Content Usable Part 1 (Summary, Intro, & User Stories)

Please add your **suggested edits** and **comments** here. Do ensure your edits are visible - eg switch to the google docs “Suggesting” mode (top right of this page).

Larger, more complex suggestions and external feedback can be found in GitHub Issues

The checklist of items when editing is at List_for_final_edit

This was broken apart from the google doc Editing Content Usable

****

Plain Language Summary

To help web content providers meet the needs of people with cognitive and learning disabilities we have identified the following objectives:

1. **Help users understand what things are and how to use them.** Use things that are familiar to the user so that they do not have to learn new icons, symbols, terms or design patterns. People with cognitive and learning disabilities often need common behavior and design patterns. For example, they may know the standard convention for links (underlined and blue for unvisited; purple for visited).

See also: user needs , design patterns and user testing for objective 1

Related scenarios: tom….

2. **Help users find what they need.** Navigating a system should be easy. Have a clear and easy to follow layout with visual cues, such as icons. Clear headings, boundaries and regions also helps people understand the page design.

See also: user needs , design patterns and user testing for objective 1

Related scenarios: tom….

3. **Help users understand with clear text and images.** This includes easy words, short sentences and blocks of text, clear images, and easy to understand video.
4. **Support different ways to understand content.** Graphics, summaries of long documents, adding icons to headings and links and alternatives for numbers are all examples of extra help and support.
5. **Help users avoid mistakes.** A good design makes errors less likely. Do not ask the user for more things then you need! When errors do occur, the user should find it easy to correct them.
6. **Help users focus.** Avoid distracting the user from their task. If the user does get distracted, headings and breadcrumbs can help orientate the user and help the user restore the context when it is lost. Providing linked breadcrumbs can help the user undo mistakes.
7. **Ensure processes do not rely on memory.** Memory barriers stop people with cognitive disabilities from using content. This includes long passwords to log in and voice menus that involve remembering a specific number or term. Make sure there is an easier option for people who need it.
8. **Make it easy to get human help and give feedback.** If users have difficulty sending feedback, then you will never know if they are able to use the content or when they are experiencing problems.
9. **Support adaptation and personalization.** People with cognitive cognitive and learning disabilities often use add-ons or extensions as assistive technology. Sometimes, extra support requires minimal effort from the user via personalization that allows the user to select preferred options from a set of alternatives. Support personalization when you can. Do not disable add-ons and extensions!
10. **Test with real users!** Involve people with disabilities in the research, design and development process. They're the experts in what works for them. This includes involving people with cognitive and learning disabilities in:
    - focus groups
    - usability tests

- the design and research team.

2. Introduction

Making websites and applications friendly for people with cognitive impairments affects every part of design and development.

Traditionally, accessibility focused on making the interface usable for people with sensory and physical impairments (vision, hearing, or mobility). Some accessibility features will help people with cognitive impairments. Often the issues that affect people with cognitive and learning disabilities include design, context, structure, language, usability, and other factors that are difficult to include in general guidelines.

Some design patterns create barriers for people with disabilities. The patterns presented in this document have been designed to avoid such barriers for people with cognitive and learning disabilities. While this guidance may improve usability for all, these patterns are **essential** for some people with cognitive and learning impairments to be able to use content independently.

The Objectives and Patterns build on the:

- Cognitive Accessibility User Research,
- Cognitive Accessibility Issue Papers, and
- Cognitive Accessibility Gap Analysis and Roadmap.

The Objectives and Patterns presented here give supplemental guidance beyond the requirements of WCAG. They address accessibility barriers that could not be included in the normative WCAG specification and may not otherwise be addressed.

2.1 How to Use this Document

This document provides information on the development process and design options for making websites and applications more usable and accessible for people with cognitive and learning disabilities.

