

So in addition to content being offered in accessible formats, the entire process of finding, acquiring, and reading the materials or books needs to be made just as accessible. So, for example, this is not something that we often think about, but if we broke it down a little bit, the website or database or catalogue or electronic system that's used to search for books, like the library's website or the e-book provider's website, for example, need to be designed with accessibility in mind so that people who use adaptive technologies, like screen readers or screen magnification programs, can easily access and use them. And also the players, apps or devices used to read the content being offered must be made accessible and usable as well.

## Accessible Formats

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Next, we're going to look at some examples of accessible formats, and one such example is called ePub, and this is the standard non-proprietary e-book format that ensures that e-books are made fully accessible in terms of their text content and book navigation. The most recent version of this kind of book called ePub, is known as ePub3 and it works with most updated accessible reading softwares and apps. It's managed and maintained by an organization called the W3C Consortium, which also manages the standards for website accessibility. This is something that is not often thought about as well, unless you work in the accessibility space. Websites also need to be made accessible. It's not just that it's digital and available on computers, this isn't enough to make websites or apps accessible.

The next example of accessible format is DAISY, which is widely known. It's the format that is most often thought of that's intended for use by those with print disabilities. It comes in human-narrated audio format as well as text format that can be read aloud via synthetic voice or with a refreshable braille display, which we'll go over later. Books in this format are known as DAISY books, and they can be accessed via digital download or from a CD. DAISY stands for ‘Digital--’ I think it stands for “Digitally Accessible Information System.”

And audiobooks are another example of accessible formats, and they are often enjoyed by people regardless of whether they have a print disability or not. And I'm talking about commercially accessible audiobooks. But the main difference between commercially available audiobooks that you can get from places like Audible and other companies, is that the audiobooks offered here at CELA come in DAISY format, and this allows for more detailed and precise navigation that doesn't usually exist in a commercially available audiobook. So usually when you play a commercially available audiobook, it just mainly allows you to play the book from start to finish. But there's very little control over if you want to navigate by chapter, by page, by paragraph, or by heading. And these are made possible in this DAISY format. The reader has a lot more control over what's possible when you navigate through the book.

And the last example of accessible format is braille. And this is a tactile method for reading by touch by people who are totally blind or have partial sight, and can be embossed onto paper

or read electronically with a braille display, which you'll get to see in action later on. And finally, before we move on, it's important to note that the time it takes for something to be made accessible can vary quite a lot depending on what it is. Some materials, like novels and other literary or text-based materials, take less time, whereas, if you have books with graphics,

pictures, tables or math content can take considerably longer because they are not often readily accessible from the publisher and they must be manually adapted, especially if they're going to be transcribed into a braille format. If you are going to be transcribing a math textbook into braille format, it can take almost six months to one year to make it, to adapt everything, including all pictures and graphs and math equations, because those things are usually also not accessible by screen-reading technologies.

## Types of Accessible Reading Tech

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Now, we'll move on to looking at some examples of some accessible reading technologies.

### Text-to-speech software

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We will start with screen readers. These are-- and they form the basis for most other accessible technologies. So they are good foundational point to start our survey into the land of accessible reading technologies. And these? What are screen readers? Well, they convert digital text normally displayed on the computer screen or on the tablet screen for others to see with their eyes, they convert that text into spoken words so that people with print disabilities can efficiently navigate and access content and interact with the content that's displayed on the computer screen or on their phone or on their tablet. And the interaction is done with keyboard commands. Most of these users, like myself, have to learn many keyboard commands to press rather than using a mouse pointer and doing mouse clicks to get around their computer and do what they need to do. There are many different kinds of screen readers. Some are free and some are paid, and some even come built into devices that they're compatible with right out of the box, which we really like. No need to install anything else. You just buy the product off the shelf and you can use it once you turn on the screen reader, an example of which I'll demonstrate.

I'll demonstrate a third-party screen reader in a minute. It's a paid screen reader that runs on a subscription fee. It's called JAWS, or “Job Access with Speech.” It works on Windows computers and it must be installed separately. Another screen reader for Windows is called NVDA, or “Non-visual Desktop Access.’’ This is a free screen reader and can be installed onto any computer running Windows. And other examples that come built in right out of the box, that are built right into the product, is VoiceOver, and that's Apple's built-in screen reader for Mac computers or iPhones or iPads. So if you have any devices like that around you, you have access to them, you can turn that screen reader on and try it out for yourself. It ensures that those devices come accessible right out of the box, and no need to install anything else. And this is a good option for anyone to explore, whether they need a screen reader or not. If they want to try this out and experience the feeling of using a screen reader to navigate.

