



THE GREEN PAPER IN THE CLASSROOM
- WHAT DOES THAT LOOK LIKE FOR CLASSROOM STAFF?

FREE gifts for all attending including Twitter bag in 5, mindfulness apps etc.

Videos from each room available after the event

6th July 2022
9.30-3.00 pm

KEYNOTE - NEIL MACKAY


Harnessing Cognitive Load Theory to create the Memory Lite Classroom.

Presented by Neil Mackay in partnership with Redbridge
Email: info@actiondyslexia.co.uk Website: www.actiondyslexia.co.uk

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A colleague says "I am re-teaching the same things over and over - why can't they remember?"

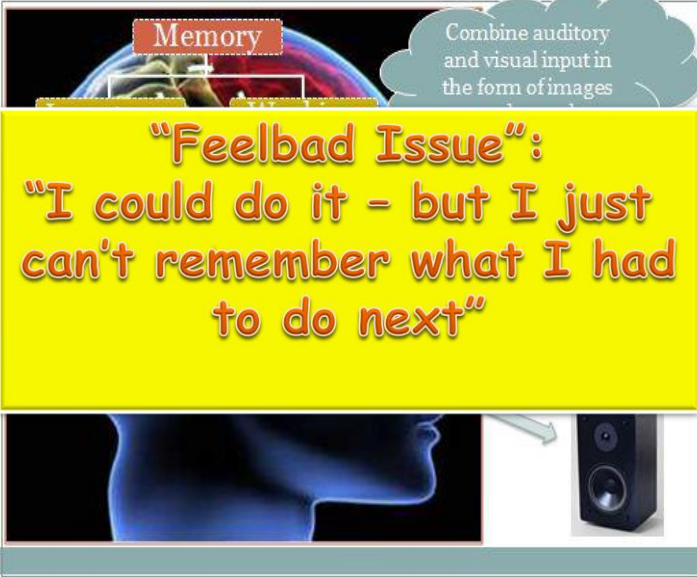


My brain is full!

COGNITIVE LOAD THEORY 2:55

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Memory

Combine auditory and visual input in the form of images

"Feelbad Issue":
"I could do it - but I just can't remember what I had to do next"

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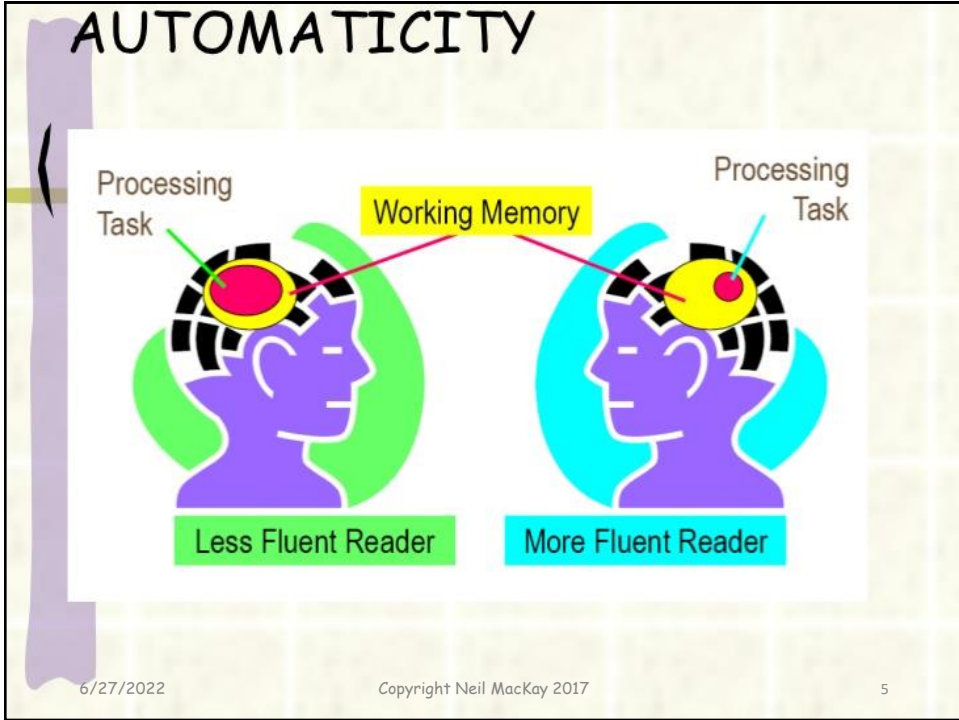
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Susan Gathercole + Tracey Alloway

