

## **Transcript for Accessibility of AI Interfaces**

**2023 ETUG Fall Workshop: The Evolving EdTech User (November 10, 2023)**

**Presenter: Luke McKnight**

MODERATOR:

And I'd like to introduce our next session. Accessibility of AI Interface by Luke McKnight. Luke is currently an assistant technologist at Langara College. Now off to Luke.

LUKE MCKNIGHT:

Hi everyone. Yeah, my name is Luke McKnight. I'm an assistant technologist at Langara. I work with students, staff, and faculty using assistive technology to access Langara's digital spaces. I just want to acknowledge I'm presenting from campus today, which is on the occupied territory belonging to the Musqueam First Nation. Langara has received the name snəwəyət lələm from the Musqueam, which means house of Teachings in həŋqəmiŋəŋ. I would encourage you all to reflect on whose land you live on and take a moment to consider if this action is performative for you, or if you have the desire and morality to condemn colonialism, both past and present. In terms of what I want to talk about today, let me just get screen sharing organized here and hide my meeting controls. Fairly straightforward, the accessibility of AI interfaces.

In July of this year, a colleague and I were talking a lot about how we'd gone to a lot of webinars about AI, and talking about ethics and privacy and academic integrity. We felt no one was really talking about the accessibility of these tools. It took us longer than I'd like to admit for us to realize, well, maybe I should just do that. Yeah, what I've done here. I just want to present some of the brief findings.

So just very briefly, run through the tools... Hide meeting controls. Run through the tools, talk a little bit about my testing process, talk about my findings and just some things going forward.

When we talk about AI, it's not the AI itself, it's the interfaces, the web platforms that you access, your ChatGPTs your Bards and your Bings and things through. I think we all know that no one, including the devs, know exactly what happens inside the AI black boxes. But what I'm talking about are the chatbots and the generative AIs and things like that. I'm sure we know most of the names on this list. We came to this list based on what's in the news. What are people using, what do people have questions about. Added a few that claim to be more education focused, but this is where the bulk of the testing was done.

In terms of testing, often companies will produce what's called an accessibility conformance report, or a voluntary product accessibility template. None of the companies, except for Microsoft, have produced those for any of those platforms. That is a useful way to assess the accessibility of something. I find it a little bit cumbersome. It's not my job to do that work for those companies; they should be producing those. I have an equivalent testing system, which I use this little acronym of FAST. It just reminds me of the things that I'm checking for. Function, Appearance, Structure, and Text equivalents. If anybody does know accessibility quite deeply,

the World Wide Web Consortium uses POUR, which is Perceivable, Operable, Understandable, and Robust. It's my entire job and I still sometimes like I don't know if I know exactly what robust means sometimes. Not to say that my system is perfect, it's just the system that I use. I also feel like it might be an easier way to impart some of what I'm talking about to people who aren't as immersed in accessibility. My process for testing these platforms starts with automated tests. Those are basically just code queries by different platforms that look for colour values and compares them. Looks for button labels, looks for heading structures. Then anything that fails will be flagged for human review. I often use Lighthouse, which is built into the Google Dev tools, WAVE from WebAIM is a really great extension and then ANDI with an I is a plug in you can use that checks for quite a number of things. However, what I do is I take all those flagged errors from the automated checkers, and I actually go in and test with assistive technology. So text to speech, screen readers, magnifiers, keyboard only navigation, and voice control. I do that because I want to get a sense of what it would actually be like for someone who uses assistive technology. And those automated tests don't really tell you what that would be like. As well, automated checkers test for about 25% of accessibility concerns, so there's a lot of manual testing in any thorough assessment. The automated tests, I take my experience using assistive technology. I apply a rubric which gives me a score that equates to what we're calling a level of concern. Greater concern means more students are likely to be unable to use this tool. They're more likely to be excluded.

