THE BRAILLISTS FOUNDATION

BRAILLECAST PODCAST EPISODE 31

Using Braille On The Internet

7th September 2021

Matthew Horspool: Welcome back to Braillecast Extra, after a slightly longer than usual summer break. This week, Using Braille On The Internet, a session presented by Dave Williams and introduced by Ben Mustill-Rose. It was recorded on Tuesday, 7th September 2021.

Ben Mustill-Rose: Good evening, everybody, and a very warm welcome to this evening's Masterclass, brought to you by the Braillists. This is the first of our new season of Masterclasses after our summer break. We took about a month off to recharge the old batteries, but we're back in the saddle and raring to go. Lovely to see some familiar names here, but also lovely to see some new names that we haven't seen before.

So, a very warm welcome to one and all, regardless of whether this is your first Braillists event or not.

This evening's Masterclass is all about learning braille on the Internet, how to interpret some of the jargon that your braille display tells you when you're browsing the web, some screen reader specific tips and some strategies in general, just to help you to be as productive as possible.

Now, I don't want to give too much away, because we've got a great guest lined up today, a name and a voice that will be familiar to many people, both involved and not with the Braillists. It gives me great pleasure to welcome the chair of the Braillists Foundation, Dave Williams.

Dave, how are you doing?

Dave Williams: I'm really well. Good evening, everybody, and a very warm welcome to this session concerned with using braille on the web. We're going to do things slightly differently tonight. Often we talk at you for 40 minutes, then we try to cram in as many questions as possible towards the end of the session. So, we're going to try to do things a little bit differently tonight and encourage your participation, because we see these sessions as being very collaborative. Often there's a lot of knowledge and learning around the table and I think it'd be great for everybody to share what they know. Ben and I always say that we come away from these sessions having learned something.

You'll be aware, of course, that you can read almost any accessible web page or app by touch using a digital braille display and that can improve your understanding of content and it can also free your ears to hear the people and environment around you.

In this session, what we're kind of aiming to do really, is to offer some tips for getting the best from accessing the web with braille and we're not for a second suggesting that you access the web exclusively with braille, but where does braille present challenges and problems?

My objective for tonight is that hopefully by the end, we'll recognise how to negotiate web page structure, recognise various text styles and control types in braille. We'll also hopefully gain an understanding of how to navigate web content with a braille display and become familiar with tools for re-flowing, searching content on the web.

Many mainstream smartphones, tablets and laptops either include, or can easily have added, screen reading software, that will quickly and easily convert text shown on web pages to braille. For example, some of you might be iPhone users, familiar with VoiceOver and of course VoiceOver has support for many braille displays that you can connect via Bluetooth and I think we've got a separate Masterclass on how you do that.

Also another example of a screen reader on a mainstream device might be JAWS running on Microsoft Windows.

You can also access the web in braille using a specialist braille note taker. So, this might be something like a BrailleSense or a BrailleNote and very often on those devices, they include a lightweight, sort of stripped down custom web browser or even specific web surfaces that have been tailored to work with a particular thing. So, for example, on the old BrailleSense, they would have an RSS reader, so that was for searching for and reading news feeds. On the new braille Mantis Q device from HumanWare, there is support for some library services. Those experiences are created on those specialist devices.

I think it might be useful at this point, just to have a brief discussion to explore some of the pros and cons of that.

What do you think are the pros and cons of accessing the web with braille using screen reader running on a mainstream platform like an iPhone or Windows, versus, say, accessing the web on a specialist braille note taker?

Ben Mustill-Rose: Dave, I think the message here is no right or wrong answers. It's not a test.

Dave Williams: Exactly. No, it's not. The question is, what do you think are the pros and cons of accessing the web using braille, using a mainstream device with a screen reader, versus a specialist braille note taker. And I really want to emphasise that as blind people, we need a wide selection of tools and techniques, to really negotiate what can be a very challenging environment. All of these tools are valued immensely. So, this is not to be judgemental about somebody else's choice of technology. I just think it's important to have an open and honest discussion about what some of those pros and cons might be. So if anyone has any thoughts about that, go ahead and raise your hands.