It is organized by **high level objectives** which are listed along with user stories in Section 3. The high-level objectives outline key design goals that will help people with cognitive impairments. Each objective has associated:

- **user needs and user stories**, that show the user perspective
- **design patterns**, that show what to do
- **personas and user scenarios**, that help you to understand your users' experiences and challenges, and

- questions for **user testing**.

Mappings of objectives, user stories, patterns and personas are available in Appendix A. This provides a way to understand how to address the objective and why it is important. Some people may prefer to start with Appendix A.

This document is divided into parts. Each part can be used in different ways in the product development life cycle. This should help different teams achieve the objectives while supporting the way they work. For example:

1. Agile teams can incorporate section 3 into their user stories.
2. Design patterns, objectives and/or user needs can be incorporated into requirements specifications.
3. Personas or design patterns can be used in the design research phase.
4. Section 5 can be useful for teams involved in user research and user testing.
5. Involving the user, the design guide and design patterns can be incorporated into guidance to support vulnerable users.
6. Design patterns can be used in design guidelines or included in design libraries.
7. Design patterns can be used as content guidelines to promote plain language and communication.

It should be noted that all teams should try to involve users with cognitive and learning disabilities throughout the design and development process. Teams that are too small for user testing and focus groups can find affordable ways to involve the user by reading section 5.

Following the advice in this document, as much as possible, will be particularly valuable for web content and applications that address:

- individual safety concerns,
- health,
- critical services,
- autonomy,
- caregiving,
- social integration, and
- work and the workplace.

2.1.1 Testing Each Pattern

In many cases the “use” and “avoid” examples for each pattern can be used as a testable case. The pattern is probably applied if:

- For each pattern, a “use” example is implemented (unless it is not relevant for the content).

- For each pattern, the items identified as “avoid” examples are avoided (unless they are necessary or essential).

There are additional ongoing efforts to make testable statements for each design pattern with corresponding test processes and failure examples, that are always applicable. These are available at Testable Statements for COGA Design Patterns.

In some cases, the testable statements only cover the part of the design pattern that can be tested automatically. The Cognitive Accessibility Task Force intends to continue working on these statements as a supplement to the design guide.

One can test also that the additional advice in this document is integrated into development and design processes. For example:

- Confirm that diverse users with cognitive and learning disabilities are included in the projects’ focus groups, research and user testing as per the advice in section 5.
- Confirm user needs and user stories for people with cognitive and learning disabilities are integrated into the project user needs, user stories and requirements, as per section 3.
- Confirm that personas from section 6 are integrated into the research phase of the project.
- Confirm that the project user tests include testing for the objectives in this document as per section section 5.

2.2 Background about People with Cognitive and Learning Disabilities and the Web

Cognitive and learning disabilities include long-term, short-term, and permanent difficulties relating to cognitive functions, such as:

- learning, communication, reading, writing or math,
- ability to understand or process new or complex information and learn new skills, with a reduced ability to cope independently, and / or
- memory and attention or visual, verbal or numerical thinking.

Design, structure and language choices can make content inaccessible to people with cognitive and learning disabilities. Examples may include:

- People with impaired short-term memory may be unable to recall passwords or copy access codes. They may have trouble or be unable to remember new icons and interface paradigms.
- People with impaired working memory may only be able to hold one to three items in their memory at the same time. This can make it difficult to hold information temporarily or copy access codes.

- People with different processing speed capabilities may need additional time to understand the design relationships and information on the screen.
- People with language related disabilities may need simple clear language and instructions. Some may rely on supporting graphics, icons and familiar symbols to understand content.
- People with social or communication disabilities may need clear literal language and may not understand metaphors or non-literal text and new icons.
- People with impairments that affect the comprehension of mathematical concepts may not understand or confuse numerical references such as percentages.
- People who have issues with keeping or regaining focus may have difficulty completing a simple task if there are a lot of distractions and interruptions. They may need headers and signposts to help them regain the context after their attention was lost (including in multimedia).
- People with cognitive and learning disabilities that impact learning may need more support or time to complete a new process or an authentication task.
- Many groups may struggle with cognitive fatigue when completing complex, multi-stage processes such as filling out forms or entering data correctly or finding the content or feature that they need. They will need support to minimize errors and complete their task.

