



Cadmus Inclusive

Thinking differently for a brighter tomorrow...



Limiting Cognitive Load

What does that mean?

Cognitive Load refers to the amount of information that your brain has to process and the effort that your brain has to take when carrying out a task

A little more information

- Cognitive Load Theory is an educational and psychological framework developed by John Sweller. The theory explores how the brain with a limited working memory is further impacted by the type of task, the complexity of the task and the instructions provided alongside of the task.

There are three types of Cognitive Load:

- Intrinsic Cognitive Load: how difficult the task is both inherently and also by the amount of previous knowledge and expertise the user has.
- Extraneous Cognitive Load: the mental effort resulting from factors such as distracting environment, confusing directions, poor design.
- Germane Cognitive Load: the mental effort involved in processing, organising and storing information into memory.

Everyone's Cognitive Load limit is different dependent upon their age, abilities, prior knowledge and nature of the task given. When Cognitive Load is not managed effectively a learner can experience 'Cognitive Overload' resulting in fatigue, concentration lapses, memory lapses, dysregulation and inability to take on any further learning.

How to limit Cognitive Load?

Begin by cutting the Extraneous Cognitive Load. This can be achieved by:

- Consider the learning environment. Reduce distractions, background noise and other sensory sensitivities.
- Reduce the amount of information presented to the learner, so that Cognitive Load is not being used up on identifying relevant information and disregarding irrelevant information.
- Consider the task design. Are learners having to problem solve and do additional tasks which are not related to the learning goal?
- Provide a clear model for the task at hand. This could be achieved by providing a finished model for the learner to reference or by providing step by step clear instructions on how to complete a task.
- Chunk information provided by breaking it down into smaller pieces or using pictures and symbols to clearly demonstrate meaning.
- Allow time for learners to process information given to them.
- Put all of the information a learner needs in one place, reducing the need to look between different sources of information.
- Provide further modelling if needed. Following an “I do, we do, you do” model, extend the “we do” section so that you work alongside the learner further modelling the task.
- Provide transient information in a written or pictorial form so that they do not have to hold this information in their working memory.

Use scaffolds to support a learner during tasks and as they become more proficient and skilled at a task, gradually remove these.

Worked example of reducing Cognitive Load

Original Task: The Class Teacher reads the story of “Little Red Riding Hood” to the class stopping just before Little Red Riding Hood enters Grandma’s house. She then asks the class to write a prediction about what they think will happen next in the story.

Considerations when reducing Cognitive Load:

- This task requires lots of transient information as the story was read aloud. The learners then have to recall the information from the story so far, hold it in their working memory to then make predictions. Consider providing the children with a summary of the key parts of the story so far in written or pictorial form.
- Chunk key information for the learners by providing a simple story board of what the wolf did to Grandma in the house and where he is hiding and what he is wearing.
- The task is to write a prediction. Consider the task design, is the outcome of this lesson to do with writing or predicting? For some learners, the process of writing will take up large parts of their working memory causing them to become over loaded. Consider getting the children to record their predictions using recordable devices or sharing them with a group that is then scribed by an adult.
- Provide a worked example of what might happen next in the story for learners to see during the lesson.
- Provide further modelling of the task, working alongside learners to make further predictions based upon what you already know.
- Provide additional scaffolds when needed, such as providing a selection of pictures that show different possibilities of what happens when the Little Red Riding Hood goes into the house.

If you want to learn more about limiting cognitive load



Useful websites:

[EEF blog: Clarity is king - reducing extraneous load | EEF](#)