Any guesses on what to look for in 5 year olds to predict underachievement/failure At Age 7?

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Are there limits to working memory?

● Here are some of the situations that lead to the loss of information:

- Engaging in a demanding task

Potential impact On Automaticity

The cost?

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Let's be clear:

- Short term memory/working memory - definitely not interchangeable phrases
- STM - **just for storage** - sustainable for seconds only
- WM - involves central executive for "**effortful mental transformations**" - holding it long enough to do something with it.

22/10/2018

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Cognitive Load Theory (Sweller et al 1991)

- "Cognitive load" - amount of information that working memory can hold at one time.
- Working memory has a limited capacity
- Essential to avoid overloading it with additional activities that don't directly contribute to learning.

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Cognitive Load Theory

- Long term remembering - transfer information working memory to long-term memory.
- Overload = bottleneck
- Transfer doesn't always take place.

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"Magic Number Theory"

- Conventional view - 7 "bits" +/- 2
- More and more researchers - much less
- 5 +/- 2 which could be 3 bits
- *When stressed/overloaded the magic number can be 3 +/- 2 = ?*

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Typical "Cognitive Overload Behaviours

- Frustration
- Distraction
- Stress
- Lack of motivation
- Task abandonment - after a good start

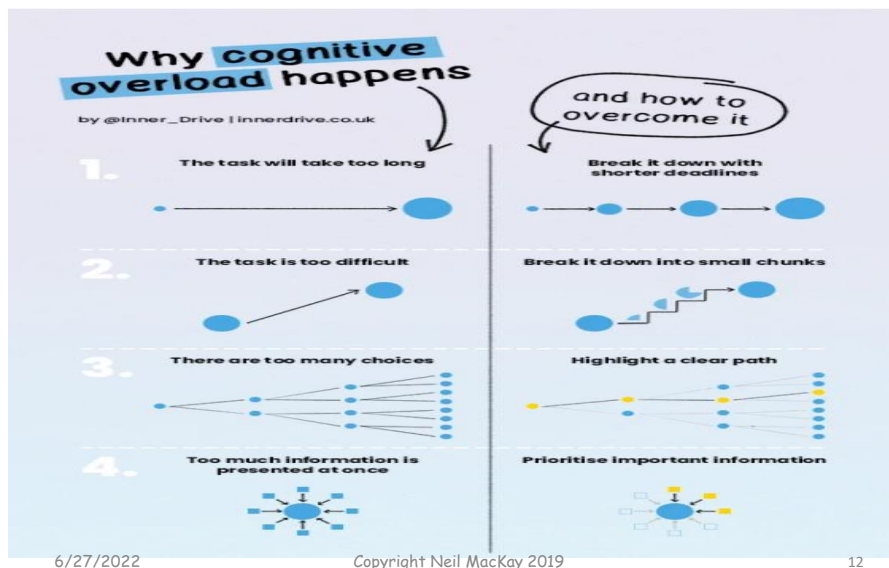
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In summary



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Carrying the load

GERMANE LOAD

the elements that aid information processing

In the gift of the teacher - accommodations.