Ben Mustill-Rose: We're going to come to Carla in a moment, but just to pick up quickly on what you said, Dave, I think the key is not being judgemental, because actually what you find is that there are so many bits of technology, and for anyone who's unaware, Dave and I both work in the tech industry in different jobs and there are so many different pieces of technology, that actually the idea that there's one perfect thing, it's just not true.

So we're going to come to Carla.

Carla Savage: The thoughts that I have are with things like note takers and stuff. They're very cut down, as you said, and they have the specific function that they do, be it look at a book service or whatever, and maybe the expectation nowadays sometimes is that people want more than that. They want the mobile on-the-go solution and actually sometimes the note takers themselves are not always able to deliver and keep up with the technology.

So, that's where a Windows machine might be more suitable in the fact that it is more able, because it's mainstream, to cope with all sorts of varieties of websites and web pages.

Dave Williams: That's a really important thought and to add to that, it's also worth recognising that actually braille note takers can do both of those things. So, you can use the built-in software on your braille note taker to access a website and there might be benefits to doing that. There might be fewer distractions, for example, if you're using a mobile web browser. It might offer you a slimmed-down experience, that might mean you could be more productive and more efficient, but also all the braille note takers support screen readers. So, you can put your braille note taker into a terminal mode and use it with your mainstream platform, having the best of both worlds.

I see there is another hand raised and we'll come to that shortly, but I'm going to press on because I know we've got plenty to get through.

So, when sighted people visit a web page, they don't read the entire page in a linear way from top to bottom, in the way that a screen reader might do if you just let the page load and let your screen reader speak. Certainly with braille, I think, most of us are going to be using single line braille displays with our screen readers and that again can be a very linear experience.

So, you really want to be able to develop some techniques that allow you to go straight to the information that you need and to develop those skills so that you can do what a sighted person does and get the thing that you want without having to read everything else.

Now, that sounds like a lot of work but there are distinct benefits for using a braille display with the web, not just using speech output. Many of us are using speech, but actually if you're using braille, did anyone have any thoughts about what some of those distinct benefits might be?

Ben Mustill-Rose: We've had a couple of hands raised. Steve and Tina, you both had your hands raised.

While we wait for hands, one interesting thing to consider is that they are designed, for want of a better term, for us. I sometimes feel like I'm having to use technology that hasn't been designed for someone like me and that can definitely be a bit of an uphill struggle, but the idea of a note taker is that it is designed for blind people.

Dave Williams: Jessica, let's come to you.

Jessica Beal: I don't currently use braille on the web but what you were just saying at the beginning got me thinking about some of the things that I find difficult on the web at the moment using just the screen reader and that maybe if I did use my braille display, then like sometimes if you're on a website that's really complex and you know that there's buttons that you've got to get to and you can't find what they are, with a braille note taker, it might be easier. I don't know if this is how it works, because I've never tried it, so this is just me thinking and hoping that maybe that's a thing for which it would be beneficial.

Dave Williams: I think the big benefit there, Jess, is actually you can dynamically control your reading speed, so when you arrow down with your screen reader and it burbles a whole load of stuff and then you go back and you might go up and down a couple of times, going, "What was that again? What was that again?" Then it rereads a whole load of stuff. Of course you can go and you can slow it down and there are keystrokes to move by character and by word and so on, but all that takes time. Whereas when you're actually reading braille, you can speed up and slow down very dynamically in a way that I think sometimes can be tricky to do with speech.

The main reason why I use braille for the web is spelling. I'm going to put you on spot, Jess. Do you know how to spell Pfizer? You don't have to answer that.

Jessica Beal: Well, I did because I spelled it wrong, so I know it's not how you think you spell it.

Dave Williams: Yes, and I didn't know how to spell it and I was spelling it wrong and it was only by using braille that I discovered it's P-F-I-Z-E-R.

Jessica Beal: Yes, my mum told me.

Dave Williams: Mrs. Williams has given me a challenge to share with you all and it's another example of where having braille on the web is really useful.