### JAWS Demonstration

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So now I'll give you a quick demonstration of how a screen reader user, like myself, would use JAWS to launch the CELA website on a computer. And the browser I'll be using is Edge. I'm going to start out by sharing my screen and I’ll share my sound. So, now I've shared my screen and I will try to explain what’s happening. I'm going to be starting to press-- I'm going to be doing a very simple task, which is going to Microsoft Edge, And I'm going to be going to Microsoft Edge and launching the CELA website. That's all I'm going to do. And how this is going to work is,

when a person uses a screen reader, they're not going to look around on their screen for Microsoft Edge and double-click. They're going to be pressing keyboard commands to get there. So the first thing I'm going to be doing is pressing a keyboard command to get me to the search box where I can type in ‘Microsoft Edge.’

**Screen reader 1:** Search box, edit, type in text, computer braille.

**Charmaine:** And the speed that you're hearing it at is the speed that's quite fast. It's what people normally have their screen readers set to talk at. So now I'm at the search box and I'm going to type in “Edge.”

**Screen reader 1**: E-E-- Microsoft Edge. Microsoft recommended browser. Press right to switch preview. Microsoft Edge. Microsoft recommended browser.

**Charmaine**: And so what it's saying, in case you weren't able to catch it, is it's saying, “Microsoft Edge.” That tells me it's selected, and I'm going to press Enter to open it.

**Screen reader 1**: Enter. Side bar is now visible. Address and search bar, edit, command, type in text.

**Charmaine**: Now I'm in the address bar and it's telling me-- it's telling me a bunch of information that I won't get into, but it's basically telling me I'm in the address bar and I can type in-- And as you can see here, I'm going to type in the CELA web address now. And as I type, it'll tell me what I'm typing.

**Screen reader 1**: W-W-W-Period-C-E-L-A-L-I-B-R-A-R-Y-Period-C-A.

**Charmaine**: And then I'm going to get into this website.

**Screen reader 1**: Microsoft Edge. Data dash personal. List of three items. Loading complete. Page has five regions, 17 headings and 60 links. Therea re five Smart Glance highlights on this page. Vertical bar, heading level two. Service Alert, Newspapers--

**Charmaine**: And so, what happened when I typed in CELALibrary.ca is that JAWS started to read aloud in the same way that you would start to see the contents of the home page. And had I let it, it would continue to read from the top to the bottom. And so now you might be wondering, well, what happens from there if it just keeps on reading? And the idea is that you can press different keyboard commands to control what's being read aloud. So if I press the letter H, for instance, it would move me to the first heading.

**Screen reader** 1: Centre for Equitable Library Access, Heading level one.

**Charmaine**: That says, “Centre for Equitable Library Access,” and then the commands just go on from there, basically. So I'm going to close the browser now.

**Screen reader 1**: Alt+F4. JAWS Home Annual.

**Charmaine**: I'm going to go back and stop sharing my screen.

**Screen reader 1**: Apps. Screen-sharing meeting controls. To move to an item, press the arrow keys.

**Charmaine**: So I've stopped sharing my screen. And as you can see just from that, it reads everything out, quite literally, that I need to know in order for me to use the computer. So it's not just reading the text or, you know, parts of web pages. It's reading every single button, it's reading every single link or program and giving me hints on what I need to do to respond to what's being read out loud.

### Literacy support software

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The next example of accessible reading technology is literacy support, and these are for people who have literacy needs, needs that will-- It's almost like they need some help in making the-- acquiring the knowledge of learning how to read and write to be made more accessible. So it's not just viewing the text or having the text read aloud. These are people who need more help with knowing what words are and meanings of words and making the process of reading and writing and comprehension a little bit easier for them. So there is a software, it's made for Google Chrome, made from Google Chrome, which you can use to try it out if you want to experience it. It's called the Read&Write software. And we're now going to look at a video of a teacher using it to read a PDF document, and we'll see what that's all about.

### Read&Write demonstration

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**Jamie Keet**: Hi, I'm Jamie Keet at Teachers Tech. Tonight we're going to take a look at an add-on called Read&Write for Google Chrome. This is a great program to boost confidence for reading or writing in students, so stick around for a full tutorial. One of my-- probably my favorite feature is the read-back feature because I find it eliminates the long lineups I have at my desk all the time. And so how it works is, and in a couple of different ways, and you can change the settings here. So if I just go from the start here and hit Play...

**Narrator 1:** The rain forest likely formed during the Eocene era.

**Jamie Keet:** And I'll just pause it there. You can see if I pause it, the yellow stays there, the highlighted, but if I stop it, it goes away. So if I didn't like the way it sounded, if I wanted a different voice, all I have to do is go to my settings and I can see if I wanted it all of a sudden in a UK voice. And I'll go with Serena here, and I'll turn it fast here. Hit OK. And I'll just go back to it and hit play one more time.