EXTRANEIOUS LOAD

the load generated by the way the material is presented and which does not aid learning

In the gift of the teacher. - "Old habits/custom and practice"

INTRINSIC COGNITIVE

the inherent difficulty of the material itself, which can be influenced by prior knowledge of the topic

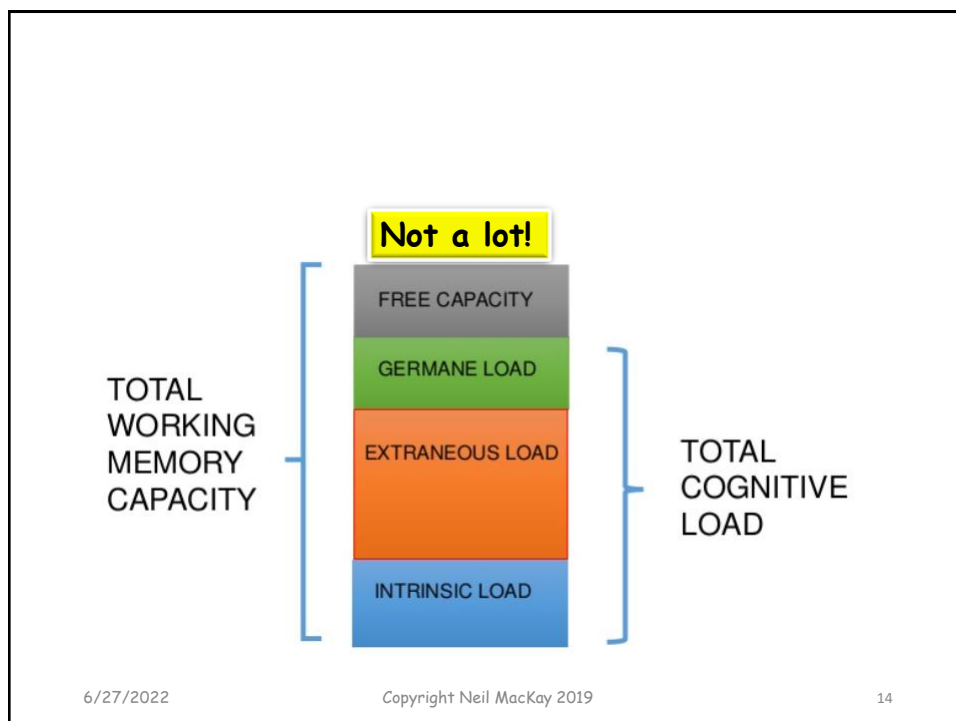
It is what it is.

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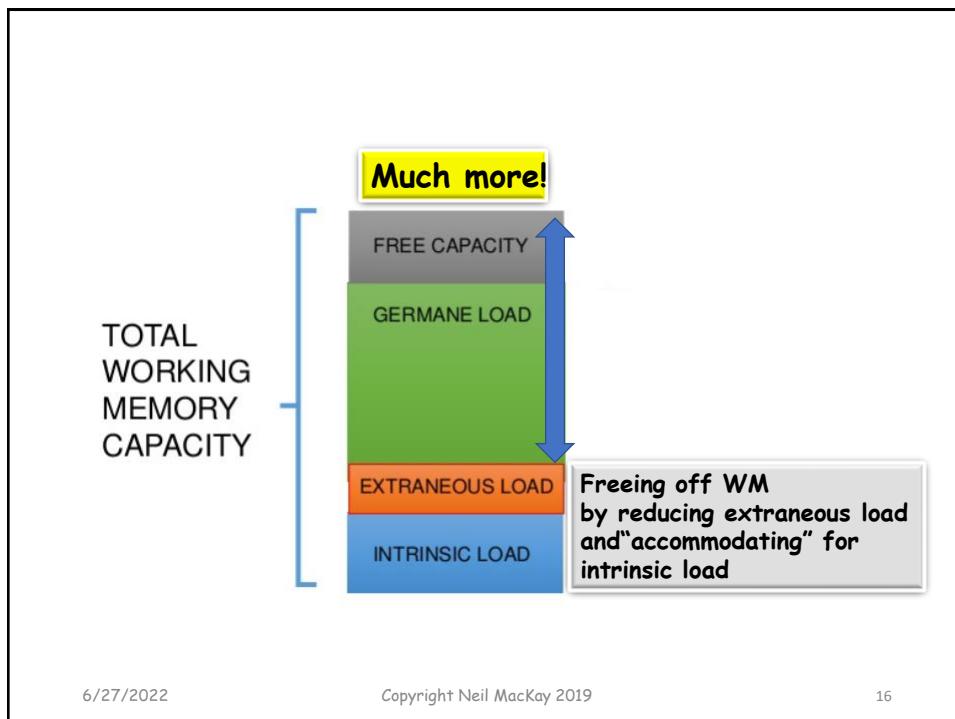
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Carrying the load