Go and search for a recipe, find yourself a nice scone recipe or dare I say it, bread. Let your screen reader blast through that and listen to that with the TTS and see how much of it you take in. When you're reading a recipe in braille, that can make a huge difference, especially when the typography isn't correct, where they've used X instead of a multiplication sign or if you hear teaspoons and tablespoons which are often abbreviated to tsp and tbsp. I can never hear the difference when a TTS is going at those at speed.

Try that with speech and try it with braille and I think you will hear a difference.

Not quite the web but let's turn to email now. I used to get emails from somebody who I thought was called Nore Ply, until I realised when I read it in braille that it actually said "No reply" not Nore Ply. It was my speech synthesizer that was mangling the pronunciation of "No reply" which was written as all one word.

So having those spellings right under your fingertips, even if you only look at it occasionally and for the most part you're using speech, I think can be tremendously empowering and I've already mentioned of course the benefits of freeing up your ears to hear the people around you, such as if you wanted to look up some information in a meeting, maybe you needed to Google something. This happened to me this morning actually. We were planning some events for October and we needed to find out a specific piece of information. Ben was talking and I wanted to continue listening to what Ben was saying, but at the same time I wanted to try and find out a piece of information and had I let my screen reader speak, I wouldn't have been able to hear either of them because they would have been talking over the top of each other.

Let's get into some of the specifics of what happens when you are reading a web page. So, when you arrive at a web page, using your screen reader and braille display, the first thing you'll probably notice is that there are lots of extra letters and numbers that are inserted within the braille and they are there to indicate the visual components of the web page. For example, you might see the letters L-N-K which tells you that the text that you're on is a link. You might see H1, that tells you that you're on a Heading Level 1. On VoiceOver, on iDevices, I think it says HD, for Heading.

Anybody got any ideas what LI might be or wanted to come back on any of the questions that we've pitched so far?

Ben Mustill-Rose: Steve has had his hand up a couple of times.

Steve Pulley: I have one slightly scary thing to share. We used to support the Pfizer company years ago and I don't know how many dozens of times I saw the spelling and when you mentioned, "Could I spell Pfizer?" I got it wrong.

Dave Williams: It's easily done though. I think it really amplifies the point though that there could be so many things that unless you actually read it letter for letter, you just don't know.

Steve Pulley: I did have a braille display at work, a thing made by the people actually at the work. I've got a BrailleNote Touch Plus and initially the first time or first few times on a web page, I tend to paddle down it a line at a time, until you get used to the format of it and then you can start searching for headings or sometimes I'll also go "Next Heading 1", because it gives you "Next Heading Level 1 or 2 or 3" and so on and so on, or you can do a general Next Heading of whatever level. You can do Next Link, Next Button, probably other screen readers can do that too.

I think it's really handy to have the braille as well as the speech, to give you accuracy on what text you've got on the screen. So, on a web page, I use it a lot now. It will allow me to go down the links, finding next link, but one of the other things it's got on it as well is "Find a string in the page." So I can look for "Recordings" and it will show me the Recordings tab. There isn't a Next Tab unfortunately. That might be quite handy. Maybe I'll ask for it in the next release.

It doesn't always render pages extremely well but they've done a fair try with it, I'd say.

Dave Williams: So, recognising what some of the extra information means, I think, is quite important. I gave a couple of examples earlier on, things like B-T-N to represent Button, and it's quite tricky to find a list of all those things anywhere. I was looking for a VoiceOver list and maybe there is one but it wasn't easily discoverable and of course what exactly appears will depend to some extent on which screen reader you are using or which web browser and which platform.

One of the methods that I use is to use initially speech and braille together. So, if you've not used braille on the web and you want to get started, use speech and braille together to help you identify how your screen reader describes these elements in braille. So, if you arrow to a button and look at it on your braille display, then you'll recognise that hopefully in future and that's one way of getting started.