**Narrator 2:** The rain forest likely formed during the Eocene era. It appeared following a—

**Jamie Keet:** And I'll just stop it there because I think you get the point of how that works. So another way you can do the read up-- read out is if you just go to this screenshot reader right here. So if I select the screenshot reader, I can now just pick a certain area that I want read. So if I highlight right there, it's going to just load it up here and just say that sentence.

**Narrator 2**: --when the climate was drier and savanna.

**Jamie Keet:** And it will just read-- only say that one. So again, if I want it off, I can just turn it off like so. So those are some kind of cool features that I probably use all the time. The students I-- It's nice to have headphones in your class so you don't get overwhelmed with all of the different read-backs that are happening in all the different accents, because the students do like to change the accents on their read-back.

So another cool feature I find is the highlighting here. So if I take a word like-- Oops, I better turn off my screenshot reader here. If I go over to, let's say... Oops, I’m turning on the wrong things here. My mouse is kind of stuck inside this one. I don't want this on anymore. All right, there it goes. So. So if I highlight a word like “rainforest,” and then go up to highlight here, and then just highlight like so, then you can see that it's in yellow. If I don't want it anymore, I can just highlight it again and then clear the highlights. So if I highlighted a few different ones-- I'll just do it in a few different colors just to give an example here. If there was words that I was looking for to make a list from-- I'm just going to pick two, you can see what I was trying to do. I could go through and pick a few more colors, but if I wanted to create a list on a separate page of those words, all I need to do is hit “Collect highlights.” So it asks me what colours, I'm just going to hit OK here. And what it's doing right now, it's going to create me a new Google doc here that shows the highlighted words that I have here and also gives me a link back to the original Google Docs here.

So if a student was going to do a vocabulary list from this, it would be a great way to start, but an easier way to do a vocabulary list with those same words-- I won’t change that around-- is if I just go over here to Vocabulary List, and this time-- this will take a couple seconds longer here, it's going to create a brand-new Google Docs here. And you see what it can do here... It’s still loading up here. There it goes. Okay. So it has the rainforest-- even puts the symbol in here and creates it in a nice table format for students to get a vocabulary list. So if they were going through and not understanding, or if you asked them-- Even from a website, they can do this. And I'll show you this in a little bit. It's all with the same icons that we have at the top, but you can use it as an extension on a website too.

So those are some that I find, like I said, a really-- A PDF file. So I'm just inside my Google Drive right now, and I have this “Short Stories For Children” here that we’re going to open up. It's a PDF file. You just can't click on it unless you have your settings set as default. So, for instance, I can right-click on this. Or if I was going to open this here, if I just click on it, I can see it open with my Read&Write. So I could do that option too, or you could right-click and then “Open With” and pick Read&Write. The other thing is you could change your settings in here and go to “Manage Apps.” And then what you can do is click on “Use by default,” if you're opening in that all the time. And then so once you open up this one, it's going to convert it with Google Read&Write. And what you notice-- a lot of the things are the same in it. So I just have my read-back features the same way in it. If I want to hit Play and have it read, this is the feature-- you can see how this box is opening up with all the highlight features and the translate features. If I don't want that to show up, I can just turn it off right here, but I can hit my Play here again.

**Narrator 2**: ...stood on the deck of S.S. Rajula.

**Jamie Keet**: And there's a couple other options that you have in this, and that's through--

**Charmaine**: Okay, so we actually didn't show the whole video, but mainly it’s-- That should give you a pretty good idea of what this Read&Write software is all about and what it does. We'll actually share the PowerPoint with all of the participants at the end of the presentation, and that will have links to the videos in their entirety if you want to play them or replay what we've shown now.

### Braille displays

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**Charmaine**: The next kind of accessible reading technology is called a refreshable braille display. And what those devices are-- They're basically-- They can be thought of as like braille computers. I think that's the easiest way to think about something like that. They're devices that allow for text or braille files to be displayed in a braille format. So something like a Word document or a PDF, or any kind of file type can be opened up on one of these devices and displayed and the words will be displayed in braille for people to read by touch with their fingertips.

So instead of you or any sighted person looking at a monitor, they would be feeling the braille, the words in braille on this device. And depending on the kind of display being used and the size of it, you're not looking at a big monitor where you can see all the pages all at once. Only a single line of text or a few words can easily be displayed to the user, can usually be displayed to the user at one time. And the user has to repeatedly scroll down through a document line by line to have the display refresh and show the next block of text to be read. So, for instance, to give you an example, I'm doing this presentation right now with a braille display, and I'm reading my notes and it's displaying, you know, let’s see, I'd say about ten words at a time, and I'm having to read these words and press a button to advance to the next ten words or so for it to display. And so it's constantly-- I’m constantly having to scroll down.

