

Small steps Big gains

How everyday **accessibility practices** improve eResearch for everyone.

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Fun fact

Accessibility is often called by its numeronym “a11y” with the 11 representing the eleven letters between A and Y in “accessibility”.

What *accessibility* really means.

Accessibility is a User Experience.

UX without accessibility is only *Some Users Experience: **SUX***

Accessibility practices make products easier to use for everyone, **not just disabled users.**

Making systems better perceivable, operable, understandable and robust **benefits everyone.**

“The power of the Web is in its universality. **Access by everyone regardless of disability is an essential aspect.**”

– *Tim Berners-Lee*
Inventor of the World Wide Web

33 years of WCAG.

Accessibility maturity survey



1992: Disability Discrimination Act

1999: WCAG 1.0

2000: Sydney Olympics website case

2008: WCAG 2.0

2018: WCAG 2.1

2023: WCAG 2.2

Accessibility matters in research.

- 1 in 5 Australians have a disability.
- Inclusive systems attract & retain talent.
- Better accessibility = better UX for all.
- Supports reproducibility & global collaboration.
- Researchers hate more work.

Accessibility becomes usability

- Breaking large processes into steps (or mini tasks) **minimises the cognitive load** to accomplish a successful submission.
- **Automatic saving progress** stops dead end dread.
- Screen reader and keyboard navigation is **clear and concise** with **proper structure, simple and clear language** with a **perceivable and structured flow** which can even negate the need to reach for a mouse.
- Form errors are **present at the input, at the time** – but we also provide a summary explaining all issues which **link directly to the input**.

Don't make them hunt for it - **make it easy!**

The dark art of accessibility testing

Some **simple** (and mostly free) techniques for testing accessibility during/after development.

Don't be afraid to use these techniques on vendor-built systems and offer them the results.

The dark art of accessibility testing

1. Code testing

Google Lighthouse | WebAIM | Deque DevTools

**THIS IS NOT ACCESSIBILITY TESTING
THIS IS ONLY CODE SYNTAX TESTING**

IT IS STILL IMPORTANT

These tools do not test for context, language, flow, perceivability, cognitive load – **they only test that the code is in an expected format.**

They can hint to broader issues that need to be addressed but are not the be-all-and-end-all – but they, too are essential.

Most IDE's (integrated development environments | e.g. visual studio et al) have linters and AI plugins available to check your code and recommend amendments as you write it.

The dark art of accessibility testing

2. Screen readers (and keyboard) testing

NVDA | JAWS | VoiceOver | Narrator | Orca

NVDA can be downloaded and used for free (but please contribute to them if you are capable).

Screen readers look at the HTML code and read out loud regions, labels, roles, interactive elements, and data (like tables) for those with vision loss and impairment – or have cognitive issues with reading – **not just for the blind.**

Turn off your monitor when using your screen reader (don't cheat!). You will have an insight into how these users perceive your system.

Using a keyboard will quickly show any flow issues. If your form or site skips logical inputs that are expected, this can be an indication that it needs to be revisited.

If you get lost – they will get lost.

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Nihil de nobis, sine nobis
“Nothing about us, without us”

3. Humans (wild concept, I know!)

Get your users involved early and regularly.

Presenting it to them as your *“product champions”* allows them to feel an ownership and provides them an avenue to make suggestions or air grievances – which would most likely go under the radar until it becomes a HR or legal issue.

We proudly boast that *we build for our researchers, with our researchers*. I highly encourage you all to build that co-design reputation with your users. **It is invaluable to your end goal.**

I have personally found those who require accessibility conformity are really eager to share their experience. To this day, I learn something new every time after speaking with our users with disabilities. And **sharing their experience makes me a better user experience developer and our products better for EVERYONE.**

For that, I am grateful.

The dark art of accessibility testing

Links to these tools are available here



4. Tools

These are the tools that I use (and are not an exhaustive list by any means). I use these tools every day when designing and developing. I won't go into prototyping and things like A/B testing etc, as that's a whole other talk.

Code testing: Deque DevTools and Axe linter – DevTools runs in your browser and also includes some guided manual testing for things most others skip (like structure, tab flow etc) while the linter runs in your IDE and will alert you to code issues, and offer recommendations.

For those keen for end-to-end testing, there is an Axe plugin for Cypress we have been using with great success. Stops a11y issues getting into prod!

Screen reader: NVDA – Seems to be the most popular and easy to use.

Build Accessibility habits.

- **Start small.** Pick a workflow or a form, and test and improve and iterate. This is a journey not a race. Every effort is an improvement.
- **Utilise free tools.** In addition to the ones spoken about here – GitHub now uses copilot for PR reviews which can offer some amazing insights for example.

They catch low-hanging fruit early but can't replace lived-experience testing

- **Share and celebrate wins** with both your immediate team, and your executive team. Momentum from all levels will make policy change and compliance easier.

“Cultural change happens through consistency, not one-off audits.”

Accessibility expands who can contribute to knowledge creation

Try one accessibility test this week with a system you regularly use, or are developing.

Share your findings with your team, and open discussion about what can be done – if training may be required – if there are cohorts within your organization you can approach for their lived experiences.



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