Making content usable for people with cognitive and learning disabilities

Understanding guidance from the W3C Cognitive Accessibility Task Force

bit.ly/axe-con22-coga

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objectives for this presentation

Understand what "COGA" means

Be able to use "Content Usable"

Have practical "next steps" you can take

Cognitive accessibility is **imperative**

Digital experiences are ubiquitous and becoming increasingly essential for **self care**, **safety** and **independence**.

Cognitive is the largest disability category

- **12% of the US population** are estimated to have cognitive disabilities (CDC, 2019)
- **1 in 6 people in the world** will be over the age of 65 by 2050 (UN, 2020)
- **10–20% of people** show signs of dyslexia (Yale, 2021)
- **1%+ of the world** is autistic (WHO, 2021)

Functional needs must be addressed

Functional needs	Examples of related diagnoses
Attention	Attention Deficit (Hyperactivity) Disorder (ADD/ADHD)
Language & literacy	Aphasia, Dyslexia, Visual Processing Disorders
Learning	ADHD, Brain Injury, Dyscalculia
Memory	Mild Cognitive Impairment, Brain Injury
Executive function	Brain Injury, Autism, Aging

Functional needs can also be situational or temporary

- Fatigue
- Stress
- Distraction
- Using unfamiliar languages or measurements
- And many more...

What is COGA?

Cognitive Accessibility

And much more than universal design

COGA Task Force

A task force in the W3C

Making Content Usable

A W3C note with supplemental guidance at w3.org/TR/coga-usable

The document: “Making Content Usable”

This is a working group note from the W3C, and provides supplemental guidance beyond the Web Content Accessibility Guidelines (WCAG)

W3C Working Group Note

TABLE OF CONTENTS

§ 1. Summary (Easo to Understand Language)

This section is an easy to understand summary of the key points of this document. Also see How to Use this Document, for more orientation. To help web content providers meet the needs of people with cognitive and learning disabilities we have identified the following key topics:

§ **Help users understand what things are and how to use them.**

Use icons, symbols, terms, and design patterns that are already familiar to users so that they do not have to learn new ones. People with cognitive and learning disabilities often need common behavior and design patterns. For example, use the standard convention for hyperlinks (underlined and blue for unvisited; purple for visited).

See also: user needs, design patterns, mappings to scenarios, and user testing for objective 1.

§ **Help users find what they need.**

Make navigating the system easy. Use 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, mappings to scenarios, and user testing for objective 2.

§ **Use clear content (text, images and media).**

This includes easy words, short sentences and blocks of text, clear images, and easy to understand video.

See also: user needs, design patterns, mappings to scenarios, and user testing for objective 3.

Making content usable removes cognitive barriers

w3.org/TR/coga-usable

Objectives

Goals to support cognitive needs

User stories

Narratives that explain complex barriers

Design guide

Design and engineering patterns

User testing

How to test with users who experience barriers

Personas

Representations of users with common cognitive and learning disabilities

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sample stories from the larger document

Jonathan, a therapist with dyscalculia

Alison, a retiree with mild cognitive impairment (MCI)

Kwame, a researcher who has had a brain injury (TBI)

Jonathan, a therapist with dyscalculia

Photo credit: Ryan Snaadt on Unsplash

A barrier: The schedule says there is a meeting at 15:30 UTC. Now is lunch time. Did I miss it?

What works: There is a line marker showing the current time (now), so I can see the meeting is soon.

- **Provide alternative ways to represent numerical concepts**
- **Provide a login that is simple, single step, and does not rely on memory or transcription**

Alison, a retiree with mild cognitive impairment (MCI)

A barrier: I pressed something that looked like the ‘buy’ button but it did nothing. Is this site broken, or is it me?

What works: I could easily tell that the “buy” button was a button, and I have now bought tickets for a vacation.