And these devices are quite costly. In fact, they cost above $2,000. And in most cases, there's currently a lot of work being done in the braille technology space to make these devices bigger and more affordable to ensure that people can read more than one line of text at a time. They're looking at making multi-line braille displays, and also to ensure that these devices can be placed in the hands of more people who could really benefit from having access to them.

### Refreshabraille demonstration

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**Charmaine**: So let's look at a video now which will help to make the concept of using a braille display make more sense and put it into context a little bit.

(Jazz music plays)

**Allison Sheridan**: All right, this is Allison Hilliker, and she is going to show us what a braille display looks like working with an iPhone. And what's the model here, Allison?

**Allison Hilliker**: This is an iPhone 4S. And this braille display is called a Refreshabraille. It's made by the American Printing House For the Blind. The braille display is.

**Allison Sheridan**: Okay. All right.

**Allison Hilliker**: And so braille is a combination-- Each letter is made of a combination of six dots. And so I have dots one, two, three, four, five-- four, five, six on here. And if I wanted to make an A, I'd press one. If I want to make a B, it's dots one and two. C is one and four, D is one-four-five, and so on.

**Allison Sheridan**: Okay, and that would correspond to these little dots we see sticking up right here, right?

**Allison Hilliker**: Right, right. So what I'm going to do here is I'm going to-- I’m in Tweet Lists right now, which is a Twitter app on the iPhone. And so this is-- My braille display is connected to my iPhone via Bluetooth right now. And so...

**Allison Sheridan**: Now, I don't see Tweet Lists open on your iPhone, which is interesting.

**Allison Hilliker**: Now, you do.

**Allison Sheridan**: There it is. Okay.

**Allison Hilliker**: It wasn't open yet. I was on my home screen.

**Allison Sheridan**: Okay.

**Allison Hilliker**: And…

**Allison Sheridan**: No private tweets to be seen here, so...

**Allison Hilliker**: Oh, good.

**Allison Sheridan**: I hope not.

**Allison Hilliker**: Okay. It says “AlliTalk.” I can actually turn the speech off if you want to.

**Allison Sheridan**: No, no, that’s okay.

**Allison Hilliker**: Here's the Compose button, so I’m going to press-- This little button here is like a joystick. I can move it to the right to move the display forward and read what's next, or I can move it to the left to go backward and read the previous thing I’m looking at.

**Allison Sheridan**: Okay.

**Allison Hilliker**: So, okay, if I want to press this button, I’m going to press the button that I was just moving around.

**Refreshabraille voice**: Text field...

**Allison Hilliker**: It says, “Text field is editing.”

**Charmaine:** Okay, so that was a little bit, hopefully that would give you a little bit of an idea of what a braille display would look like in action.

### Screen magnifiers

00:28:08:19

**Charmaine:** Next, we'll look at screen magnification programs, or screen magnifiers. These are for people who still have some remaining sight that's functional and for people who still want to-- who can still read print if it's just made a little bit bigger or if the contract-- or if the color contrast is made differently, they can still read print. They don't need to resort to braille. And these screen magnifiers are devices that allow for users with partial sight to have text and images enlarged and made more visible by changing the color contrast.

An example of-- There are examples of these like standalone magnifiers where you put whatever it is you want enlarged underneath it, like something on paper, some text to put underneath, and then it would just enlarge it. But there are also computer programs that enlarge digital material that's on a computer screen. And an example of a common computer program that does this is called ZoomText, which we’ll show you a video of in a minute. And it also has some basic text-to-speech capabilities that are nowhere near as advanced as screen readers that I showed you earlier. But the text-to-speech on these programs, like ZoomText, they serve only the function of reading the text aloud. So it doesn't speak aloud, the buttons that the users need to use to interact with what they need to do on their apps or on their programs, they mainly function to read aloud what the user selects, which is the text of what they're reading. And it's for people who would like to have the text displayed visually for them to see. And they also need it to be read out loud. Like if they were reading larger blocks of text, for example, to give their eyes a break, they'll need it to be read aloud or they might need to see it at the same time to really get what's being said there.

### ZoomText Fusion demonstration

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So let's look at a video now to illustrate this software. In this video, we’ll show a program called ZoomText Fusion. It's basically a program that's running in conjunction with the JAWS screen reader where JAWS is acting as text-to-speech. So now we'll look at what that's all about.

**Peter Cracknell:** In this section, I’m going to be introducing you to the idea of ZoomText Screen Magnifier, in this case within the ZoomText Fusion product, which is a combination of ZoomText Magnifier with the JAWS screen reading program. So I'm just looking here at a computer screen unmagnified. I've got ZoomText, ZoomText Fusion running at the moment, but with only one times magnification here.