Another technique that is helpful, you mentioned there, Steve, about the way in which web pages are rendered and this can be particularly challenging when you've got very busy web pages. Local newspapers I find are often particularly problematic. The good news is that most modern web browsers, say, Safari on your iPhone or Microsoft Edge on Windows, they have a reader mode. So, on the iPhone, for example, if you go to the top left-hand corner of Safari, there's a button and I think it's called something like Formatting Options. That can basically help reduce the amount of clutter on the page, because what the reader mode tries to do is to just give you the main block of text, the main body of text on a web page. That can also be helpful for speech as well, not just braille, but if you are accessing a web page that does seem to be absolutely riddled with adverts and all kinds of nasties, use the reader mode in your web browser, and the instructions for getting that will be different depending on which web browser you're using, and we'll include some of those in the handout when we publish it, you will find that does make a big difference to reading web pages.

I saw there was something in the chat from Jess.

Ben Mustill-Rose: Yes. Jess has a really good question. Let's say that you're browsing the Internet on your braille display and you encounter an unlabelled button. I guess there are two things there. How is that represented in your experience? She is wondering whether there's a way to get the text of the button in braille.

Dave Williams: The chances are that you will get in braille whatever the screen reader says in speech, as a general rule of thumb. That's not always the case. Sometimes there are characters that don't get spoken by your speech synthesizer. The beauty of VoiceOver is that there is actually a command you can use to manually label controls. So, if you can find out from somebody what that button does or you can perhaps use one of the description features now that you can add to the rotor, where you turn the rotor and switch on image descriptions. Sometimes you can get additional information which might help you. You've got to be a bit of detective, I think, and you've got to employ a number of methods. So, find out what the speech says, see if you could get VoiceOver to recognise any text contained within that object using the image recognition feature of VoiceOver and in worst case scenario, resort to asking somebody, because then you can label it and then once it's labelled, the next time you encounter it, then the label will come up.

I think I'm right in thinking, Ben, is it two-finger double tap and hold to label?

Ben Mustill-Rose: I believe it is, yes.

Dave Williams: That's reading. I'm going to go on to navigation, because obviously that is kind of related to reading but it's a separate task in some respects, because it might be that you want to get to a specific part of the web page and I think it was Steve earlier who said that often he will initially arrow through a page but if it's a web site that you know well, then it might be that you want to use your screen reader's quick navigation keys. Depending on the screen reader you're using, these might or might not work on your braille display. If you have a braille display like the Mantis that has a QWERTY keyboard, then they almost certainly will work, depending on your screen reader.

The quick navigation keys are things like H to jump to the next heading and then you add the shift key to go back to the previous heading. I would urge anyone to expand their knowledge of quick navigation keys, because while you might know a few of those obvious ones, there might be some that you're less familiar with. So, for example, what is your screen reader's key to go to the next landmark? Many websites hopefully are starting to use landmarks. I know that H for Heading is certainly the most popular one. You might think that L would take you to the next link. It doesn't always. If you're using NVDA, for example, on Windows, it's actually K that takes you to the next link and I think L takes you to the next list item.

Ben Mustill-Rose: I think it's list, yes.

Dave Williams: I would urge you to become really familiar with your screen reader's quick navigation keys and a tip that you can certainly use in NVDA as well is, when you're on a web page, if you press the NVDA key and number 1, that puts you in the input help mode or the keyboard help mode, and I think this also works in JAWS. Then you can just press the alphabetic keys individually and your screen reader will announce which element they will jump to, whether it's landmark, link, list item or some other object.

I'm just going to take a pause to see if we've got any hands.

Ben Mustill-Rose: I've noticed that James Bowden has his hand raised.

James Bowden: I would absolutely second what Dave just said about learning your quick navigation keys, absolutely vital for rapid navigation of web pages.

The other ones which you might really find helpful are knowing what it means by Heading Level 1, 2, 3, 4, etc. Typically there should be only one Heading 1 on a web page. Doesn't always mean to say there is. But if you can just press the number 1, you're likely to get to the very main part of the web page.

Dave Williams: Similar to that, on Google particularly and other search engines, they're usually at Heading Level 3, I think.

James Bowden: The actual search results inside that, yes.