- **Use a familiar hierarchy and design**
- **Clearly identify controls and how to use them**
- **Make it easy to find help**

Kwame, a researcher who had a brain injury

Photo credit: Hust Wilson on Unsplash

A barrier: I forgot what I added to a shopping order and hit the back button. It reloaded everything and I had to start over from the beginning.

What works: There is a clear back button on each step and when I use the browser back button it also works.

- **Use an clear page structure without too much content**
- **Help the user avoid and correct mistakes**
- **Help the user prepare for a task**

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objectives

1. Help users understand what things are and how to use them
2. Help users find what they need
3. Use clear and understandable content
4. Help users avoid mistakes and know how to correct them
5. Help users focus
6. Ensure processes do not rely on memory
7. Provide help and support
8. Support adaptation and personalization

Objective 1:

Help users understand what things are and how to use them

3.1 Objective 1

Clear purpose

The reason for the page, content, or interface element is clear

Clear operation

Buttons are clearly buttons, links are clearly links, the back button works as expected...

Useful symbols

To support individuals who benefit from more than text to understand information

Objective 2:

Help users find what they need

3.2 Objective 2

Findable

Easy to identify important information and critical functions on a page

Searchable

When all else fails, an individual will be able to use common search functionality

Clear navigation

Structure and navigation must make sense, wayfinding should be easy to understand

Objective 3:

Use clear and understandable content

3.3 Objective 3

Clear language

Clear, unambiguous language that is appropriate for the context

Visual presentation

Layout takes advantage of chunking, boxes, white space, lists, and headers

Math concepts

Numerical concepts are represented in ways that can be understood without math

Objective 4:

Help users avoid mistakes and know how to correct them

3.4 Objective 4

Assistance

When possible, use autofill and auto-correct formatting for the user

Undo and back button

Common reset operations such as undo keyboard commands and the back button work as expected

Inline user support

Provide helpful labels, examples, step by step instructions, and error messages inline

Objective 5:

Help users focus

3.5 Objective 5

Avoid distractions

Remove features that take the user off their current task before it is complete

Clarify the current step

Make sure the user knows what step they are on in a process, and what's left

Tools to reorient

Provide ways for a user to reorient themselves if they get distracted

Objective 6:

Ensure processes do not rely on memory

[3.6 Objective 6]

Remembering previous

Help the user access or reference information from a previous step or screen

Accessible authentication

Provide memory aids for password completion and multistep logins

Voice menus

Offer easy access to human help for someone who cannot remember all the options in a voice menu

Objective 7:

Provide help and support

[3.7 Objective 7]

Get help, give feedback

Ensure that users can find and use help features and also provide feedback on what isn't working for them

Directions, sequencing

Clearly break down multi-step tasks into individual steps, and simplify

Task management

Help users prepare ahead of time for what they will need to complete the task, including time and resources

Objective 8:

Support adaptation and personalization

3.8 Objective 8

Adapt

Adapt to the user rather than forcing the user to adapt to the interface

Respect user preferences

If a user sets system level preferences, use them (examples: font sizes, colors, inputs)

Extensions and APIs

Ensure that add-ons, APIs and other assistive technology will work with your interface

That’s quite a lot!

And there’s much more at
w3.org/TR/coga-usable

Resources

Read

- "Making Content Usable" | W3C
- DRAFT Functional Needs | WCAG 3 | W3C
- Alzheimer's Association: Facts and Figures
- CDC: Disability and Health Data System
- Report to Congress: Traumatic Brain Injury
- US Senate: Service Needs of Adults Aging with Developmental Disabilities
- WHO: Autism spectrum disorders
- WHO: Dementia

Watch

- Cognitive Accessibility: user needs to specifications - W3C TPAC Panel, 2021
- AMA: Understanding COGA, W3C's cognitive accessibility guidelines - Google I/O 2021
- Why commit? - Kirkwood, TEDx
- The W3C Web Accessibility Initiative + Cognitive Accessibility - Lee

Thank you!