**Screen reader 2:** One, increase zoom level button.

**Peter Cracknell:** So to increase the magnification, I could just use the mouse point and click on the...

**Screen reader 2**: Fusion 1.2, 1.4, 1.6, 1.8 zoom level button.

**Peter Cracknell**: And now you'll see that... You’ll also hear it speaking in the background.

That's the Fusion JAWS speaking in the background there. But the screen is now magnified 1.8 times. And we can, of course, go larger than that. I'm actually going to use the keyboard to do this now rather than the mouse. I'm going to press the Caps Lock key with the Up arrow. Caps Lock is the ZoomText key and the Up arrow is to indicate that we're increasing the magnification.

**Screen reader 2**: 2, 2.25, 2.5, 2.75.

**Peter Cracknell**: And here we are at 2.75. And as we go up to, say, three, now we're seeing just one ninth of the whole screen because we're at a three times magnification. So if you imagine the screen divided into sections, there will be nine rectangles that make up the entire screen. We're seeing just one ninth of that when we're at three times magnification. This is the issue for people that use screen magnification. They can't perceive the whole screen at once. They have to either slide their mouse pointer, which I'm going to do now, to an edge of the magnified screen, which will then scroll under their eyes for them like this.

**Screen reader 2**: Start button.

**Peter Cracknell:** I can slide across the screen using my mouse pointer. I can also control the computer just by using the keyboard. So, for example, if I press the Start button on the computer keyboard...

**Screen reader 2**: Search box edit.

**Peter Cracknell**: I can type W-O-R-D...

**Screen reader 2:** Microsoft Word 2010 Desktop app.

**Peter Cracknell:** You'll notice there's a focus rectangle around the menu item. And as I use my....

**Screen reader 2**: Enter.

**Peter Cracknell**: Enter key will be magnifying.

**Charmaine:** So that was basically a little bit of an idea of how ZoomText works and how somebody would use screen magnification.

## DAISY players and more affordable audiobook players

00:33:43:17

I'm now going to hand this over to Ioana, who's going to be talking about some more technologies and demonstrating some of them for us. She'll start with DAISY player and go on from there.

**Screen reader 3**: Audio now unmuted. Start my video. Video now started.

**Ioana Gandrabur:** Hello, everyone.

**Screen reader 3**: Stop my video.

**Ioana:** It's a pleasure to be here. Jessica, can you just please confirm that I’m showing the right video in terms of the... Yeah.

**Jessica:** Yeah, yeah. It looks good.

**Ioana:** Thank you. Yes. So, I would like to talk to you now about what is called the DAISY players. Charmaine has already mentioned to you the DAISY format, the Digital Access to Information System, which allows navigating through pages, through chapters and sub-chapters,

**Screen reader 3**: C-E-L-A member services has--

**Ioana:** Sorry, I will mute my phone.

**Screen reader 3**: Cap-C Charlie speech off.

**Ioana:** Okay. And these players are probably the most popular players that you might, as librarians, have heard about, are the DAISY players from Humanware, which is the most used brand in Canada. They can be either players like the one you see on the screen, which can use CDs, DAISY audio CDs, and also have access to Internet. And then there are smaller players such as the Victor Stream, which is a more pocket-sized player that only has access to Internet and does not support CDs.

These players, like all technology that’s specially made for people with print disabilities, are quite expensive. They have-- Like the braille displays and the software that's specially created, they, you know, they run in the, I think, $600-$700 range. So for-- We have actually now added to our repertoire of supported players a new player, which you are seeing in my video, and this one is called the Envoy Connect. It's a low-cost player that costs around $100. It, I think, is a very interesting middle choice. It doesn't have all the bells and whistles of the DAISY players, such as speed control of the audio, or you cannot actually really navigate in a hierarchical-- You don't see the different levels and sub levels. You see every single track of the book at the same level. So it has some limitations, but it also has some great advantages. It integrates very well with-- It doesn't have on its own access to Internet, but you can download a software called CELA Connect that we have developed and it's available free on our website. And, in fact, if you're interested, you could probably download it even without having the player and play around with it. Because what this software does, is it allows you to manage books on the player. It connects very smoothly to your account or the patron’s account, whoever it's registered in. And you can also, because it's such a small player, we also let people send it in by mail and have it reloaded by the CELA personnel and then we send it back. So for people that are used to always receiving their books by mail as CDs, they can do that as well with this player. So it's an interesting hybrid, I would say, between a low technology solution that's more low cost, but it also still has the accessibility of each button is clearly marked, and you can recognize them by touch as well and you get audio feedback for every operation of the player, as you shall see in a moment.