Dave Williams: So, if you do a search on Google and then press Enter and then the page of results comes up and if you want to get past a lot of the guff at the top of the page, hitting three will quite often get you to the results and if it doesn't do it the first time, two or three presses of the number three will take you there.

Ben Mustill-Rose: If you want to skip the ads on Google, you can press number two to go straight past them.

We've got Rachel with her hand raised.

Rachel Usher: I use just iOS, I don't use JAWS at all.

Dave Williams: That's next in my notes.

This might help. The main tool for navigation with VoiceOver on Apple devices is the rotor. Firstly you can go into VoiceOver and you can tell VoiceOver what you would like in your rotor, so do you want links in the rotor, do you want headings in the rotor, do you want controls in the rotor? I have all of those in the rotor.

Then when you're on a web page, then you turn the rotor and on your braille display, use space and dots 5 6 to turn the rotor clockwise or space and dots 2 3 to turn the rotor anti-clockwise, and that changes what the down arrow is going to do on your braille display. So, when you turn the rotor with space and dots 2 5, it might say "characters", "words", "lines", "headings", "links", "controls" as you keep pressing it. When I log my COVID test results online, I always turn the rotor round to "controls" because I know that that page, the things that I need to deal with are controls. There's a form, I need to choose for whom I'm entering the result, I need to find the "Proceed" button, I need to find the button that allows me to scan the QR code from the test strip and that works really well on that web page.

Now, I also know that on certain other web pages, I want to be able to move via "link", so I will turn the rotor to be links and then that means that I can use the down arrow to jump to the next link and the up arrow to jump to the previous link.

So, as well as changing what the physical up and down vertical flick does on the touch screen, it also changes how the up and down arrows behave on your braille display, because they map to that same function.

Hopefully that makes some sense.

Ben Mustill-Rose: No more hands, so we're good to go on.

Dave Williams: Using the rotor with space and dots 5 6 or space and dots 2 3, that will change what the up and down arrow will do. You can also change your volume and speed and stuff like that using that technique and then you can determine which items are on the rotor. It's not as efficient as using quick navigation, but it does mean that in certain situations, you don't even have to remember a key stroke. If you just know how to turn your rotor and you know how to arrow down, then actually just with those two pieces of information, you can get to quite a lot of things pretty quickly using your braille display and it does mean that you don't have to keep moving your hands backwards and forwards from the braille display to your QWERTY keyboard. We talked a lot about quick navigation keys and screen reader commands that you can do on a QWERTY keyboard, but actually ideally what you want to try to do as much as possible is to minimise the amount you have to keep flicking your hands backwards and forwards, backwards and forwards.

Ben Mustill-Rose: Great question from Jess in the chat. What does "controls" mean on the rotor?

Dave Williams: "Controls" refers to buttons, edit boxes, check boxes, radio buttons and combo boxes. So, all of those elements are included within "controls" so when you turn the rotor to "controls", if you arrow down, VoiceOver will jump to the next one of those things, whether it's a button, a check box, radio button, combo box or edit box.

James Bowden: If I could add to that, so basically it means things with which you can interact.

Dave Williams: Yes, that's true.

I'm going to move on from the quick navigation and the rotor and I want to talk briefly about what I'm going to call list utilities. So, screen readers typically include a function that allows you to list elements on a web page. Now, on iOS devices, this list is pretty basic because it just gives you a list of every element on the web page in a very linear way, but actually it's very easy to work with on a braille display. What happens is, and, Ben, you can tell me if I'm wrong, I think it's a two-finger triple tap brings up the list? He's going to just check it.

Ben Mustill-Rose: That's exactly what he's going to do, isn't it? I'm not entirely sure off the top of my head.

Dave Williams: I'm not even going to pretend to know every command in every screen reader, folks, because it would only be 30 seconds before I came unstuck. There's a gesture you can perform, and I'm pretty sure there will be a braille keystroke as well that will map to this. If there isn't, you could certainly go in and assign one. You will get a list of all the elements on the page and so that avoids anything that's moving on the page, any pop-ups, things like that. You will just get a list of every element on the page and most importantly, at the top of that list, there is a search box and if you get into the search box, you could then narrow down that list by typing into the search box the thing that you are looking for.

