



Cognitive Load Workshop

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NOVEMBER 8, 2023

What is Cognitive Load?

Cognitive load refers to the amount of mental effort required to complete a particular task. When we use web applications; we are often required to process and remember a lot of information, such as navigational elements, instructions, and the content itself. The more information we need to process, the higher the cognitive load. For users with disabilities, this cognitive load can be even higher due to additional processing demands associated with their impairments. If the cognitive load is too high some things may not be processed at all. This could lead to the users making mistakes, taking longer to perform regular tasks or even block them from moving forward with their workflow.

Key Points

Common Problems

- Cluttered User Interface
- Complex Navigation
- Ambiguous Instructions
- Slow Load Times

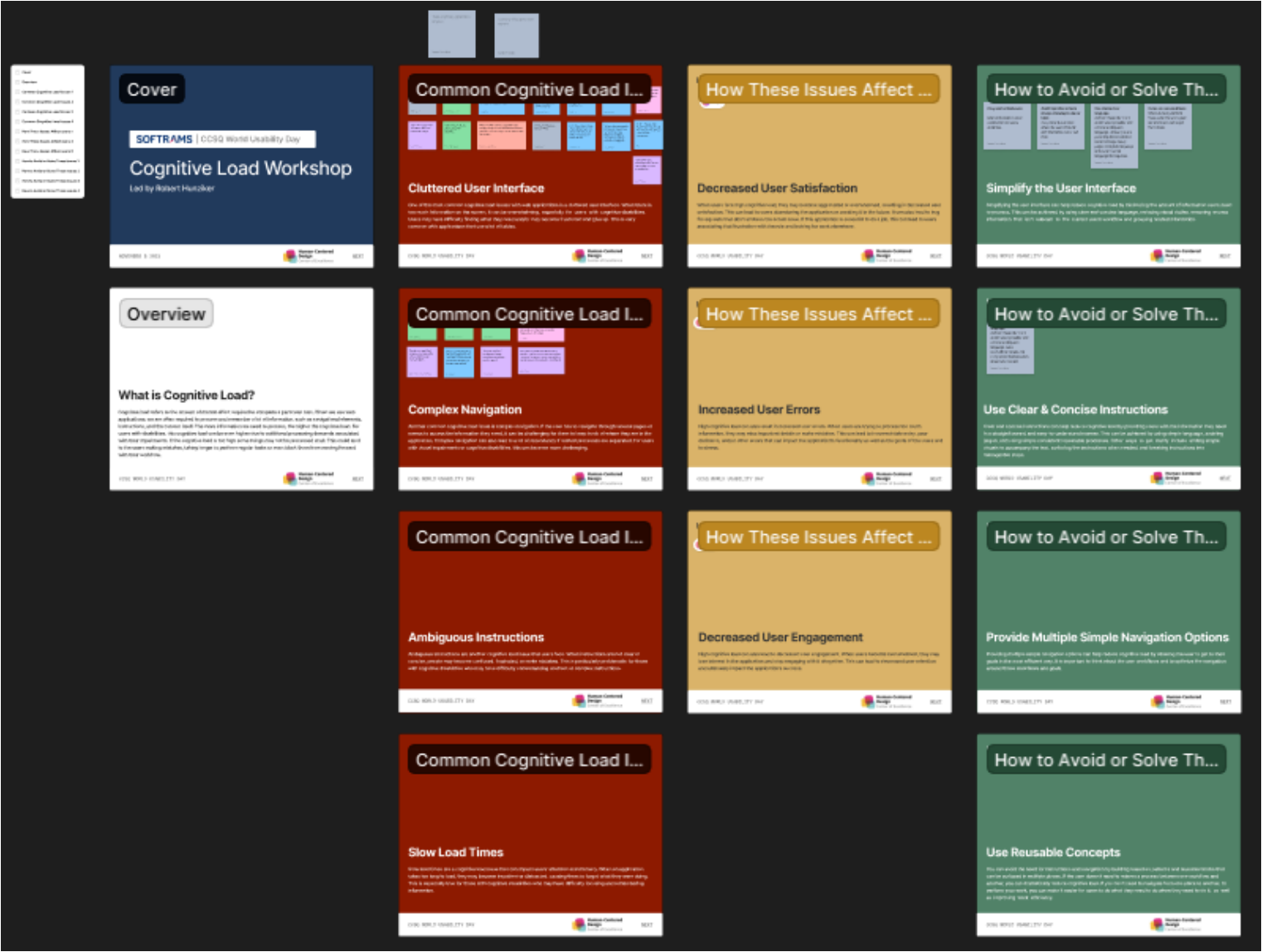
Common Outcomes

- Decreased User Satisfaction
- Increased User Errors
- Decreased User Engagement

Possible Solutions

- Simplify the user interface
- User Clear & Concise Instructions
- Provide Multiple Simple Navigation Options
- Use Reusable Concepts

Workshop Overview





Common Problems

Cluttered User Interface

One of the most common cognitive load issues with web applications is a cluttered user interface. When there is too much information on the screen, it can be overwhelming, especially for users with cognitive disabilities. Users may have difficulty finding what they need and/or may become frustrated and give up. This is very common with applications that use a lot of tables.

