



Retrieval and Memory Strategies

Tuesday 21st April 2026

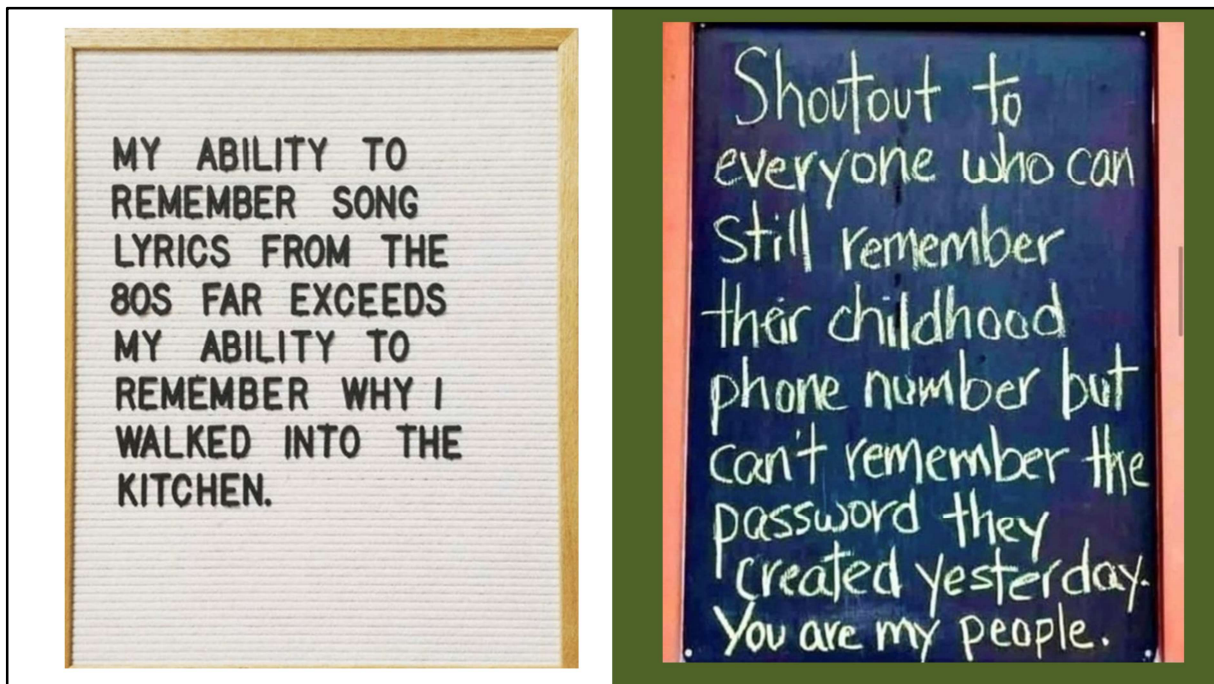
Good morning everyone and welcome to our session today. I am really excited to share information with you today that I have been working on and researching for the past 4 years. As a staff team we have engaged with lots of research, including had staff training from Kate Jones, who has written several books on memory and retrieval practice. Today we are going to spend 15 minutes in here with me sharing a little more about memory and the retrieval strategies that we use in school, followed by 15 minutes of seeing retrieval practice being used in class.

How would you describe your memory?



Ask this question to
your friends and
family members -
even to your
children!

I thought I would start with a little reflection. How would you describe your memory? Out of children and adults, 9/10 people are very negative and critical of their memory. "It's terrible - shocking, patchy, unreliable." As we are being so negative, we are showing a lack of understanding of memory. We are referring our working memory, previously known as short term memory. It's an immediate type of memory where new info enters. We can't hold much for long in our Working memory. For example, you met new parents and children when your child joined in Robins and someone probably introduced themselves to you and told you their child's name. 30 seconds later, you forgot! You might have felt too embarrassed to ask them again. This isn't because you were uninterested or rude – the information has come out of your working memory. Our long term memory is incredible - Barbara Oakley wrote in her book 'Uncommon sense teaching' that we don't know the limitation of long term memory. Our memory could hold as much information as grains of sand on the beach! I could ask you a question about your life from decades ago and you would be able to recall it. Working memory is unreliable and limited, but long term memory is incredible, it can go on and on.



I'll give you a moment to read these 'evidence based memes' – the reason we can remember these things is because they are embedded in our long term memory! You're not silly, you're not getting old, it's your working memory being unreliable. The songs and phone number are embedded in our long term memories.

