

Welcome to Central Learning and Teaching Newsletter 5!

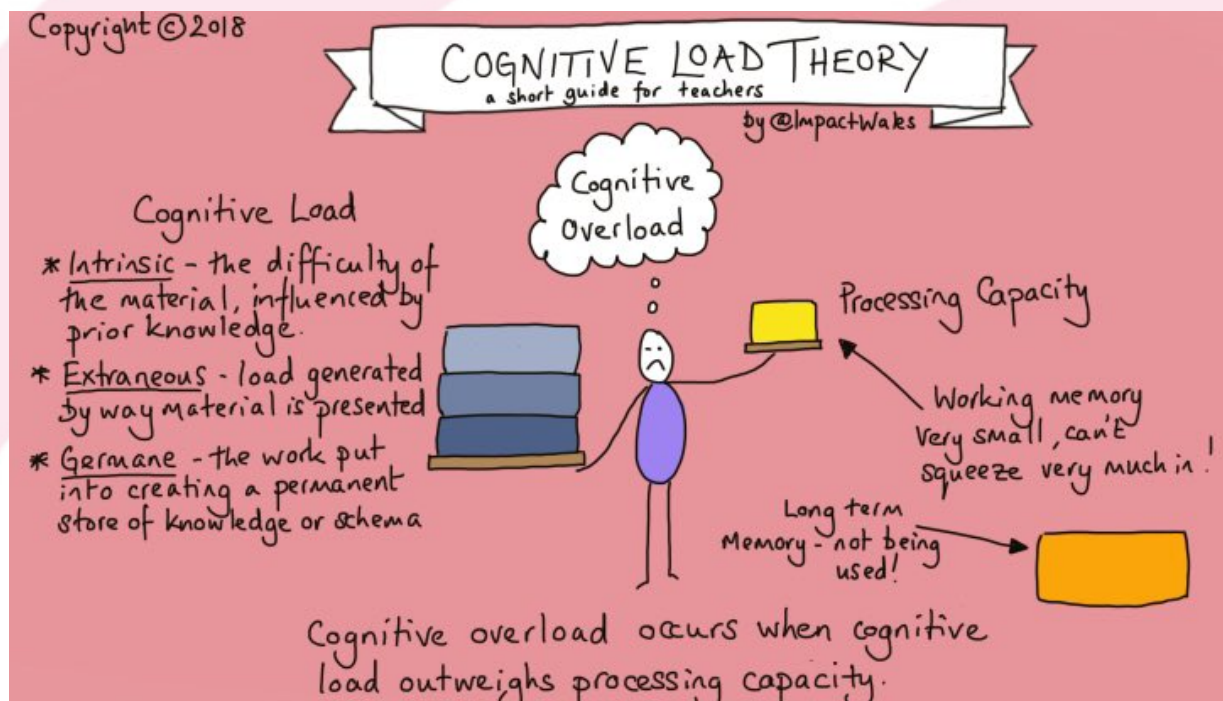
In this edition, we will explore the links between cognitive load theory and retrieval practice: how can task design avoid cognitive overload and how can retrieval practice relieve the pressure on working memory?

What is Cognitive Load Theory?



This theory emerged from the work of educational psychologist John Sweller and colleagues in the 1980s and is described as "the cognitive load involved in a task is the cognitive effort (or amount of information processing) required by a person to perform this task (Reif, 2010)

"Cognitive load theory is built upon two commonly accepted ideas. The first is that there is a limit to how much new information the human brain can process at one time. The second is that there are no known limits to how much stored information can be processed at one time." Click [here](#) for full paper.



How do we design retrieval tasks and avoid cognitive overload?

Reduce the extraneous load by:

- removing extra visuals and effects that are redundant and therefore distractors on your slides and handouts.
- marry up visuals and written instructions: scaffold and make your instructions concise and explicit.
- integrate different sources of information on same handout/slide.

Pitch the intrinsic load carefully by:

- designing activities that aim to shift knowledge to long-term memory such as *worked examples for instance.
- using diminishing cues (see T&L Newsletter 4)
- ensuring students have the required prior knowledge to attempt/complete the task.
- going from simple to complex tasks

*worked examples work best for novice students at the practice stage as they alleviate pressure on working memory, allowing them to gain confidence.

Maximise the Germane load by:

- drawing students' attention to the key knowledge.
- make the links between new and prior knowledge explicit.
- reducing the extraneous load!



Literacy and retrieval practice



Answer the questions correctly to identify a selection of letters
Use these letters to work out the code word for today's lesson
Do not use your books.

- A type of training that is a Swedish word for 'speed play'.
- A type of training that improves power and involves jumping and bounding
- A type of training that can be used to improve any component of fitness depending on its design
- A type of training suitable for a long distance runner which does not have any stops or breaks
- An advantage of the training type is that it burns body fat quickly. You work to your maximum for 30 seconds then rest for 15 then begin again
- Involved the use of resistance to cause the adaptations of muscles
- A type of training that increases flexibility and costs nothing to complete