Ben Mustill-Rose: That is a two-finger triple tap indeed, nicely remember.

Dave Williams: Okay. Now, if we go to Windows, you can be a bit more sophisticated about the lists that you're able to access. So, in JAWS, for example, if you press the JAWS key and Function key 7, I think you get a list of links. In NVDA, if you press the NVDA key and Function key 7, you get a dialog with a radio button that allows you to control which elements are listed, whether they be links, headings or other types of elements on the page. Often, these dialogs are much easier to negotiate from a braille display.

So, if you've been told that there's a link to our newsletter, for example, on the web page and you haven't been able to find it using some of the other means, then actually using the list of items might be helpful for that. It also might be a helpful way to get an overview of what's on a web page by listing the headings, for example. That's something I will do on a very busy web page. If you were to search for the Kings of England on Wikipedia, for example, that's a massive page and a sighted person would just grab the mouse and start scrolling until they see the thing that they're looking for. We would either have to use a quick navigation key, maybe pressing H or turning the rotor, or another way of doing it would be to use our screen reader list utility that provides us with an index of items that are found on the current web page.

Ben Mustill-Rose: We've got a question from a phone number ending in 596.

Michael: You were talking about the Kings of England, this is an example, what you could do is use your screen find, like your JAWS find.

Dave Williams: That's next on my list. That's exactly right.

So, in VoiceOver, it's space with F, or in JAWS and NVDA is Control and the screen reader key and F. That would let you search for a specific thing. So, if you wanted the first Charles on the page, for example, yes, you could certainly do that and that's a great way from your braille display. I find that particularly with VoiceOver using space and F from the braille display is a great way of finding stuff, because that works everywhere, not just on the web. You can use that in Settings and I think it was Scott Davert told me that, that you can use the VoiceOver find feature from the braille display pretty much anywhere in the system.

That's a really good tip, thank you very much. We didn't get your name.

Michael: It's Michael.

Dave Williams: That's great, Michael, thank you so much.

I now come to the fun issue of form filling and of course not all forms are created equally. Often, as screen reader users, we know we've got to switch modes to interact with edit fields and if you're not in the right mode and your braille display has a cursor routing key, then often you can use your cursor routing key to activate controls in your form. That might be to tick a tick box, or select a radio button, or to just activate a control.

So, certainly learn the command that enables your screen reader to tab, because that's the way that you navigate between controls. So, on a QWERTY keyboard, you'd hit the tab key to go to the next form control. Find out what that is for your particular screen reader. Some use space + T and then space + shift-T might take you back to the previous control.

You might also be required to write text into a form and certainly in the case of JAWS, I think, sometimes computer braille is expected. So, we are going to be having a session on computer braille in the next few weeks, so if computer braille is something that interests you or confuses you, do look out for that session. Basically, the short version of computer braille is no contractions, lower numbers and it's different punctuation and you usually use dot 7 for a capital letter.

If that makes no sense right now, come back for the computer braille session that we're going to be running in a few weeks.

My final tip for forms, and I'd love to hear your tips, feel free to dive in, but every so often you run up against a control that gives you options. I find date pickers are particularly challenging and sometimes the way to negotiate that is to jump to the end of the page, because sometimes the screen reader will add the new information that's appeared on screen to the end of what we see on the page, in terms of the screen reader's virtual buffer. I've seen this a few times, where you have to select a date and as soon as you put the focus on the control, you then have to jump your screen reader to the end of the page, so how you do that will again vary from screen reader to screen reader. It might be space and dots 4 5 6, for example, to go to the bottom of the page. Then start coming back up the page, panning left, to see if there's been additional content added to the page, for example, a date picker or a calendar, where you need to select a date. Then, of course, you're going to need to go back to the start of your page and use your skills that we've talked about already, quick navigation keys, find, all that stuff, to get yourself back to where you came from originally.