Cluttered User Interface Response Summary

Poor website design

- Intrusive ads, videos, and pop-ups on websites.
- Mobile versions of pages not rendering correctly.
- Too much text and not enough white space.

Overwhelming options

- Productivity apps with too many options.
- Websites with too many tabs to sort through.

Difficult navigation

- Changing website structure and navigation location.
- Unclear self-service options on websites.
- Confusing chat channels with similar naming conventions.

Cluttered forms

- Filling out too many input fields on a form.
- Odd workflows and poorly thought through design choices on government forms.

Frustrating signage

- Traffic signage coupled with poor road design.
- Multiple locations for share icons on Amazon.

Complex Navigation

Another common cognitive load issue is complex navigation. If the user has to navigate through several pages or menus to access the information they need, it can be challenging for them to keep track of where they are in the application. Complex navigation can also lead to a lot of redundancy if related processes are separated. For users with visual impairments or cognitive disabilities, this can be even more challenging.

Complex Navigation Response Summary

Mobile navigation issues

- Some websites have a desktop navigation that doesn't match the mobile version, causing certain pages to be inaccessible on mobile devices.
- Multilevel menus can become difficult to navigate on mobile screens.

Multilevel menus

- Websites with multilevel menus sometimes forget to create a mobile-friendly version, making it difficult to navigate on smaller screens.
- Having too many top-level navigation choices can also be overwhelming for users.

Inconsistent navigation

- Breadcrumb trails can become very long or have labels that are not representative of the content.
- Click cycles can lead users to the same pages repeatedly, making it difficult to understand if you are making progress or in the correct location.

Ambiguous Instructions

Ambiguous instructions are another cognitive load issue that users face. When instructions are not clear or concise, people may become confused, frustrated, or make mistakes. This is particularly problematic for those with cognitive disabilities who may have difficulty understanding abstract or complex instructions.

Slow Load Times

Slow load times are a cognitive load issue that can impact users' attention and memory. When an application takes too long to load, they may become impatient or distracted, causing them to forget what they were doing. This is especially true for those with cognitive disabilities who may have difficulty focusing and remembering information.



Common Outcomes

Decreased User Satisfaction

When users face high cognitive load, they may become aggravated or overwhelmed, resulting in decreased user satisfaction. This can lead to users abandoning the application or avoiding it in the future. It can also lead to bug fix requests that don't address the actual issue. If this application is essential to do a job, this can lead to users associating that frustration with the role and looking for work elsewhere.

Increased User Errors

High cognitive load can also result in increased user errors. When users are trying to process too much information, they may miss important details or make mistakes. This can lead to incorrect data entry, poor decisions, and/or other errors that can impact the application's functionality as well as the goals of the users and business.

Decreased User Engagement

High cognitive load can also lead to decreased user engagement. When users become overwhelmed, they may lose interest in the application and stop engaging with it altogether. This can lead to decreased user retention and ultimately impact the application's success.



Possible Solutions

Simplify the User Interface

Simplifying the user interface can help reduce cognitive load by minimizing the amount of information users need to process. This can be achieved by using clear and concise language, reducing visual clutter, removing excess information that isn't relevant to the current user's workflow and grouping related information.

How

- **Progressive Disclosure:** Show information when needed for the users workflow.
- **Avoid repetitive actions always showing in a list or table:** Only show the actions when the user interacts with that table row or list item
- **Use simple clear language:** Actions should be 1 or 2 words when possible and not use ambiguous language. Unless you are providing documentation avoid verbiage heavy pages. Use plain language and avoid internal language like legalese.
- **Focus on user workflows:** When showing content focus what the user goals are and how best to get them there.

Use Clear & Concise Instructions

Clear and concise instructions can help reduce cognitive load by providing users with the information they need in a straightforward and easy-to-understand manner. This can be achieved by using simple language, avoiding jargon, and using simple consistent repeatable processes. Other ways to get clarity include adding simple visuals to accompany the text, surfacing the instructions when needed, and breaking instructions into manageable steps.

How

- **Use simple clear language:** Actions should be 1 or 2 words when possible and not use ambiguous language. Keep instructions simple and compartmentalized when absolutely needed.

Provide Multiple Simple Navigation Options

Providing multiple simple navigation options can help reduce cognitive load by allowing the user to get to their goals in the most efficient way. It is important to think about the user workflows and to optimize the navigation around those workflows and goals.

Use Reusable Concepts

You can avoid the need for instructions and navigation by building based on patterns and reusable blocks that can be surfaced in multiple places. If the user doesn't need to relearn a process between one workflow and another, you can dramatically reduce cognitive load. If you don't need to navigate from one place to another, to perform your work, you can make it easier for users to do what they need to do when they need to do it, as well as improving work efficiency.



Thank
you