Based on that list, There's just a table on the left here that talks about where we landed. So at the top, Bard and Bing have relatively minor concerns. Bing, that's the chat interface in the search engine. Bing Discover, Copilot, whatever they decided to call it today that's built into the edge browser had some more concerns. ChatGPT has some pretty moderate concerns, and then everything else down the list, unfortunately, had user experience breaking problems, complete inaccessibility. Most of the issues are relatively basic coding issues. A lot of missing labels, which makes them invisible to screen readers, Difficult to navigate for someone using their voice or a sip and puff device. Missing focus states, most of them have missing focus states, so keyboard navigation becomes incredibly difficult. Contrast errors. My assumption is that the rush to get these tools live meant that little thought was put into good design and UX and I don't think accessibility was even thought about at all. The thing is, quite frankly, most of these, including the most famous on this list, with an hour with an admin, could make that platform fully accessible. It's just that they're riddled with all of these really basic errors that just break it. Yeah, I would say in terms of least concern, tools that I would feel comfortable recommending both Bard and Bing in the chat. I don't see any significant barrier to using with assistive technology. Of course, Bard, I'm not sure as of today but when I tested it was not available in Canada. But I'm sure many of you could figure a workaround just like I did. Like I say, Bing Discover and ChatGPT, it would be fine. But I would only recommend them with a note that some students may need additional time or additional guidance and/or may not be able to use the complete features. Then the rest of the things on the list I couldn't in good faith recommend. They just have too many issues that would exclude too many students.

Ultimately what I take from this is I think maybe as a group, we especially get really excited when something new comes out. We're often early adopters. We like to push things to the limit, see where we can integrate this and use that and how this breaks and what does that. But we need to consider how something new, especially really bleeding edge like AI tools, might exclude some people. In the case of these relatively common AI tools, a lot of them are going to exclude a lot of students. I would just advocate that we bring accessibility into our assessment of new tools, whether it's AI or it's a new SRS, or it's a collaborative tool, or a whiteboard, whatever it might be. Just think about who we might be leaving out when we recommend different tools. If anyone's interested, I have a whole spreadsheet of common courseware and AI interfaces and SRSs that are commonly used. You know all of them that aren't accessible. I'd happy to talk more about that with anyone who's interested. Yeah, whether AI or a different tool, let's just think really hard before we recommend something.

If you would like a more deep dive into this information I've presented here, [bit.ly/Ala11y](https://bit.ly/Ala11y) or the link Accessibility of AI interfaces will take you there. I can drop it in the chat as well. More recently, I did hear from someone at the University of Michigan, and they're building their own interface that's fully accessible. I have not had a chance to test that, but they seem to be having some promising progress in that regard. I would encourage you to check out that article as well.

MODERATOR:

Thank you so much, Luke, for the wonderful talk. I find it really eye opening to learn how the popular AI tools are actually not really accessible. Does anyone have questions for Luke? Okay. So that's one question in the chat. One moment. "I'm wondering if you would be come to share your rubric that you use?"

LUKE:

Yeah, I can perhaps. Brie asked that question. Yeah. Maybe if you could just email me, I'd be happy to talk about it and share it with you. I don't have it as a public link. I can drop it in the Zoom chat right now. But yes, absolutely, happy to share.

MODERATOR:

Thank you. The other question in the chat. "I'm wondering if there are any ways in which text-to-image AI tools could be more accessible or are they inherently problematic?"

LUKE:

So text image AI tools. I'm thinking that means the DALL-E prompt generator. If not, please correct me. The thing with those is if they fix the very basic coding problems on their webpage, I would have no concerns about it. Because what it does in terms of generating an image, it uses the prompt as the alt text, which can be ridiculous. I'm sure we've all used DALL-E to make some silly images, but that's the best we could hope for. But unfortunately, with DALL-E, the reason for the concern is unlabelled menus, inaccessibility to screen readers. It's not necessarily the output, it's actually just the process that's really broken.

MODERATOR:

Thank you. Does anyone have any questions? We have I think around maybe one or two minutes.

PARTICIPANT:

I've got a question. Luke. Some industries like the supply chain industry are now using AI quite extensively and in designing a new program of study for students to prepare for a career in supply chain, we're going to have to prepare them to use AI. It may not be actually a choice as to whether we integrate AI into our curriculum or not. Do you have any thoughts on that?

LUKE:

Yeah. No, it's a very complex thing. But of course, if we're training students for whatever field, it would be ludicrous to say no to AI. I think every field is going to be incorporating it more and more. But I do think that, I guess from my perspective, in a smaller circle, I just try to guide people towards those tools that are going to include everyone or the most number of people. Ultimately, you know, I would love to get some more traction on this and exert some upward pressure on those companies to just improve those interfaces. Because I don't want to go too deep into web development, but so much of what makes those platforms inaccessible could be fixed in an hour. It's really lazy coding that caused a lot of the inaccessibility. That's not to say, some of them, there were more serious issues. But the most famous one, I'm not joking, an hour with an admin and that tool would be fully accessible. So if anybody knows anybody who knows anybody, [laughs] I'm happy to... Yeah. Yeah.

MODERATOR:

Thank you so much, Luke. We're running out of time here but we will take more questions for Luke during the next available time.