Ben Mustill-Rose: Very useful now, given how often you're having to book things in advance, which means you're having to navigate lots of calendars online these days.

Great tip from the chat as well. If you're in a links list, for example, and many other lists, it's also worth bearing in mind that first letter navigation works in those lists typically. So, let's say you're on a website where you want to read a news story and maybe you've got a preview of it and you navigate by getting your list of links up and obviously there are quite a few links on most websites, you might find the Read More link slightly quicker by pressing R than just arrowing through all of the links that are on the page.

Dave Williams: Lots and lots of tips there. Hopefully some of them you'll already be familiar with and maybe there's something new there.

I really would like to open it up for questions or suggestions or comments.

Ben Mustill-Rose: We have Claire Morgan with her hand up now. Then we have Terry-Ann Saurmann.

Claire Morgan: I don't have a braille display at the moment, but if I got one, how would I learn to use it?

Dave Williams: That would depend on which braille display you got and from whom you got it. I would recommend that if you're completely new to using a braille display, it might be worth asking the supplier if they're able to offer some training and some guidance to get you started. I'd also ask around in forums like this and on our email group, which displays people have and maybe try to buddy up with somebody, so that you've got somebody who's perhaps got a little bit of experience, who might also be able to share with you what they've learned. Finally it would really depend on whether you intended using the braille display as a stand-alone device or whether you wanted to use it with a smartphone or a tablet or a computer. That would very much change the way in which you would use that device and it might change where you seek help as well.

Claire Morgan: Can I use it with a computer or a phone or something?

Dave Williams: Yes. If you're going to use it with a screen reader, on a smartphone or a computer, then it might be that the supplier of that screen reader also has training available. I should also mention as well that RNIB in the UK offers a Technology For Life service and that's a free service where you can get support with technology products, not just braille displays, and if you contact RNIB and ask for the Technology For Life team, then they also will try to assist.

Ben Mustill-Rose: We're going to come to Terry-Ann next and then Lindsey.

Terry-Ann Saurmann: I don't know if this is exactly in the same area that you're talking about, but from one braille display to another, there are minor differences in certain symbols that you might need to use, like for an email, and one that comes to mind is the at (@) sign. It's not the same throughout the braille display world and that can be confusing.

Dave Williams: It can, you're right. Tonight we're mostly talking about using screen readers on mainstream devices for using with a braille display on the web, so VoiceOver on an iPhone or JAWS or NVDA on Windows, primarily, but of course BrailleBack on Android is an option. The point is that how that at (@) sign is rendered will depend on the braille table selected in your screen reader. So, if you're using UEB, which increasingly is the standard code that is used across the English-speaking world, then the at (@) sign should appear as dot 4 followed by the letter A, A for at, so dot 4 A, is the at (@) sign in Unified English Braille. If you're using a different braille code, then what passes for the at (@) sign might well be different. If you're using computer braille, and as I mentioned we're going to be doing computer braille in a couple of weeks hopefully, it really is a function of your screen reader, rather than the braille display, unless, of course, you are using a braille note taker and you're using the built-in web browser that you find on that note taker. So if you're using a BrailleNote or if you're using a BrailleSense and you're using their built-in web browser, then how the at (@) is rendered will depend on that device and the settings in that device. For the most part, when we're using braille displays with mainstream products like smartphones or laptops, then the symbols are determined by the screen reader.

Ben Mustill-Rose: We're going to come to Lindsey and then Iain.

Lindsey Rowlands: What I wanted to know is, I've known braille for many years but I haven't used it very much, but now that I've lost all my sight, I've started using it a bit more. I don't understand computer braille but it is great that you're going to be doing a session on that. In the notes for this meeting, will you be putting any of these braille contractions in for links and the quick navigation keys?

Dave Williams: Yes, we will. It won't be exhaustive but the most popular ones will be in there. The language that screen readers use to represent elements on web pages, for example, NVDA I think shows "H1" for a Heading level 1. VoiceOver, I think, shows it as HD. We will include that kind of thing. We'll also include some of the quick navigation keys as well and then the instructions to move to the different types of elements. If there's anything else that you want specifically in there, we are happy to add it.