These difficulties may sometimes also be experienced by the general population due to environmental or situational barriers. For example, when they are trying to use a website when distracted or stressed. Working on a mobile device while in an unfamiliar or noisy situation can also place an additional cognitive load on users by splitting their attention. However, for users with cognitive and learning disabilities, these difficulties are likely to be persistent and significant. As a result, they may be unable to access content and complete these tasks independently.

Cognitive and learning disabilities are difficult to diagnose and categorize. They are usually hidden and can be age related. Users are less likely to have a formal diagnosis of a disability than individuals with physical and sensory difficulties. Often, only some functions are impaired while other cognitive functions are unaffected. For example, someone with dyslexia may be a fantastic engineer. Sometimes, cognitive and learning disabilities may include intellectual impairments that affect comprehension, alongside written and spoken expression. People may also experience more than one type of cognitive and learning disability. Note that the terminology and definitions used for cognitive and learning disabilities varies between countries.

Mental health issues can also result in cognitive difficulties, such as difficulty focusing, cognitive fatigue or reduced memory. Overall, by addressing barriers to accessibility for users with cognitive and learning disabilities, improvements to digital technologies can be achieved and there is the potential to improve user experience.

2.3 Building the User into the Development Process

Some aspects of making web content and applications friendly for people with cognitive and learning disabilities are best dealt with as part of the overall design process. For most organizations there should be scope included for a user-centred design process.

Key parts of this process for people with cognitive and learning disabilities should be:

- Including the needs of users with cognitive and learning disabilities in the context of user needs and requirements.
- Including people with cognitive and learning disabilities in research methods such as usability testing.
- Including people with cognitive and learning disabilities in the design and development team.

If people with cognitive impairments are included in the usability testing and their feedback is accounted for, the website will be easier to use for everyone, including people who are experiencing stress or mental health issues.

3. User Stories

This section contains user stories, followed by the user needs that relate to them. They are divided into the same objectives as the design guide above.

Note that for people with cognitive and learning disabilities, meeting these needs can be the difference between being able to use the site or not being able to use it at all. This may also be true for people with mental health issues or under temporary stress.

User needs for people with cognitive and learning disabilities are often helpful for other users, although they can usually manage to use the site without these user needs being met.

3.1 Objective 1: Help Users Understand What Things are and How to Use Them

3.1.1 User Story: Clear Purpose

As a user with a memory impairment, attention impairment, or executive function impairment or as a user with a communication disability who uses symbols, I need to know the purpose of the content so that I know if I am in the right place, and what I am doing even if I lose attention and focus for a time.

This also includes the following user needs:

- I need to know what the website offers, or if I should move on.
- I need to know what features and content are on this page or if I should move on.
- I need to recognize where I am in the architecture of the website, application or multi-step process, even after I get distracted.
- I need to know the relationship between this page and the site/task, even after I get distracted.
- I need to know the context and purpose of the page.
- In videos and multimedia: I know what is in the video, I can jump to the content I need, and I can restore context if I get distracted.

Related Personas: Carolyn, Frank, Maria, Tom

3.1.2 User Story: Clear Operation

As a user with a memory impairment, a learning disability, or a communication disability who uses symbols, or executive function impairment, I find it hard to learn new interface design patterns. I need to know which controls are available and how to use them so that the site is usable for me.

This also includes the following user needs:

- I need to understand my options and the tasks I can perform and I can identify the controls I can interact with in order to complete actions.
- I need to know how to use all the controls and the effects of each action.
- I need to touch the controls I intend to. The interface is designed so that I rarely touch controls by accident
- I need to know what are controls and what are not controls. I do not try to activate elements that are not controls. Otherwise I think the site is broken and will give up.
- I need to know where things are. Controls do not move unexpectedly as I am using them.
- I need to know what happens when I touch things. I know the consequence of each action, such as sending information, changing settings, changing the context or closing the application.

