Beneath the surface of cognitive science

Defining key concepts that underpin how we learn



To make purposeful use of cognitive science practices, teachers and school leaders need to know the core concepts that underpin them.

If we look below the surface, strategies such as interleaving and retrieval practice are based on key memory processes as well as Cognitive Load Theory.

This poster defines some of the key terminology to support teachers and school leaders in building a shared understanding of these concepts in their school.





Working memory

This is where new information is processed. It has a limited capacity and may vary from person to person. Working memory can be overloaded, inhibiting learning.



Long term memory

This is where previous learnt information is stored. It has a potentially unlimited capacity.



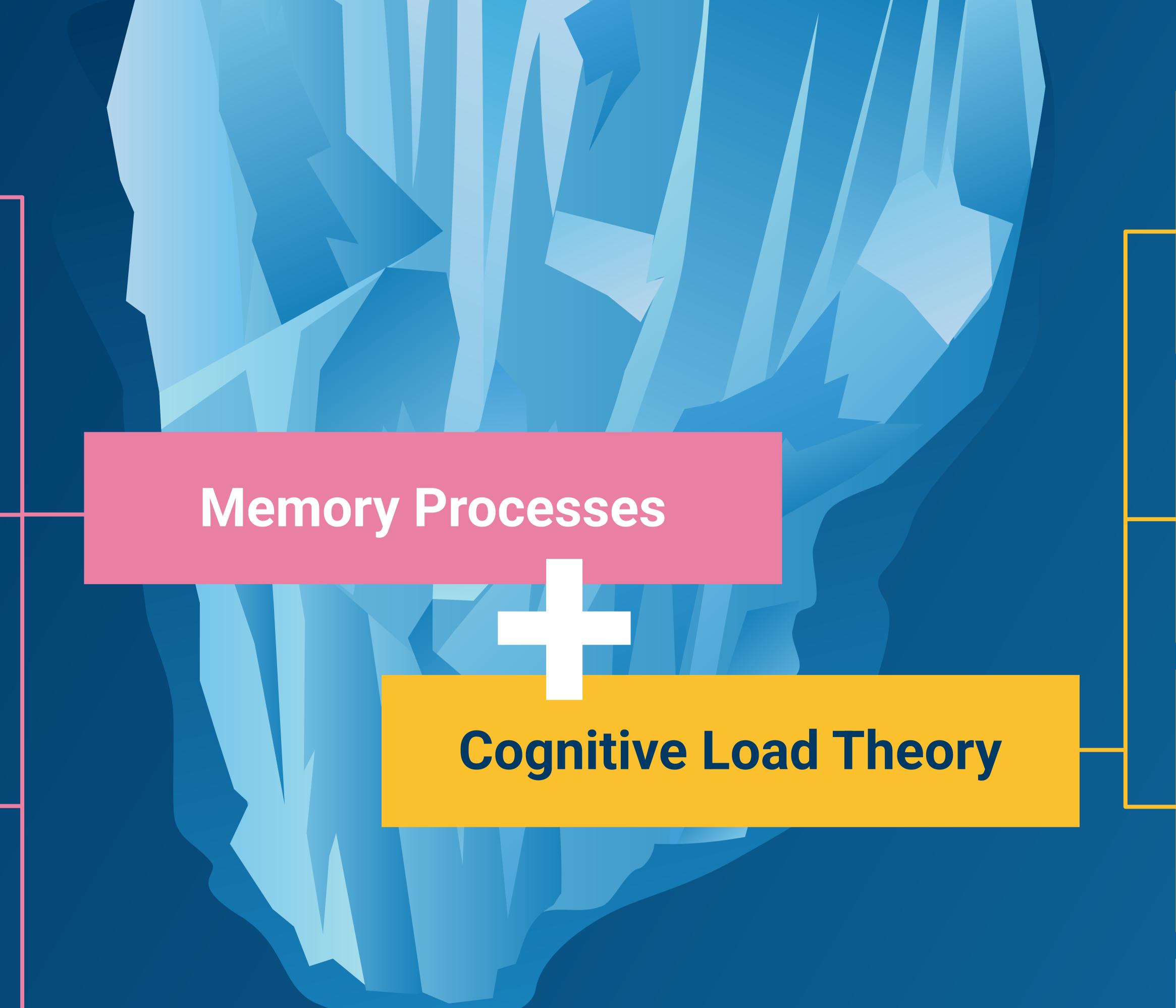
Encoding

This is how information from the working memory is transferred to the long term memory. Information not encoded can be forgotten.



Retrieval

This is when information from the long term memory is brought back into the working memory. Retrieval can strengthen memory.





Cognitive Load

This is the amount of working memory being used when asked to process information or a task.



Intrinsic Load

This is the level of challenge or difficulty inherent in the information or task.



Extraneous Load

This is the level of challenge or difficulty contained in the presentation of the information or task, or by environmental factors.



Further information and guidance can be found in the EEF's evidence review 'Cognitive science approaches in the classroom: a review of the evidence'