### Envoy Connect demonstration

00:37:56:07

**Ioana:** So I will demonstrate the player a little bit. I will press the Power and Play button, which you can see. It's the biggest button. And the first time I touched this player, immediately it was clear to me that this will be the button to press. So I'm going to hold it down.

(device chimes)

Okay, so we shall now hear the--

**Book narrator 1:** A Tree is a Plant by Clyde Robert Bulla. Book Number DB 57883. Copyright 1960.

**Ioana:** Okay. Unfortunately, I cannot stop that beginning. So every time you start the player, it will play the first few seconds of the last book we were reading, and this happens. So now if I move over, above the Play button, we have the Bookshelf button, and this button, if we press it repeatedly, it will cycle through all the books that are available on the player. I should note that we have eight gigabytes of storage here, so there is plenty of room, especially for audio, and you can even add an SD card.

**Guide reader:** Envoy Connect Quick Start Guide. Last updated March 2023.

**Ioana:** So this is another book.

**Book narrator 1:** A Tree is a Plant.

**Ioana:** Okay, so, I just have two books here.

**Book narrator 1:** Book Number DB 57883. Copyright 1960.

**Ioana:** And we have to listen to this again. Right. Thank you. So. If I had more books, of course, it would cycle through all the books and then start over again. I will now demonstrate, for example, the Sleep button or I can even hear the battery status, which normally you would need to have sight to watch the LED status of the battery. But if I hold down the Back button, I will hear three beeps, which tell me that the battery is high.

(device beeps three times)

So, in other words, every operation is accessible. I will now start the playback and demonstrate. You can play and pause, and I will skip forward by pressing quickly the Forward button and it will jump to the next section.

**Book narrator 1:** This apple tree came from a seed.

**Ioana:** Okay, I will go backwards.

**Book narrator 1:** A tree is the big-- Library of Congress annotation.

**Ioana:** I’m pressing the Back button. Now I'm at the very beginning. I press the Pause and Play button again. And so this demonstrated I actually navigated backwards. I could also go forwards the same way. I will demonstrate now that you can also fast forward within a section and I will start playback and you will hear a bunch of beeps. Every beep is 30 seconds-- that indicates that we skipped 30 seconds.

**Book narrator 1:** A Tree is a Plant. Library of Congress--

(device beeps twice)

**Ioana:** So we just skipped a minute. So this gives you an idea about how this book works-- how this player works. So it is an interesting intermediary solution, not as advanced as the full-fledged DAISY players, but certainly a great portable option that integrates in a low-tech... You know, you need relatively few technical knowledge to connect to CELA, so it's very smooth integration.

### Voice-activated devices

00:41:27:22

Now I will mention a bit about another new technology that is emerging for accessible reading. And this one is really an adaptation of a technology that is a mainstream technology, and we're talking about the voice-activated devices, such as the HomePod, the Alexa devices. I hope nobody has any Amazon speakers lying around. Or the Google devices. And these offer great potential because they are user-friendly. You can talk to them, so you don't need to remember any complicated shortcut keys, or also for people with motor limitations, it is a great tool. And already, in fact, Alexa has good integration with Audible and other-- I mean, actually mainly with Audible, because it's Amazon's platform of choice for commercial audiobooks, but it also allows libraries such as CELA to build their own skills that allow delivery of audiobooks and other accessible material too, but mainly audiobooks, whether it's human-narrated or text-to-speech, some of them. So CELA is currently working on the skill. It's not yet currently available.

(device chimes)

That was the Envoy Connect turning off. It's not currently available, but we think and we've heard from other libraries that the adoption rate can be quite high, and people enjoy being able to listen to their books on their smart devices-- on their smart voice-activated devices, smart speakers.

## Accessible reading apps

00:43:19:12

Now, I would like to discuss another aspect of mainstream technology, and these are the accessible reading apps. Once a device is made accessible, such as you have seen with a computer with a screen reader, or similarly with voiceover. And, in fact, I encourage you to experiment if you ever want to find out more, because all the smartphones and tablets have some form of screen reader in accessibility adaptations baked in. A note of caution, if you do try to use voiceover or talkback for Android, make sure that you know how to turn it off because all the gestures that you would normally use are changed. So you don't want to be stuck in limbo.