Related Personas: Alison, Amy, Anna, Frank, George, Sam

3.1.3 User Story: Symbols (pictographic or ideographic that represent concepts)

As a user with complex communication needs that may include a mild language impairment, I want symbols that help me understand the content.

This also includes the following user needs:

- I need symbols to help understand essential content, such as controls and section headings.
- I need symbols that I understand and are familiar to me; recognizable, commonly used symbols; or personalizable.
- I need symbols placed above the text to link the meaning of the words with the images.

As a user with a severe language impairment, who has managed to learn a symbol vocabulary, I need to have symbols on top of each phrase and very simplified language. Of course, it is best if I understand the symbols and they are the ones I have learnt (via personalization).

Related Persona: Frank, George

3.2 Objective 2: Help Users Find What They Need

3.2.1 User Story: Findable

As a user with a memory impairment, impaired executive function, or impaired language processing skills, I need to find features and content easily, so that I can find things in a reasonable amount of time.

I can identify important information and critical functions on a page, quickly and easily.

This also includes the following user needs:

- I need to reach important information and the controls I need without scrolling or carrying out other actions. They are not hidden or off screen.
- I need to easily identify content that I need, and do not need. Information I need to know and important information stands out, or is the first thing I read and does not get lost in the noise of less important information.
- I need to get to the feature I need using the minimum number of easy steps.
- I need to know the starting point for each specific task, such as applying for a job.
- I need to find the design and user interface elements familiar. Menus, buttons, design components, and common elements such as help and search are easy to recognize and where I expect them to be.

Related Personas: Alison, Amy, Anna, Carolyn, Maria, Tom

3.2.2 User Story: Searchable

As a user with a memory impairment, impaired executive function, or impaired language processing skills, I need to find features and content easily, so that I can find things in a reasonable amount of time. I can easily search for what I want.

This also includes the following user needs:

- I can find what I have searched for before.
- I can easily navigate through the menu structure and organization of the site.
- I can easily navigate through the page structure.

Related Persona: Tom

3.2.3 User Story: Clear Navigation

As a user with a memory impairment, impaired executive function, /or impaired language processing skills, I need to find features and content easily, so that I can find things in a reasonable amount of time.

I need the structure and menu categories to make sense to me, so that I find what I am looking for, without looking in the wrong place.

This also includes the following user needs:

- I need to find it easy to understand, navigate and browse both the site and page structure.
- I need to scan the page and understand the priority and structure of the content.

Related Personas: Alison, Amy, Frank, Maria, Sam, Tom

3.2.4 User Story: Media

As a user with impaired executive functioning and attention impairments, I want media presented in small chunks of understandable content, so that I can understand the main points and not lose focus.

This also includes the following user needs:

- I need to easily navigate to what I want, take breaks and easily jump back a step if I do not follow or get distracted.
- I need small segments of multimedia that have navigable text or labels that describe the segment.
- I need to understand plain language used in the media.
- I need to use a clear structure to help me navigate and understand different parts of the media.
- I need to use visual aids and pictures to help me understand the media content.

Related Persona: Carolyn

3.3 Objective 3: Use Clear and Understandable Content

3.3.1 User Story: Clear Language (Written or Audio)

As a user with a language, processing or memory impairment, I need the language used to be clear and easy for me to understand so that I can understand the content.

This also includes the following user needs:

- I need to understand the language used, including vocabulary, syntax, tense and other aspects of language.
- I need to easily distinguish the content from the background distractions.
- I need words to include accents, characters and diacritics that are necessary to phonetically read the words. This is often needed for speech synthesis and phonetic readers in languages like Arabic and Hebrew.
- I need to understand the meaning of the text. I do not want unexplained, implied or ambiguous information because I may misunderstand jokes and metaphors.
- I need an easy to understand, short summary for long pieces of content or an option for an easy to read version.
- I need images, diagrams or video clips to help me understand ideas, more than a lot of words.