Ways to get involved

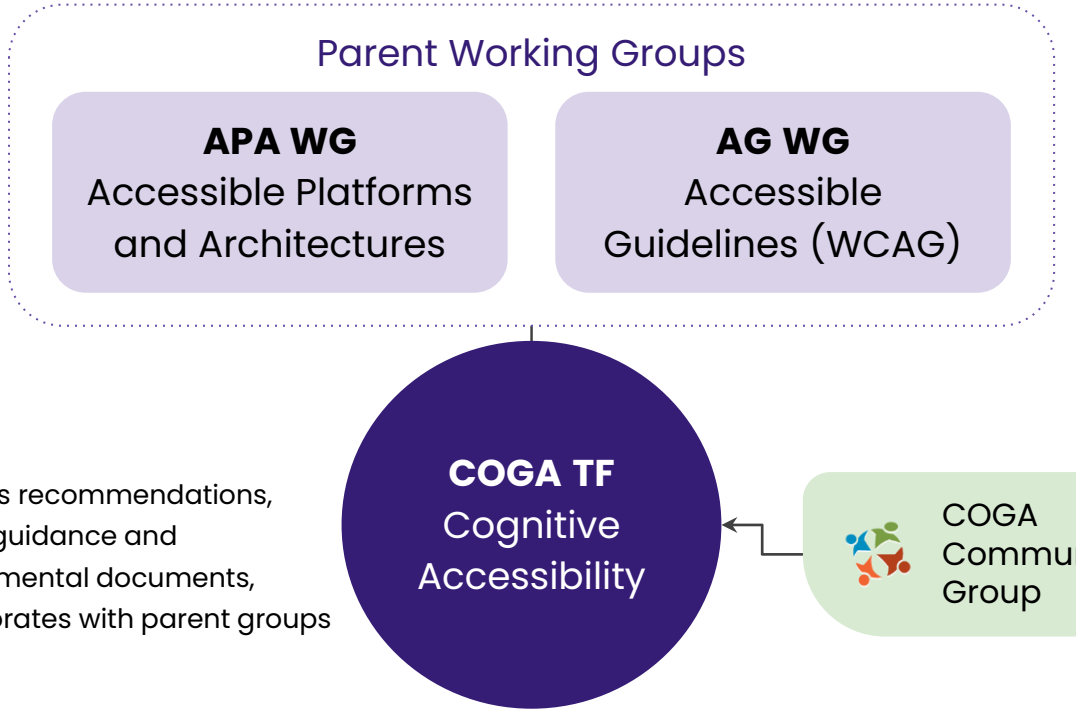
- Join the COGA Task Force: w3.org/WAI/GL/task-forces/coga
- Join the Community Group: w3.org/community/coga-community
- Include these objectives in your work!

Appendix

Slides that are here in case they help answer questions

Link: COGA Task Force

How COGA fits into the **W3C landscape**



Reviews recommendations, writes guidance and supplemental documents, collaborates with parent groups

Independent of the task force.. Provides valuable feedback from a diverse community.

Link: COGA Task Force

What COGA is doing

Accomplished

Published version 1.0 of Making Content Usable for People with Cognitive and Learning Disabilities in April, 2021

Working on

Collaborating on WCAG3 specifications

- Clear Language
- Access to Help

Mental Health & COGA literature review

Future plans

Release version 2.0 of Content Usable, which will include:

- Mental health user needs and patterns
- More emphasis on internationalization

What you can do for cognitive accessibility:

Work with COGA when writing documents, recommendations and specifications

- Add some of our user stories, needs, and personas into your specifications
- Ask us for user needs specific to your work
- Ask us to review your work

What you can do for cognitive accessibility:

Raise awareness and get involved

- Tell your teams about the COGA Task Force and COGA users!
- Let us know about personas and user needs we may have missed
- Give us feedback on Content Usable
- Join the COGA task force or community group