GERMANE LOAD the elements that aid information processing	Metacognitive choices, alternative evidence, UD4L Prior knowledge/context, tech, scribing..
EXTRANEIOUS LOAD the load generated by the way the material is presented and which does not aid learning	Write in full sentences Copy lesson objective/outcome Write corrections 3-10 times Read all the way through before starting.
INTRINSIC COGNITIVE the inherent difficulty of the material itself, which can be influenced by prior knowledge of the topic	Can be mediated by technology and/or accommodations. E.g: <ul style="list-style-type: none"> Quizzing Paired reading Peer tutoring Differentiation by outcome UD4L Mastery learning Immersive Reader Scanning Pen
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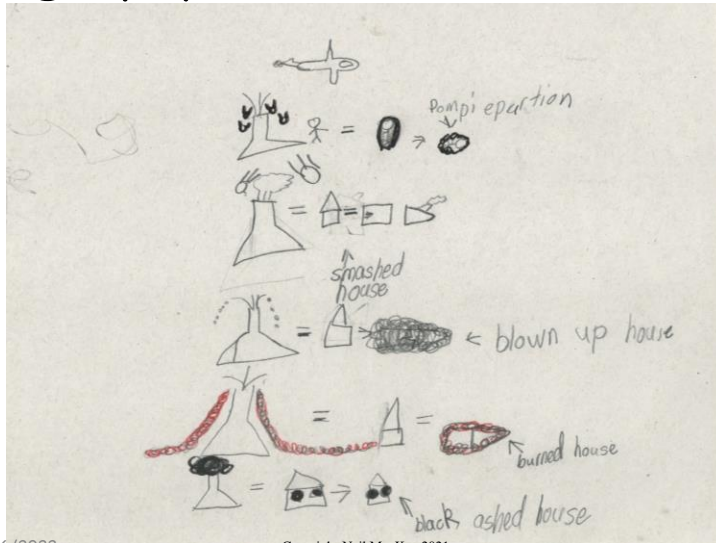
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Quick check time - What would you expect to see at the scene of a volcanic eruption? N.B. Labelled diagram only please.

Geography - volcanoes



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How about - More chunking via "spaced review"

Supported by the evidence base:

"When implemented well, formative assessment can double the speed of Learners' learning"

Dylan Wiliam Educational Leadership December 2-007/January 2008

Based on:

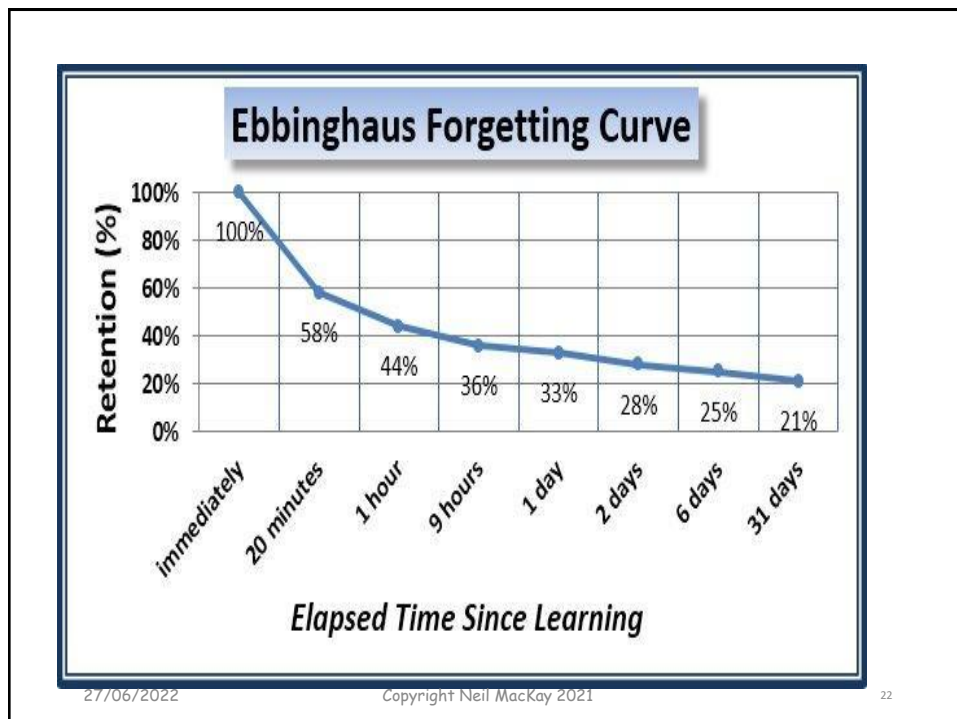
- 5 reviews of research
- 4000 studies
- 40 years of research

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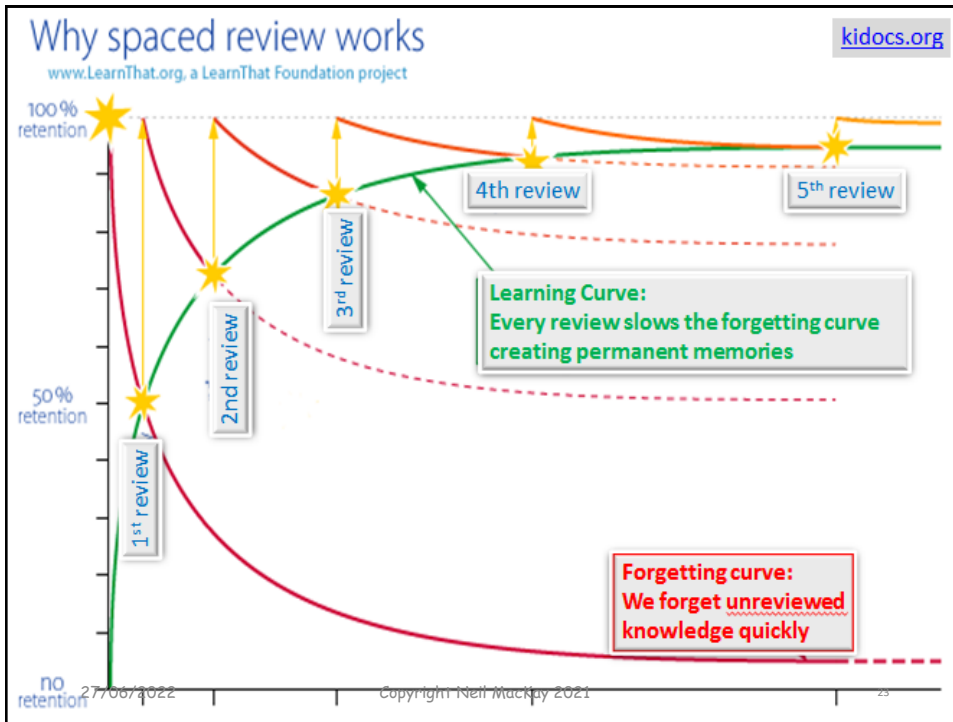
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For potentially 19 - 24
months progress
in 12.

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Review 1 - mastery check (Lesson warm up?)

Tell your neighbour

Learners 'tell their neighbour' as a means of articulating their thoughts.

- Ask a question, give thinking time and then ask Learners to tell their neighbour their thoughts.
- Tell Learners what the new topic is and then ask them to tell their neighbour everything they know about it.