Related Personas: Carolyn, George, Sam, Tom

3.3.2 User Story: Visual Presentation

As a user with a language or communication impairment, dyslexia, or an impaired memory, I want a page layout that helps me follow and understand the content without getting overwhelmed.

This also includes the following user needs:

- I need short boxes or chunks of content or sections. These usually have:
    - clear headings
    - short paragraphs and sentences with one idea
    - good use of lists, and
    - Pictographic icons next to headings, labels and links.
- I need a good use of white space between, for example:
    - lines, sentences or phrases, and
    - chunks, so that the chunks are clear and the page does not get overwhelming.

- I need explanations of implied or ambiguous information, like body gestures and facial expressions seen in images and animations.

Related Personas: Amy, Anna, Carolyn, Frank, George, Sam, Tom

3.3.3 User Story: Math Concepts

As a user who does not understand numerical concepts, I need content to be usable without understanding math concepts, such as percentages.

This also includes the following user needs:

- I need content without math concepts.
- I need content that provides alternatives like a non-math textual explanation . I need words instead of digits.

Related Personas: Alison, Frank, Jonathan

3.4 Objective 4: Help Users Avoid Mistakes and Know How to Correct Them

3.4.1 User Story: Assistance and Support

As a user who has difficulty with organization (executive functioning), typing, and putting letters and numbers in the right order, I want an interface that stops me from making mistakes, complete forms and perform other similar tasks successfully.

This also includes the following user needs:

- I need an interface that makes mistakes less likely by helping me avoid mistakes, as well as minimize the mistakes I might make.
- I need to enter as little information as possible, so the task is more manageable.
- I need the interface to only give valid options, so I can select the ones I want.
- I need an interface that helps ensure I rarely touch controls by accident.
- I need long numbers that often have spaces, like credit card numbers, divided into chunks. That way I find it easier to check them.
- I need inputs to accept different formats and not mark them as mistakes.
- I need interfaces to use metrics I know, and that are common in my location (such as feet or meters), otherwise I get confused. I do not always know what metric they are talking about or notice the number looks wrong.
- I need to use applications (or APIs) that help me, such as remembering my information so I do not need to enter it again and have help with my spelling.

- I need clear labels, step-by-step instructions and clear error messages, so I know exactly what to do.
- I need examples that make it easy to understand what I need to do.
- I need clear and simple explanations of options or choices to help me know what they mean.
- I need help managing my time, such as letting me know how long a task will take.
- I need time to complete my work. I do not want a session to time out while I try to find the information needed, such as my postal/zip code or social security number.
- I need to save my work as I go or be sure all my work is saved automatically. I do not want to start over again, which can create a cycle of reentering my data. This makes me tire easily and more likely to make mistakes.
- I need support to manage the task such as letting me know what information I will need (credit card, full address etc) before I start.

Related Personas: Alison, Anna, Carolyn, Frank, George, Jonathan, Maria, Sam, Tom

3.4.2 User Story: Undo

As a user who often makes mistakes or touches the wrong thing, I want to undo what I just did quickly and easily so that I can manage to use applications and not give up.

This also includes the following user needs:

- I need to check my work and go back without losing the work I have just done.
- I need to go back to where I was in one simple step, when I touch the wrong control.
- I need predictable back or undo features so that I know exactly where I was previously, before I made a mistake.
- I need to understand the consequences of what I do.

Related Personas: Alison, Anna, Maria

3.5 Objective 5: Help Users to Maintain Focus

3.5.1 User Story: Distractions

As a user with an attention impairment and impaired memory, I need to avoid distraction. If I lose focus and forget what I am doing, I need reminders of what I was doing, so that I can complete my task.