The Learning Process Model - Melton (1963)

Attention & Encoding



Storage



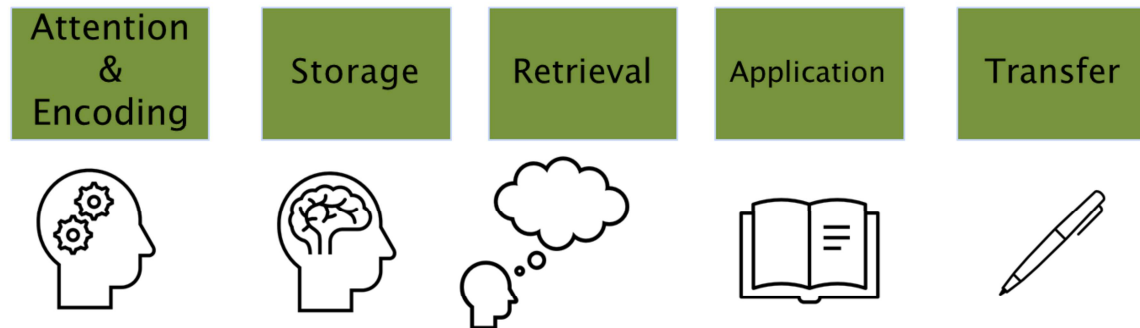
Retrieval



Arthur Melton published in the 60s and he was a leading expert in the field of psychology and memory. This Learning Process Model is old but has stood the test of time. When we look at the process, **attention** comes first – if students are not paying attention, they will not learn. **Encoding** refers to the transfer of information from working memory to long term memory. As we know, children forget things, so as teachers we regularly check for understanding and make opportunities for repetition and reviewing information.

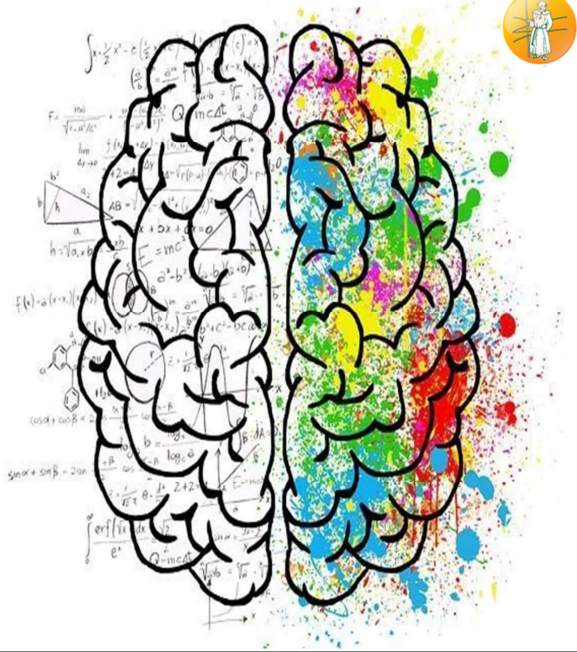
Storage refers to long term memory. In 1992, Bjork and their team realised that two things are good for memory, our storage strength and our retrieval strength. Storage strength is how well information is embedded in our LTM. Bjork suggested that it's not a case "if you don't use it, you lose it" as we once believed – if something goes into your LTM it will always be stored there. It is our retrieval strength that tells us how accessible it is at any given point. If we are struggling to remember, that is because our retrieval strength is low. This is improved through retrieval practice. Every time you use your memory, you improve your memory.

The Learning Process Model updated (2022)



As I mentioned before, we worked with Kate Jones as part of the implementation of this project. Kate Jones (2022) reflected as a teacher on Arthur Melton's model, and updated it to include application and transfer. This is because as teachers, we know that retrieval is not the final part of the retrieval process. It is also how this knowledge can be applied and transferred.

What does
evidence from
research tell us
about retrieval
practice?



There is a lot of evidence on why retrieval practice is so effective.

10 LEARNING TECHNIQUES

➤ WHICH ARE MOST EFFICIENT?

Whether out of habit or by conscious choice, we all make use of various learning techniques when we attempt to store new information in our long-term memory. But not all study habits are created equal; some may be more efficient than others, especially when you factor in the amount of time it takes to implement each one.

Researchers have recently characterized ten learning techniques according to whether they provide high, moderate, or low utility, based on each technique's relative efficacy, ease of use, and applicability to a broad range of learning situations.

