

LEARNING AND TEACHING NEWSLETTER 5 12TH APRIL 2021

Welcome to Central Learning and Teaching Newsletter 5!

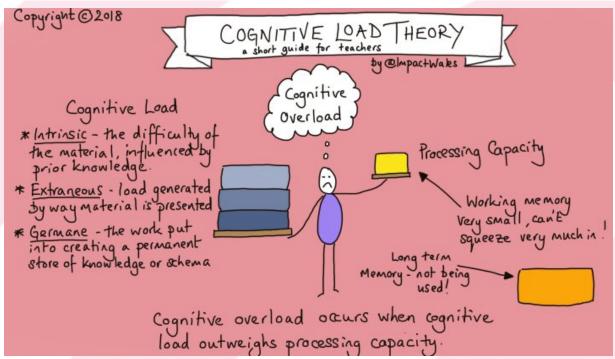
In this edition, we will explore the links between cognitive load theory and retrieval practice: how can task design avoid cognitive overload and how can retrieval practice relieve the pressure on working memory?

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



TO A	CRACK THE CODE	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 Swedish word for 'speed play'. Inproves power and involves jumping
. ,	component of fitness de	le for a long distance runner which
	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 resist muscles	trance to cause the adaptations of
	A type of training that in complete	creases flexibility and costs nothing to
		Scrabbled letters: Today's code word:

The above retrieval task is one of the many retrieval tasks Rob has kindly uploaded to Padlet for PE. Go take a look here and remember to keep uploading your resources; sharing is caring!

The intrinsic load has been considered by offering cues to students but also retaining the difficulty by removing access to books. The slide is simple and the instructions at the top are clear and concise. The Germane load is maximised by linking the task to the lesson's objective, suggesting an opportunity for follow up discussion and explicit links to prior knowledge.

From a literacy point of view, the task focuses on subject specific terminology and checks that students actually understand the meaning of the words/phrases that need retrieving.

It allows the teacher to reinforce spelling but also to identify potential misconceptions, offering an opportunity to reteach if necessary.

Classroom Culture and retrieval practice

STRONG START WHY? HOW? WHAT? By starting a lesson 'strong' and *A seating plan is in place which *Students quickly and calmly sit down, therefore immediately, we are optimises learning getting equipment out on their desks emphasising to students that their *Station yourself at the threshold so and putting bags/ coats on the floor. education matters - we do not have a you can monitor students' strong start. *Students begin the 'Do Now' activity in second to spare as each moment is *You give verbal instructions about the focused on learning. It sets the tone 'Do Now' as students enter the *Teachers monitor students' behaviour and builds momentum. It also allows us classroom. This is reinforced with and completion of the 'Do Now' in to establish our high expectations instructions on the whiteboard. silence, positively reinforcing those adhering to expectations. Those who which are focused on learning. * Students either collect the 'Do Now' activity or it is at their desks. aren't, are reminded and asked to *If students do not meet your repeat. expectations, remind them and ask *Senior and Middle Leaders ensure high them to do it again. standards through visibility & support.

The Strong Start routine is part of our Central Line on classroom culture.

Routines help alleviate extraneous load by providing students with a clear and consistent framework for learning, in this case for starting lessons. Concise and visible instructions help remove uncertainty and the expectation of silent work to start every lesson, coupled with visible teacher monitoring, removes potential distractions; this allows students to concentrate and focus on the task whilst reinforcing a message of high expectations from an academic as well as behavioural standpoints.