This also includes the following user needs:

- I need tasks to not have distractions.
- I need to turn distractions off easily, if there are distractions.

- I need to know where a task starts and finishes to help with switching attention so that I can focus on the task.
- I need to know the context, where I am, what I just did, or what just happened to me after I lost cognitive focus and then needed to come back to the task.
- I need to be able to go back or see information about where I am in a site so that I can reorientate myself.
- I need to know where I am in a process to avoid disorientation, including what I have done and what my next step will be.

Related Personas: Amy, Carolyn, Frank, Sam, Tom

3.6 Objective 6: Ensure Processes Do Not Rely on Memory

3.6.1 User Story: Remembering from Previous Steps

As a user with short-term and working memory difficulties, I need processes that do not rely on memory and access to information I entered during previous steps in a process.

Related Personas: Maria

3.6.2 User Story: Accessible Authentication

As a user who has memory impairments and often forgets passwords, and has impaired executive function, I need a method of secure website authentication that I can use.

This also includes the following user needs:

- I need to be able to use a site without remembering or transcribing passwords and usernames.
- I cannot decipher a lot of words or unfamiliar icons.
- I need a login process to be simple, and not multi-step.
- I need a login process that I can use that does not rely on a lot of words.
- I need the login process that does not have puzzles or calculations.

Related Personas: Anna, Jonathan

3.6.3 User Story: Voice Menus

As a user who has memory impairments and impaired language processing skills, I need to get human help, without going through a complex menu system or a complex voice recognition menu system that relies on memory and executive function, so that I can set an appointment or find out some information.

This also includes the following user needs:

- I need to easily find a human by pressing a reserved digit that I know (typically the number 0).
- I need simple-to-navigate voice-menu systems with limited options that make sense to me, so I don't struggle with multiple steps and can identify options quickly.
- I need to hear the option before the number to select, so I do not have to remember the number while processing the words.
- I need pauses between each option so I can process what was said. (As a user with low cognitive processing speed.)
- I need the system to wait for my response. (I am a slow speaker.)
- I need to easily go back every time I make a mistake, without having to start at the beginning.
- I need the usability best practices for voice menus. (As a user who often finds menus unusable.)
- I need a process to select simple help, and not multi-step help.
- I need to spend my energy completing my task. I do not want to waste my energy while I struggle to understand other material, such as special offers or promotions.
- I need help identifying the right words to say in a voice menu and the words should be the ones I would use.

Related Personas: Frank, Maria

3.7 Objective 7: Provide Help and Support

3.7.1 User Story: Help

As a user who finds some websites hard to use, I need to get help and give feedback easily from every place where I get stuck. This ensures I am not excluded and the site is aware of my needs.

This also includes the following user needs:

- I need to give feedback from any point in the process.
- I need to give feedback, ask questions and get feedback:
    - in a similar timeframe to everyone else.
    - using my preferred communication method (form, email, chat, phone support, etc.) and it is accessible to me.
    - I know how to get help or information, such as from context-sensitive help or tooltips.
- I need to know how to get human help and can manage the process easily.

Related Persona: Alison

3.7.2 User Story: Support

As a user who finds some websites hard to use and struggles with text and words, I sometimes need in-page and inline support so that I can use the content. However, with an attention disorder any support required is in my control to avoid distractions.

This also includes the following user needs:

- I need any help and support content to include symbols or enable me to personalize content using my own.
- I need help and main content to be clearly differentiated so I do not confuse them
- I need contextually-relevant graphs and pictures to supplement text so I can understand a point without a lot of reading. For example, I find graphs much easier to understand than the same information in an article or academic paper.
- I need text to speech support, with synchronized highlighting, so I can follow as words when they are read aloud.
- I need rapid feedback or visual cues to show when an event is successfully triggered. For example, I need to know when an email is sent, otherwise it looks as if it has just disappeared. (As a user who struggles with web content.)
- I need reminders integrated into my calendar, otherwise I will forget appointments and when I am meant to do things. Sometimes I need reminders to revisit a website to complete the next task.
- I need to control when reminders are sent, the frequency and type of reminders so that I do not become distracted by too many reminders.