HIGH UTILITY				
 PRACTICE TESTING Using practice tests to review information		 DISTRIBUTED PRACTICE Spreading out study sessions over time		
MODERATE UTILITY				
 ELABORATIVE INTERROGATION Asking yourself "why" as you read	 SELF-EXPLANATION Generating reasons to explain new information	 INTERLEAVED PRACTICE Trying out different types of problems when you practice		
LOW UTILITY				
 SUMMARIZATION Summarizing lengthy information	 KEYWORD MNEMONICS Associating new words with similar sounding words	 VISUALIZING Generating mental images while you read	 HIGHLIGHTING & UNDERLINING Emphasizing key points in the text	 REREADING Reviewing information multiple times

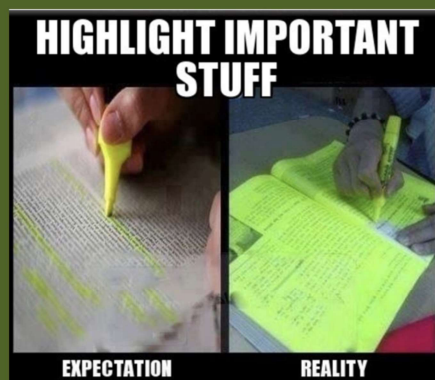
*Strengthening the Student Toolbox:
Study Strategies to Boost Learning.*
 Professor John Dunlosky. (2013)

<https://www.aft.org/ae/fall2013/dunlosky>

Professor John Dunlosky. (2013) and his colleagues looked at 10 popular study strategies and ranked them using research available by their effectiveness that teachers and students should use. At the top is practice testing, also known as retrieval practice, and distributed practice, also known as spaced practice. Retrieval practice is the act of quizzing and recalling info from long term memory. Spaced practice is about how you manage your time when it comes to study. The opposite of spaced practice is cramming, which I am sure we have all been guilty of at some point in our academic lives, staying up late the night before an exam... Spaced practice is little and often. This is why when we say practice reading, we don't expect children to read for half an hour in one go - it is more effective to do 5 minutes a day.



Sticky Knowledge



This picture made me laugh – if you ask children to highlight the important stuff, everything gets highlighted! Hopefully you have heard the phrase sticky knowledge.



Sticky Knowledge:

We make it clear to children which knowledge they need to know (it's not just nice to know!) through Sticky Knowledge. This is the knowledge from topics that we want to stick in their long term memory!

Sticky knowledge are the key facts for each half termly topic that children **need** to know.



History Knowledge Organiser – Year 6

World War 2 - What acts of friendship and community were shown during WWII?




Sticky Knowledge Facts

I know World War 2 started on 1st September 1939 and ended in September 1945.

I know the countries in WW2 were called Allies (UK, France and America) and Axis (Germany, Italy and Japan).

I know children were evacuated from big cities (such as London) to the countryside to protect them from bombings.

I know that propaganda was used to influence people's opinions.

I know that women started to work in factories and fields in order to support the national war effort.

Countries Involved

Main Participating Countries					
ALLIED POWERS		AXIS POWERS			
Country	Date Joined	Flag	Country	Date Joined	Flag
FRANCE	3 rd Sep, 1939		GERMANY	1 st Sep, 1939	
UK	3 rd Sep, 1939		ITALY	11 th Jun, 1940	
SOVIET UNION	22 nd Jun, 1941		BULGARIA	1 st Mar, 1941	
USA	8 th Dec, 1941		JAPAN	7 th Dec, 1941	

Key Individuals



Sir Winston Churchill
British Prime Minister between 1940 and 1945



Adolf Hitler
Leader of the German Nazi Party and Fuhrer of German between 1934 - 1939



Franklin Roosevelt
32nd President of the US, from 1933 to 1945.



Joseph Stalin
Communist leader and dictator of the USSR (Russia) during WW2.

Anne Frank



Anne Frank was a young Jewish girl living in Amsterdam, who had to go into hiding with her family during WWII. She wrote down her experiences in a diary. She spent 761 days hiding in the Secret Annex.

You can find sticky knowledge on the knowledge organisers that teacher's have made for their topic. These are available on the website under class pages and then clicking on the topic button. This is an example of a history KO for year 6, for their topic of WW2.



Geography Knowledge Organiser – Year 1

Our Local Area




Sticky Knowledge:	Our School address
<u>Locational knowledge</u> I go to school in Monks Risborough. I live in England. I can get to Princes Risborough from Monks Risborough by walking, bus, cycling, car and train.	Monks Risborough CE Primary School, Princes Risborough, Aylesbury Road, Buckinghamshire, HP27 9LZ, England
<u>Place knowledge</u> I know that Whiteleaf Hill is a physical feature of my local area. I know that the school is a human feature of my local area.	
<u>Human & Physical geography</u> I know that Monks Risborough is a village. It's closest town is Princes Risborough. I know that some things are manmade (human feature) and that some things are formed naturally (physical feature).	
<u>Geographical enquiry skills and fieldwork</u> I can use locational language, near/far and left/right to describe where human and physical features are in my local area.	