So once we make the device accessible, then we have the option of using all sorts of apps. This is a solution that, of course, might require a steeper learning curve for your patrons, but it also has more rewards, because once you know how to use a smart device, it opens other avenues. You have accessible apps such as, of course, Audible, or even Apple Books or Kindle work quite well. Assuming the books are-- I mean, I have downloaded a Kindle book that just was scanned images and that was absolutely unusable. So the books have to be in ePub or some other accessible format that Charmaine mentioned, but probably ePub, or basically it cannot be scanned images, otherwise those apps will not work for you. But the two most-- And then there are the specialized apps that read the DAISY format, which is a specialized format that we discussed before. So they would be the equivalent, basically, of the DAISY players, except that they're apps on our smart devices. I will now demonstrate.

There are two main ones that are very popular. They are EasyReader and Voice Dream Reader.

Each has their advantages. EasyReader is free and it has good integration with CELA. It makes it very easy to search books right within the app and to consult your virtual bookshelf where you can place in advance, or the librarian or any support person can place books for you in that bookshelf. And we have easy access to that bookshelf within the app. It reads DAISY books, whether it's text with synthesized speech or audiobooks that have their own human-narrated books, and I will show it to you a little later.

The other great alternative is Voice Dream Reader. It doesn't integrate as easily with CELA. You would basically-- you can still add books right to the app, but you would need to navigate on a web-browser-like interface and you have to log in, put in your username and password every time. So it is less user-friendly in terms of adding books from CELA, but it has, as you will see, a very elegant interface. I would say it's, in some ways, more robust. It has very interesting adaptations for font and focused reading for people with dyslexia and other related disorders.

So these are the two. It is also, I should say, that Voice Dream is not free. It is available now only by subscription. It was a recent change and I wasn't able to find out exactly how much it costs because I already have the app. So every time I try to check, it tells me that I already have the app, but it is, I think it's around $60, $70 a year. And all these apps, of course, allow people to read using their braille displays as well, as a side note. I will now demonstrate the EasyReader app. Let me try to stop the video.

### EasyReader demonstration

00:47:35:00

(device beeps)

Oh, okay.

**Screen reader 5:** Speech on-- Active speaker avatar-- White captions-- Record-- Share. Chat-- Raise my hand-- A participant-- Stop my video.

**Ioana:** I stopped the video. I will now share my screen so I can demonstrate the use of the EasyReader app. Okay, you should now be seeing my Zoom screen. I will open the EasyReader app.

**Screen reader 5:** App Switcher. Voice Dream. EasyReader active. Picture in picture displayed. EasyReader 257.

**Ioana:** Yes, please let me know if there's any problem with seeing the app. So, EasyReader-- Note that I'm using voiceover so all my gestures are modified. In order to select anything, I will double tap, and I can swipe left and right to cycle through the different controls on the screen. I will demonstrate the integration with CELA.

**Screen reader 5:** Video-- Book information-- Side menu-- Side menu-- Side menu-- My books-- Manage-- C-E-L-A Library.

**Ioana:** So right away I've put it at the top.

**Screen reader 5:** Waiting for... ellipsis. C-E-L-A Library. Log out-- Direct to player bookshelf--

**Ioana:** It remembers my log-in info, which makes it much easier for a patron that doesn't need to worry about remembering their credentials.

**Screen reader 5:** Direct to player bookshelf.

**Ioana:** I could use Search or Browse.

**Screen reader 5:** Search or Browse. Keyword search.

**Ioana:** I could ask a keyboard search and I would need to type in a term. I could also browse by category.

**Screen reader 5:** Browse by category. Canadian authors, fiction.

**Ioana:** You know, so I could double-tap on this one and you would see all sorts of...

**Screen reader 5:** Hunting By Stars.

**Ioana:** So I could now double-tap and borrow a book. For example...

**Screen reader 5:** Return to Jalna. Whiteoaks-- Return to Jalna.

**Ioana:** I will just double-tap on the book...

**Screen reader 5:** Whiteoaks of Jalna saga-- Return to Jalna, Mazo De la Roche. Borrow button.

**Ioana:** So I will double-tap on Borrow.

**Screen reader 5:** Please wait.

**Ioana:** And the book should be added...

**Screen reader 5:** Download button.

**Ioana:** It should be added to my bookshelf.

**Screen reader 5:** Begins during World War-- Download-- Open as stream, button-- Back button.

**Ioana:** I will now go back. I don't want to start downloading the book. I will return to the books that I already have downloaded Going up.

**Screen reader 5:** Back button. Back button. Side menu. Side menu, button. Side menu.

**Ioana:** There you go. My books.

**Screen reader 5:** Please wait. Empty list. Wapke: Nouvelles. Michel Jean.

**Ioana:** Okay, so these are books that I have already downloaded on my device.

**Screen reader 5:** Wapke book-- Poussière book-- Patience dans l’azur--

**Ioana:** I'm looking for a book that we could...

**Screen reader 5:** Patience dans l’azur-- Dialogues sous le ciel-- Vendredi book-- Wool omnibus. Silo Wool Ser--

**Ioana:** Okay, here we go.

**Screen reader 5:** Loading. Ellipsis. Please wait. Alert. C-E-L-A. Close button.

**Ioana:** Oh, this one didn’t want to move. This is why, I mean, sometimes it works, it's quite elegant with the interface, but it is a little more finicky.