3.7.3 User Story: Directions

As a user with cognitive and learning disabilities that affect navigation and sequencing, I need help understanding and using directions and navigation.

Related Personas: George, Sam,

3.7.4 User Story: Cognitive Stress

As a user with sensitivities that can be affected by content (e.g. content that is busy, confusing, depressing, or has loud noises), I need content that I can cope with so that I can be successful.

This also includes the following user needs:

- I need simple, consistent content.
- I need to avoid and recover from mental fatigue.
- I need to sometimes avoid types of content, such as social media, distractions, noises or triggers.

- I need to make less mistakes and errors.
- I need to know I am safe and secure when using a website, especially if providing information or communicating with others.

Related Persona: Tom, Anna, Frank

3.7.5 User Story: Task Management

As a user who struggles using web content due to executive function impairment, or struggles with numerical concepts, I want to be confident that I can manage my tasks.

This also includes the following user needs:

- I need explanations for unusual controls in a form I find easy to use (such as a video or text).
- I need support and explanations for any choices. The advantages or disadvantages are clear to me and I understand the effects of the choice I might make. For example, when choosing a cheaper airline ticket you often have to pay for a meal.
- I need to know how to start a task, and what is involved such as:
    - the steps involved.
    - a time estimate for completing the task and any time limits.
    - and any materials I may need (such as a credit card number, passport number, questions that authenticate login such as “your mother’s maiden name”).
    - support and instructions that I understand to help me organize the time and steps.
    - any limitations are clear to me before I begin.
- I need to turn off any distractions during a task, and help is available at any point.

Related Personas: Frank, Jonathan, Sam, Tom

3.8 Objective 8: Support Adaptation and Personalization

3.8.1 User Story: Adapt

As a user with short and medium-term memory impairment and impaired executive function, I need a familiar interface so that I do not need to figure out and remember new interfaces. This may take a few weeks of repetition and I may not manage to learn it all if I have a condition affecting learning new things, such as dementia.

This also includes the following user needs:

- I need (a version of) a familiar interface, that I recognize and know what will happen.
- I need the controls to be consistently positioned on the screen where I expect them to be.

- I need content delivered in an easy to understand language or an easy-to-understand mode (like short, understandable, video clips).
- I need to easily find and select the content format or version of the content that is easiest for me to understand.
- I need alternatives to spoken and written language such as icons, symbols or pictures.
- I need personalized symbols, icons or pictures that I can recognize immediately, as learning new ones takes a long time.
- When I do not know a word, I need symbols and pictures that I know and recognize.
- I need videos and pictures that help me understand the content without so much reading of text.
- I need "easy to use" gestures on a touch screen that do not confuse me (or the possibility of alternative access).
- I need to express my ideas without so many words, such as using speech recognition or pictures (I have a program, where I select a word and it gives me a picture).
- I sometimes need to add more white space between lines, sentences, phrases and chunks.
- I need alternatives for mathematical content, that do not rely on mathematical concepts.
- I need less content without extra options and features as I cannot function at all when there is too much cognitive overload.
- I need to find the extra features when I want them.

Related Personas: Alison, Amy, Frank, Jonathan, Sam

3.8.2 User Story: Extensions and API's

As a user with learning and cognitive impairments, who uses add-ons and extensions as assistive technology, I need my add-ons, API's and extensions to work with the content so that I can use it.

This also includes the following user needs:

- I need to use additional support features from widgets or extensions. For example, I have an extension that helps me correctly enter words, grammar and use punctuation as well as reading the page to me.
- I need to use my password manager.
- I need to use my toolbar that adds symbols and reformats the page.

Related Personas: Alison, Anna, Jonathan, Tom