Why spaced review works

www.LearnThat.org, a LearnThat Foundation project

kidocs.org

100% retention

50% retention

no retention

1st review

2nd review

3rd review

4th review

5th review

Learning Curve: Every review slows the forgetting curve creating permanent memories

Forgetting curve: We forget unreviewed knowledge quickly

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Review 2 - Checking for understanding, misconceptions etc (How am I doing?)

Muddiest Point

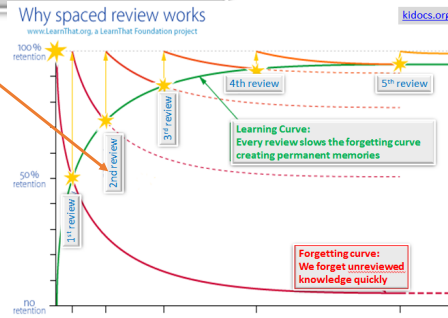
Learners write down one or two points on which they are least clear. This could be from the previous lesson, the rest of the unit, the preceding activity etc. The teacher and class can then seek to remedy the muddiness.

But before I get involved.....

C3B4Me

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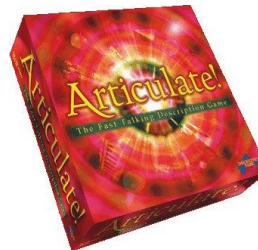
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Review 3 - checking my impact (How am I doing?)

Articulate then Answer

Give Learners the opportunity to articulate their thinking before answering -

- 30 seconds silent thinking before any answers
- Brainstorm in pairs first for 2-3 minutes
- Write some thoughts down before answering
- Discuss with your neighbour first



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Review 4 - Second "Know thy impact" mastery check (Lesson warm down)

3- 3 - 1

Summarise today's topic (*The importance of "memory lite pedagogy"*)
In 3 quick, short captions (sound bites).
Then.....
Reduce to 3 words.
Next.....
Take it down to 1 word.

[Back to Plenaries](#)

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Reflection and peer tutoring review

2 stars and a wish

[Back to AFL Tools](#)

For peer assessment, ask Learners to give two stars and a wish.

Two stars = 2 things that are good about the piece of work - **only against the lesson objective/outcome**

A wish = something they can improve to make it even better - **only against the lesson objective/outcome**

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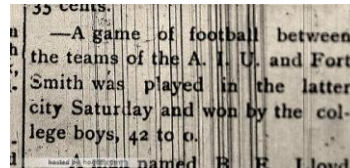
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Checking for "big picture" understanding

One-Sentence Summary [Back to AFL Tools](#)

Learners write a sentence summarising their knowledge of a topic.

The sentence could have to include who, what when, why, how, where etc.



The sentences could then be peer-assessed, re-drafted and so on.

These AfL slides are available - and much more - from the amazing Mike Gershon. www.mikegershon.com

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mikegershon@hotmail.com

Contributed by
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Specialist subjects
Citizenship, History,
Personal, Social and
Health Education,
Sociology



Statistics
This user has contributed 22 resources which
have been viewed 1,632,180 times.

Assessment For Learning Tools



AfL is successful when embedded in teaching and learning.

This toolkit aims to help by presenting different facets, activities and tools for teachers to use in order to achieve this.

I hope you find it useful!

Sources

<http://www.aiaa.org.uk/pdf/Publications/AAIA%20Pupils%20Learning%20from%20Teachers%20Responses.pdf>

<http://www.aiaa.org.uk/pdf/Publications/AAIAformat4.pdf>

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Paul Black et al, "Working inside the black box", (nferNelson, London, 2002)

Paul Black and Dylan William, Inside the Black Box, (nferNelson, London, 1998)

Assessment Reform Group, Testing, Motivation and Learning, (The Assessment Reform Group, Cambridge, 2002)

Assessment Reform Group, Assessment for Learning, (The Assessment Reform Group, Cambridge, 1999)