**Screen reader 5:** Button. Vendredi. Wool omnibus.

**Ioana:** Huh. Why doesn’t it want to play the book? That would be a pity.

**Screen reader 5:** The title is being processed and will be-- Close.

**Ioana:** Well, yeah, it should be available. Let’s try another one. It might be in French though. Okay, well, this one plays. So as you can see, we can control the speed, we have different buttons for navigation.

**Screen reader 5:** Navigation settings. Button next, book default, button play previous book navigation button.

**Ioana:** I could, for example, show you all the different headings, I could go straight to-- And now, for example, I can play and stop.

(playback in French)

**Ioana:** Okay, I paused and I can change the speed.

**Screen reader 5:** Fifteen seconds. Language default. Words-- Charac-- Audio-- Heading 1 only--

Audio speed 225%.

**Ioana:** Okay, that's very fast.

**Screen reader 5:** 125%.

**Ioana:** So you can see I can control the speed and then resume playback. So this gives you a sense of how the EasyReader app works. I'm not sure how we're doing with time. I could give you a quick-- Maybe I don't think we'll have time to show you the Voice Dream reader app. What that one does very well, it has... The controls are nicely represented for people with using voiceover so the Play button, if you swipe on it, it also becomes a Speed control button. So, in other words, you don't have to go and find many different buttons. One button performs multiple functions, which can be useful or confusing depending on the type of patron you're dealing with. It has great-- You can annotate, you can select text, export, highlight a little bit like you would do in the Read&Write app. You can touch the screen, you can turn--

If you don't have voiceover enabled, you can enable a finger reading so that you can touch a word and have it read out loud for you. So, again, people with learning disabilities can take advantage of those kind of features.

I should mention that there is the Speechify app that is popular for people using dyslexia. I don't know it as well because I haven't tried it using voiceover, but it is also a subscription app. So this gives you a bit of an overview of how one could use accessible reading apps, specialized accessible reading apps, on your smart device, smart tablet or phone.

Moving on, I will now talk to you a little bit about people with physical challenges, and we can have a look at what kind of adaptations they use in order to have access to print. So, first of all, like we said, of course, the voice-activated devices can be an interesting... Oh, what's happening here?

**Screen reader 5:** Live broadcast. Okay button.

**Ioana:** Okay. So... Sorry, my phone is chatty. Okay, so there are modified keyboards. And in fact, one of the things that you probably already might have encountered by accident,

we have the sticky keys for people that have trouble pressing multiple keys at once. On your computer, if you press the Shift key multiple times in Windows, it will offer to activate this function instead of having to press, let's say, Alt-Control-Delete all at once, you could press them one at a time. And so this way you get around the limitation or the challenge of pressing multiple keys. That's why they're called sticky keys.

You have modified keyboards that can suit people's needs. They can be either larger or adapted to being used with one hand. We can use handheld switches that can be connected either to your computer or to your tablet or phone. They're called switches and they can be adapted to be activated with various body parts. And you can even use what is called sip-and-puff technology. So you can have a type of switch that you can use. It's kind of like a straw and you can inhale or exhale, and this is how you move, how you move to activate the switch left and right, or back and forward.

You have voice dictation, of course, we all know the Siri dictation to some extent, but there are, you know, Dragon Naturally Speaking and also voice control on the iPhone and its equivalent on Android that allow you to execute commands and select different controls or apps or icons on the screen using only your voice. It has a bit of a learning curve, but basically it allows you to use any app without needing to touch your device. Eyegaze technology, so eye tracking is also a good option for people to control their devices. And so these are several adaptations that can be used to read accessibly.

## Where to Learn More

00:56:14:10

We have here, finally, further resources. I know we covered a lot of material, so you can come back and have a look more in depth. CELA has a great page about compatible devices and where it gives you an overview of all the different types of devices that can be used with CELA’s materials. We have CELA’s Accessible formats page, which goes over the various formats that we have discussed today be it DAISY, ePub, braille and others, and also gives you an overview of which devices can be used to read these formats. We have an interesting resource about accessible publishing resources so guidelines about how to create what we call “born accessible” books and guidelines for publishing books that are accessible. And the same with inclusive publishing. And Bookshare classifies various tools for various disabilities, and they have ratings for usability for various apps.

So I hope this gives you a sense of what is available, and I will pass it over to Jessica, and looking forward to hearing your questions.