5. Usability Testing, Focus Groups and Feedback

5.1 Usability Testing Introduction

Usability testing is the best way to know if your content and design works for real people with cognitive and learning disabilities. Usability is important for everyone. However, if someone cannot use the content or design without help because of their disability, then the content is not accessible for them.

Automated testing for accessibility focuses on more technical areas of accessibility. While important, automated testing often cannot assess if people with a cognitive or learning disability can use the content. It is vital for people with cognitive and learning disabilities that development teams do not rely solely on automated accessibility testing.

It is important to design and develop

Sometimes designs and content are usable for some people, but not if they have cognitive or learning impairments. Sometimes content is usable by people with one cognitive and learning disability but not a different one. For example, content with fewer words and more numbers may be perfect for some users with dyslexia or autism spectrum disorder. However, the same content is inaccessible for people with dyscalculia who struggle with numeric information. It is important that usability testing includes a diverse set of users with different cognitive and learning disabilities, such as: people with a memory impairment, learning difficulty, attention impairment, numeric impairment, language and communication disability and intellectual disability.

There is additional information at [Involving Users in Evaluating Web Accessibility](https://www.w3.org/WAI/test-evaluate/involving-users/) and additional resources available on our [developer resource page](https://www.w3.org/WAI/GL/task-forces/coga/wiki/Developer_resources).  This section focuses on things to consider when involving users with cognitive and learning disabilities.

5.2 Finding People to Include

There are many ways to find people with cognitive and learning disabilities. A few include:

* Recruiting organizations can help you locate a diverse group of users with cognitive and learning disabilities.
* People sometimes recruit users from an organization or self-help group for people with learning difficulties.
* can put out a call for volunteers to their contacts. This helps individuals self-identify and opt-in to help.
* For small development groups who are focused on usability rather than research, a large improvement can be achieved by asking people who they know, such as friends, colleagues, relatives or neighbors.

Regardless of how you reach individuals with cognitive and learning disabilities, try to build a group of users who:

* Are older and struggle to use computers, or have age-related forgetfulness
* May be at an early stage of dementia;
* Have a specific learning disability such as those with dyslexia, dyscalculia, or AD(H)D;
* Have an intellectual disability; or
* People with acquired cognitive issues (for example, due to neurological trauma).

People with acquired cognitive issues have the same challenges as people with other disabilities such as:

* having difficulty (asking a family member to help) with booking travel booking or hotel booking online,
* being unable to use online banking, and
* coping with content forms and pop-up windows when errors occur

It is helpful to find people with learning and cognitive difficulties who are also in your target group as customers or users.

Some organizations also use peer-researchers who have cognitive and learning disabilities. Peer-researchers understand the perspective of people with their disabilities. The researchers and developers work together with peer researchers to find solutions. Peer researchers are also involved in testing the solution with other people with cognitive and learning disabilities.

[Our developer resource page](https://www.w3.org/WAI/GL/task-forces/coga/wiki/Developer_resources#Easy_Reading_-_see:_easyreading.eu) references projects and resources with information on finding and working with persons with learning and cognitive difficulties as co-researchers or peer researchers.

5.3 Informed Consent

It is important to get a declaration of consent from all participants involved in testing and focus groups before they start. Before they sign up, participants must know and understand the details such as:

* What the project is for.
* What they will be doing and why it is helping you.
* Any risks that need to be explained and understood.
* What personal details are collected and how any personal data may be used (note that their comments should be anonymized before being used in any report.)
* They do not have to participate. Participation is always voluntary and they can always stop at any time.

If your tester has a guardian, you should get informed consent from **both** the tester and their guardian.

Using an understandable consent form is important. Our design patterns on clear content will help you use clear language and layout. Adding icons and symbols can also help.

Make sure users understand the consent form. This can be done by asking them some questions about the consent that tests that they understand the key points. You can also adapt the example consent forms from [our developer resource page](https://www.w3.org/WAI/GL/task-forces/coga/wiki/Developer_resources#Easy_Reading_-_see:_easyreading.eu).

Throughout the process, remind users that participation is always voluntary and they can stop at any time. This is particularly important if they have memory impairments and may have forgotten that it is their choice to participate. Remember to thank them for their ideas and contribution.

Different areas may require consent for more items than others.  Check the legal requirements in your jurisdiction and for your type of content.

**5.4.1 Differences from Usability Testing with the General Population**

There are some differences when usability testing with people who have cognitive impairments:

* Ask ahead of time if they need any support for their needs. This could include a quiet room or frequent breaks.
* Ask what test methods work best for them, such as individual interviews or groups. Some people will prefer to have an interview in their home.
* Ensure participation forms are easy to understand. Confirm that they understand any key points.
* Inform the participant that they can request the information in a different format. If they make a request, ensure they receive it with enough time for them to review and ask questions.
* Have a copy of the participation forms at the session, in case questions come up before the session begins.
* Send participation forms to the participant in advance. Allow plenty of time for the participant to ask questions and fill in forms.
* Allow the participant to bring a caregiver, family member or friend to attend with them.
* If your tester has a guardian, you should get consent from both the participant and their guardian.
* If they bring a guardian or caregiver, make sure they are not doing the tasks for them. If they give help, monitor closely what help they give, as this may be due to a design fault.
* Explain the testing method before the test.
* The questions should not be too difficult.
* Provide easy methods of assessing mood, rather than just asking for the participant. Try asking them to select a smiley face, such as: *Figure 1 A simple mood selector  
    
  Figure 1 A simple mood selector*
* Some individuals also have challenges identifying moods from faces. Other options to consider are simple mood selectors and text-based rating scales where an individual can point to their selection. For example, I really like this, it is fine, I really don't like this.
* Check they understand the methods used to collect the data.
* Ensure the person does not feel like they are at fault for making mistakes. While this is always important during usability testing, this scenario is even more likely for people with cognitive impairments.
* Ask them for their ideas, such as, what features they would like to see, what design they prefer and what support they find most helpful. Thank them for their contribution.

Here are some suggestions of what to look for when conducting usability testing with people with cognitive and learning disabilities:

1. Before you start, make sure the research team understands that the testers cannot do anything wrong. Research should never harm the user or make them feel bad.
2. Make sure the participants and researchers know they can leave at any time. No one should feel bad if they leave!
3. Check that the testers understand the task or question. Encourage your testers to “think out loud”
4. Time the task takes to complete, and note any parts where the users slow down or seem to struggle. Can your testers manage each task reasonably easily and quickly?  Also, note any errors that they make, including clicking on the wrong item.
5. Find out if completing the task is frustrating or upsetting?
   1. You can ask the users how they are feeling before and after the tasks or rate their mood such as selecting the smiley face which represents how they feel.
   2. Ask them if anything was annoying.
6. Ask how you can make it better for your users (people with cognitive and learning disabilities)?
7. Ask your users if they have suggestions about what would make the interface easier for them to use. This is often best at the end of the usability test.
8. If the user is struggling, remind them that you are reviewing the system not them and that their insights are really helpful. Thank them for helping. Remind them that it is helpful when they find issues because it helps the team make the product better. Stop the process if users are getting distressed.
9. Analyze the data collected and review the findings with the team. Remember to keep the names of individuals confidential (unless they have given permission for their identity and disability to be shared).

(With thanks to Smart4MD and Easy Reading for this overview. These projects are co-financed by the European Union under an EU Framework Programme for Research and Innovation – Horizon 2020, with grant agreement number 643399 and 780529 and the European commission for this contribution.)