My head

Other people's heads

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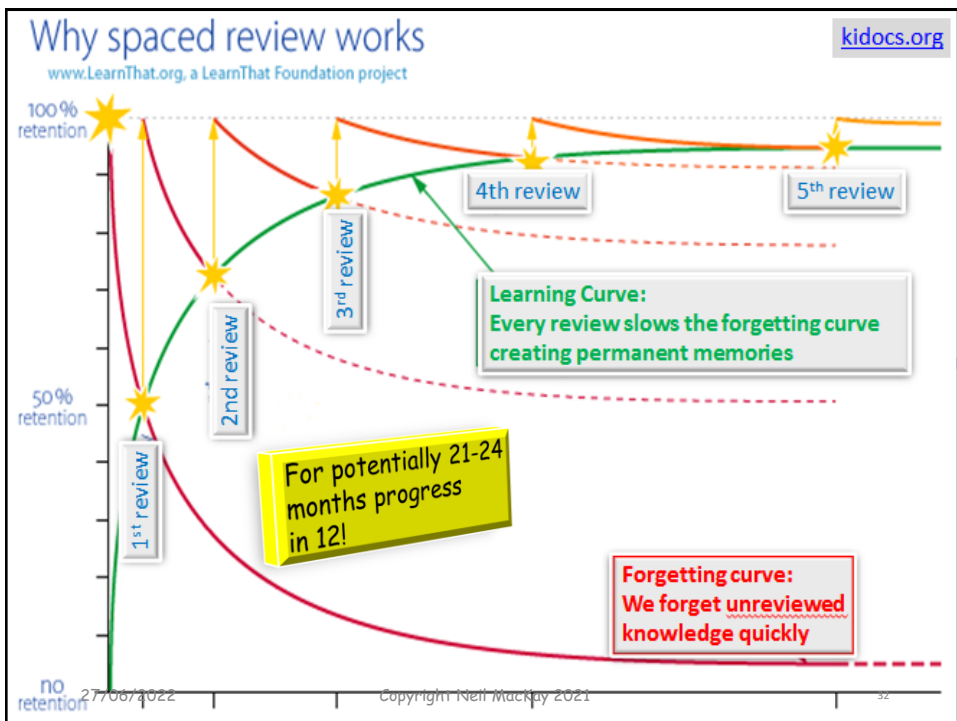
Educational Consultancy & Training by Mike Gershon

Mike Gershon provides educational consultancy and training along with a wide range of educational publications. Mike's online teaching resources are some of the most popular of all time, having been viewed and downloaded more than 4 million times by teachers in over 180 countries and territories.

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What else works or...



Or...

"If you aren't doing this...
Why not?"

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Worked Examples
Learners required to solve problems perform worse on subsequent test problems than learners who study the equivalent worked examples

Willingham 2009

Extended Practice
Practice, when deliberate and distributed rather than massed, improves automaticity, memory and transfer

Pyc and Rawson 2012, Wiliam 2010

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Frequent Quizzes

Quizzing, when low- or no-stakes, improves learning, memory and retention

Try "learner generated" quizzes and questions for maximum impact and recall/retention

"Think like an teacher"

What might....?
 What could....?
 What would happen if...?
 How could you...?
 How might you...?
 What might you do to...?

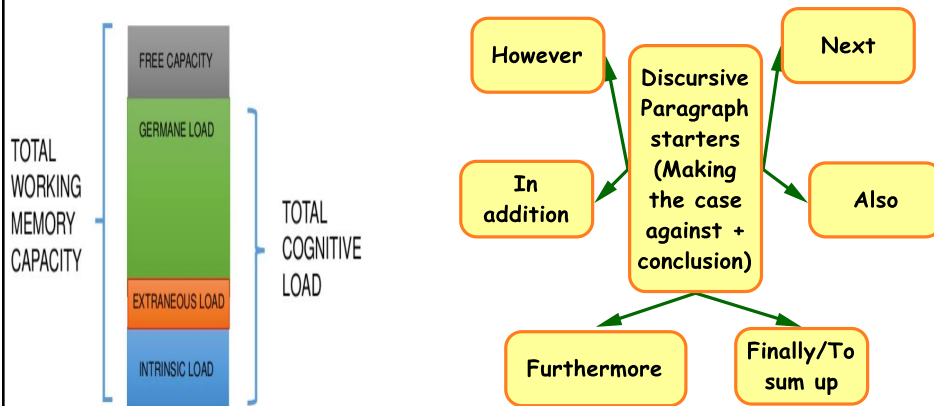
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Another "load reducing" solution