Lindsey Rowlands: I use SuperNova but a lot of time when I'm doing the web browsing, I tend to use my iPad but I've found it difficult to find quick navigation keys for an iPad. I'm not really sure where to look for them.

Dave Williams: What kind of braille display do you have?

Lindsey Rowlands: I've got a second-hand BrailleNote Apex, which I'm very impressed with, because many years ago I used to use a Perkins. It's much better than that.

Dave Williams: Sure, and does it work with your iPad?

Lindsey Rowlands: It does, yes. I have connected it but as yet, I've not really had a play around with it too much. Again, I didn't know about the at (@) and you've just answered that question for me.

Dave Williams: When you're on the web, what you can do is press space with dots 5 6, and that will turn the rotor clockwise and you will go through the various things that rotor has on it, which might be characters, words, lines, headings, controls, links and so on, and when you've moved the rotor to, say, links, that will then determine what arrowing down will do. So, when you arrow down at that point, it will take you to the next link, for example. If you set the rotor to links, then arrowing down will just go by links.

Lindsey Rowlands: Yes, that's brilliant. Thank you.

Dave Williams: If you get stuck and you've got questions, do just pop a line to the help address or join the Braillists forum. We try to be a friendly, helpful bunch and if we haven't got the answer, we're try to find you the person who has.

Lindsey Rowlands: Brilliant, thank you.

Ben Mustill-Rose: That address is help@braillists.org.

We're going to come to Iain next and maybe time for one more, but no hands raised as of yet.

Iain Lackie: If you're feeling brave, rather than using the rotor, you can set up keys that will allow you to jump back and forward on headings, and back and forward on links, and it saves you fiddling around with the rotor. This is something that I've found very useful.

Dave Williams: Yes. There's a lot of customisation now, isn't there, in the VoiceOver? If you go to Commands, you can assign your own commands to perform those functions. So, for example, it's a not a braille-specific thing, but I use two-finger flick right to take me to the next heading and I've set that up as a custom gesture in VoiceOver. You're absolutely right to flag that, but maybe for the little more adventurous, because you can break things doing that.

Iain Lackie: Yes, but if you do, it's very easy to reset things back to what they originally were.

Dave Williams: Well, that depends what you break.

Iain Lackie: With a braille display.

Dave Williams: Oh, I see, yes. If you un-pair your braille display and tell your phone to forget your braille display and then bring it back and re-pair it, then I think it loses any changes that you've made, if you get into trouble.

Ben Mustill-Rose: Great tip, glad we could get you on.

We are about to wrap things up now and I'll pass back over to Dave briefly for any final words.

Dave Williams: So, I know some of this stuff seems like a little bit fiddly and a bit of a faff but I honestly think that using braille with the web is helpful for improving understanding of spelling, not just Pfizer, but other words as well. Reading telephone numbers, not just on the web, but anywhere, it just makes much more sense in braille, to me, than listening to a speech synthesizer trying to read that out and the same is true for addresses and of course when it comes to things like email addresses or hashtags, then precision is really important. So, dot 4 A is at (@). The little bridge thing for the hash sign, dots 4 5 6, which is a bit like the H sign, followed by dots 1 4 5 6. That's another symbol that you might see kicking around. Discovering those web elements and how they're represented, that's really dead easy to do with a combination of speech and braille. Making use of your browser's reader mode, and on Safari, that's the Formatting Options button top left and you'll find it in there, and that helps to strip out some of that extraneous noise that you find on a lot of web pages.

There will be a handout where I will endeavour to include a bunch of the most popular quick navigation keys and also some of the screen reader verbosity that you find when you're navigating a web page.

Great to have a really interactive and lively session, that's what I was hoping for, didn't want to talk at you for 45 minutes, I wanted everybody to be involved and it feels like that has happened.

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In the meantime, on behalf of everyone at the Braillists, thanks for listening and bye for now.

The costs of producing this episode were defrayed by a grant from the Activate fund of the Winston Churchill Memorial Trust. For more information, visit wcmt.org.uk.