Tom Sherrington

DAN WILLINGHAM'S SIMPLE MEMORY MODEL

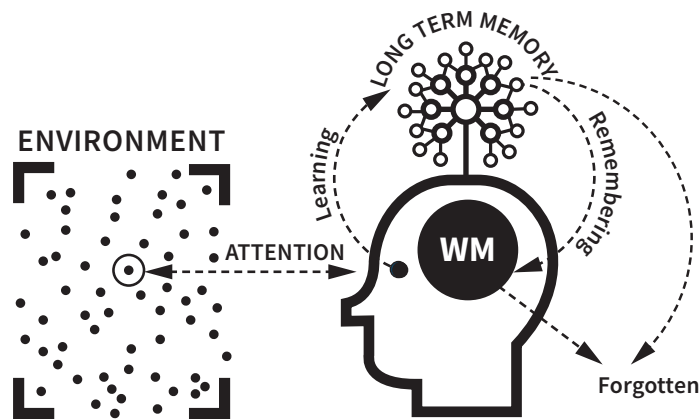## SIDE LINES

MAKE IT STICK

Henry Roediger III

Make It Stick bought the results of the laboratory out into public attention. It told students that rereading was ineffective and that at the heart of learning was the act of retrieval. Furthermore, Roediger warned students of the delusion of thinking they knew more than they do. Instead of highlighting, they ought to mix up their practice and to embrace the inherent difficulty involved in learning new content.

MAKE IT MEANINGFUL

Jeffrey Karpicke

Picking up the baton from Joseph Novak's seminal research on concept maps and meaningful learning, Jeffery Karpicke used this visual organisation method as part of, and in sequence with, straight retrieval practice. Karpicke wanted to address the accusation that retrieval practice was merely rote learning with little meaning attached. He did this by showing how retrieval aided subsequent concept mapping.

MEMORY AND LEARNING

By practising retrieval, we aim to build a more secure schema. This happens by activating prior knowledge so that the student thinks about the new material in that context. It is not aimless guesswork but, rather, about searching for links and resonance.

To ensure new connections remain stable, and your practices sustainable in your classroom, follow these principles:
- Involve everyone.
- Make checking accurate and easy.
- Specify the knowledge to be learned.
- Keep it generative.
- Vary the diet.
- Make it time efficient.
- Make it workload efficient.

QUIZZING

Until recently, it hasn't been obvious to teachers that *"the simple act of testing your knowledge strengthens your recall of it in future"*. Indeed, its impact is so powerful that quizzing just part of the topic content is more effective than re-reading it all. Retrieving what you know triggers and strengthens schema formation.

Applying this requires you to:
- Use different types of methods.
- Allow sufficient time for all students.
- Use student self-checking to save time.
- Quizz known material; no surprises.

ELABORATIVE INTERROGATION

This method involve asking and answering *How?* and *Why?* questions. Both require an exploration of relevant schema — and often in a multi-directional way.

But don't assume students will know how to do this. Model how to formulate and pose such questions. A visualiser, accompanied with your metacognitive narrative does the job nicely.

Research has shown that students working alone — and silently — with this strategy are as successful as when working in pairs. But as you can't see it in order to monitor it, model its use for students' future home revision practices.

KNOWLEDGE ORGANISERS

We now all recognise that a Knowledge Organiser is not a curriculum but, rather, a platform for retrieval practice.

These formats present information in easy-to-access and meaningful ways by being categorised, labelled, sequenced, tiered, mapped and so on.

Instead of always allowing a simple answer to suffice, probe deeper. Zoom in, ask for links and other methods to tie in the discrete piece of information to a larger schema. The more the information is meaningful — by being related to a schema — the stronger the memory.

PEER-SUPPORTED
Increase the number of interactions by using pairs of students to pose and answer questions. Ensure you walk around and monitor quality.

WEEKLY & MONTHLY
Frequency is paramount, not the chosen method. Make the dates of the tests known to students, but not the type of test to be used.

CONCRETE EXAMPLES
Testing rules and some examples reinforces understanding, especially by quizzing both ways, from one to the other.