SPEECH BOX

What is Cognitive Load?

The Importance of Cognitive Load

Cognitive load is the amount of information our brains can hold and work with at one time while completing a task. To explain how cognitive load can impact learning, we can refer to Cognitive Load Theory (CLT). If too much information is presented at once, it can lead to cognitive overload and it can be harder for information to enter working memory and then into long-term memory, which affects learning.

Types of Cognitive Load

1. Intrinsic Load (Manage):

- This refers to how difficult a task is for a particular student. It depends on: *1)* how much there is to learn; *2)* what the student already knows; *3)* how much information they need to hold in their mind at once.
- Students can typically hold 3-7 chunks of information in their working memory at one time. The more information stored in long-term memory, the easier the task feels. Intrinsic load can be managed by connecting new learning to what students already know and simplifying tasks when introducing new material.

2. Extraneous Load (Reduce):

- This is the unnecessary information that makes learning harder such as distracting visuals (e.g., flashy animations or memes), background noise and poorly structured instructions. The aim is to reduce distractions so students can focus on what is important.

3. Germane Load (Encourage):

- This is the productive load when students use effort to connect new information with what they already know. We can encourage this by prompting students to recall earlier learning (e.g., “Remember when we learnt about…?”).
- If intrinsic and extraneous load are too high, students may not have enough mental space left for germane learning – which leads to mental overload and reduced learning.

How can Cognitive Load be supported to enhance student learning at home and school?

- Use simple, clear instructions and say it and show it at the same time
- Link new learning to prior knowledge (“Remember when we…” statements)
- Give worked examples before asking students to try independently
- Reduce distractions: avoid background noise and cluttered slides or pages
- Choose fonts that are simple and easy to read
- Use visuals that are clear and directly support the task and provide scaffolds (e.g., visual cues, word banks, step-by-step prompts) and fade supports gradually
- Avoid showing images and written text at the same time – talk through the image instead

References
Lovell, O. (2020). Sweller’s cognitive load theory in action. John Catt Educational Ltd.