This is an example of a year 1 KO with sticky knowledge on. This is what a child will have in their long term memory by the time they leave year one. This information is initially taught in September, but is regularly retrieved throughout the school year.

Different types of retrieval practice ...



Multiple Choice
Questions

Short answer
questions

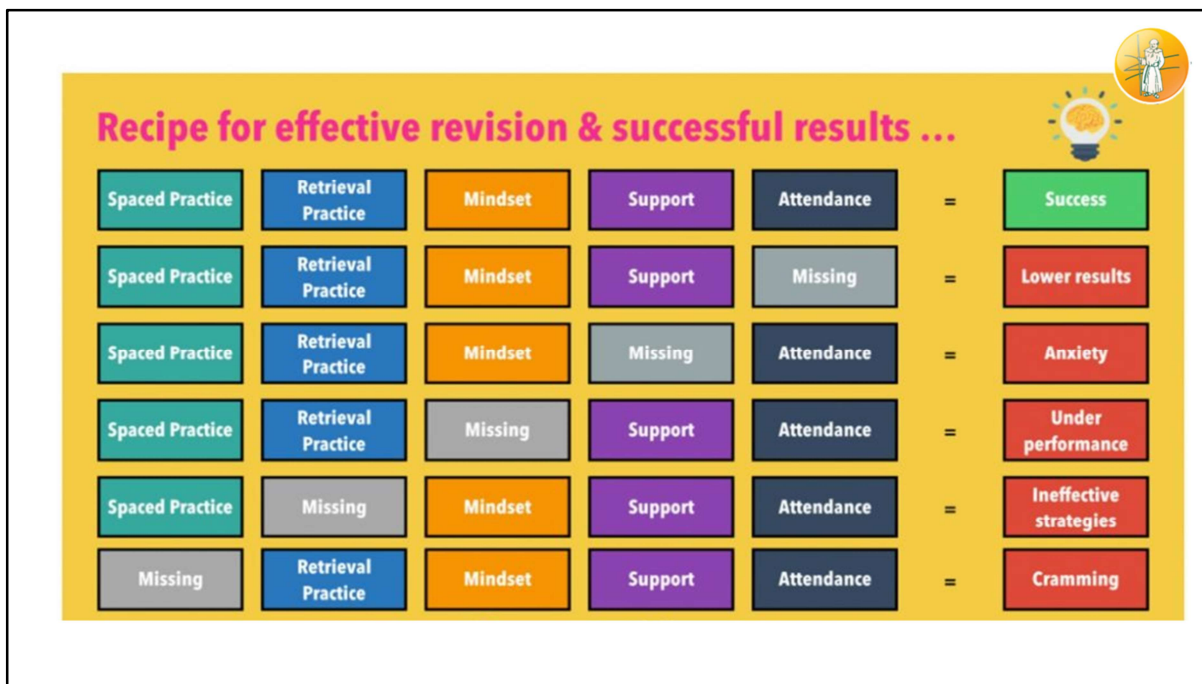
Cued/Guided
Recall

Free Recall

Elaboration

Written/Verbal
retrieval practice

These are some different types of retrieval practice that teachers might use in the classrooms. There are many other games and songs that teachers use to ensure that sticky knowledge can be retrieved from long term memory – have you heard the continent song before?



All of these elements are vital in providing a recipe for effective revision and successful results.

Success is what we want for our children!

RETRIEVAL PRACTICE

When we teach something once, then want to do more to help students learn it better, instead of just reviewing the content, we're better off giving something like a quiz. In other words, if we do more asking students to pull concepts out of their brains, rather than continually trying to put concepts in, they will actually learn better.

Retrieval practice is **NOT THE SAME AS ASSESSMENT**. Although it can look like testing, it is a **learning strategy**, not a tool for measuring or grading students.

USING IT WELL

WHAT IT LOOKS LIKE

- Think-pair-share
- Low-stakes quizzes
- Flashcards
- Brain dumps

Include Feedback

Tell students if they got the answer right or wrong.

Space Your Practice

Rather than doing retrieval all at once, spread practices out over time.

Match Practice to Assessment

If you will assess for basic recall of facts, retrieve with those. If you will require higher-order thinking on tests, include higher-order questions during retrieval.





Let's see some retrieval in action!

(Normal lessons resume at 9.30am)

Let's go to your child's classroom to see some retrieval practice in action. Please keep an eye on the time as normal lessons resume at 9.30am!