- Frameworks, scaffolds PEEL etc

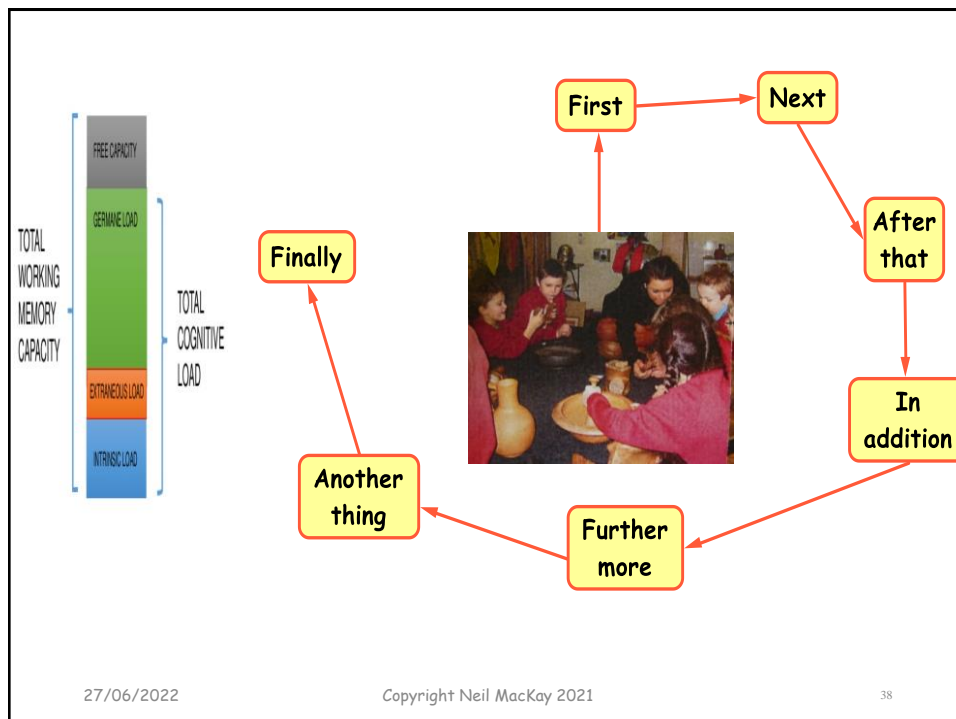


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PEEL Sentence Starters

Use these sentence starters to help you write your PEEL paragraphs.

P	E	E	L
Point	Evidence	Explanation	Link
I strongly believe...	For example...	This shows...	From this we can conclude...
Another point to consider is...	This is illustrated by...	This means...	It is clear that...
First of all...	This can be seen...	Therefore...	In conclusion...
It is quite obvious that...	Data shows...	Because of this...	We can therefore see...



POINT	EVIDENCE	EXPLANATION	LINK	THEORY
<ul style="list-style-type: none"> There are many elements of _____ in the transcript The child clearly understands It is clear that 	<ul style="list-style-type: none"> This is evident from This is apparent when I know this because 	<ul style="list-style-type: none"> This suggests that This utterance implies that _____ This example highlights I chose this utterance because 	<ul style="list-style-type: none"> Explain how this utterance helps you answer the question. 	<ul style="list-style-type: none"> Now pick one or two key theories and apply to your utterance. According to _____'s theory of _____ Remember to critique theory.

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Take Away

"Spaced review accelerates progress"

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