

QUALITY OF EDUCATION FOCUS

TWILIGHT 3 – MARCH 2025



**Explaining
and
modelling**

ALL



**HoD with
Emma**



**Technology
& Adaptive
Teaching**

ALL



**HoY with
Seven Kings**



**ECTs with
Danielle**



SCHOOL DEVELOPMENT PRIORITIES

A1

To ensure **consistent** high-quality, **adaptive practice** in every lesson via the **planned curriculum** with a focus on embedding **inclusive and ambitious questioning**, whole class and live **feedback** and enabling **literacy** development.

A2

To ensure **consistency** on using assessments to **re-teach misconceptions** or gaps and ensure pupils have the tools to revise.

A3

To ensure **consistent** practice for all pupils in every lesson, ensuring teaching is **adapted** to support all our learners in every lesson.

A4

To ensure all learners commit to exemplary work and **presentation** in their books/work.



ENTRY ROUTINES



- Arrive on time to lessons.
- Meet and Greet pupils at the door.
- Remove outdoor jackets and wear full school uniform, including blazers.
- Be Ready for Learning.
- Start the independent DO NOW task of Review, Retrieval or Reconnect.
- Classroom Condition Level 1.
- The DO NOW is time bound.



GETTING LESSONS STARTED

- You and your class need a shared understanding of expectations and routines.
- Link behaviour management with learning.
- Get stuck into learning within minutes.



Establish arrival and entry routines.



Address the class, take the register.



Do Now: Be Ready to Recall, Retrieve or Reconnect to prior learning. Time-bound.



Set the context for the lesson within a sequence.



Discuss specific learning goals.

ENTRY ROUTINES – CONSISTENCY IS KEY



*Success
Through
Consistency*

EXPLAINING AND MODELLING

The importance of effective explanations and modelling.

Cognitive Load Theory in Practice.

Eleni Christofides Examples



EXPLAINING AND MODELLING

Evidence informed teaching
Every lesson every day



1 Your Curriculum

Your curriculums have been sequenced and mapped.

The **Learning Journeys** provide you with the long-term plans (LTPs) and your **Medium Term Plans (MTPs)** set out the:

- Prior Learning
- Learning Objectives Knowledge/Skills
- Assessment
- Reading
- Vocabulary
- Homework
- Next Steps (Futures).

ENTRY

DO NOW

4 Getting lessons started

- Establish arrival and entry routines.
- Address the class, take the register.
- DO NOW: Be Ready to Review, Retrieve (from memory) or Reconnect to prior learning.



2 Plan to be adaptive and responsive

Aim to ensure your lessons are tailored to be inclusive, enabling all of your pupils (SEND, EAL and HPA) to be successful.

Consider adaptive teaching strategies, such as:

- **Clear Learning Objectives, Success Criteria (Goals). Same LO for all, but you might get there via a different route or at a different level**
- Translations for EAL pupils
- Scaffold mats
- Sentence starters
- WAGOLLs and Exemplars
- Examples vs. Non-examples
- Modelling
- **Alternative explanations**
- **Chunking - step-by-step**
- **Visualisers**
- **Visual support / Dual coding**
- **Mind mapping**
- **Planned questioning that is inclusive**
- **Telling pupil A you will ask**

3 Plan for literacy

Plan for Reading (WalkThru 1 page 60). Improving pupils' reading confidence is central to the curriculum as

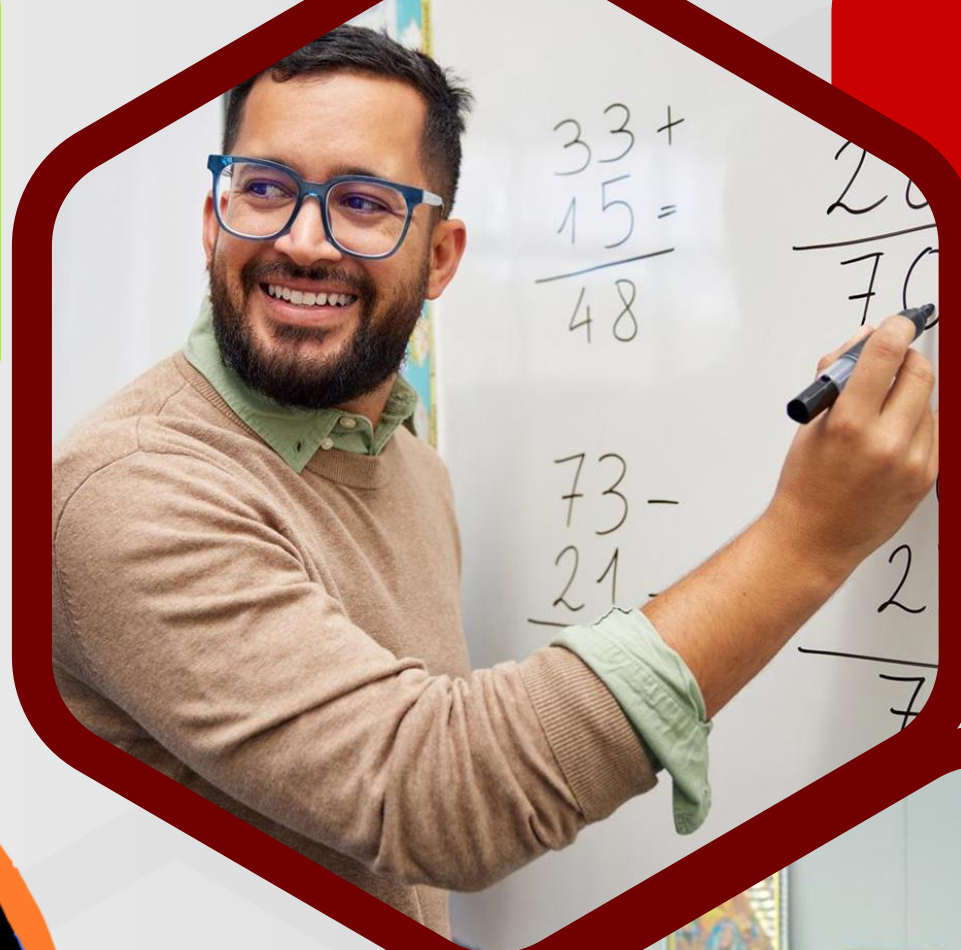
Reading is built into MTPs.

- Make reading relevant to your plan
- Identify key 3 vocabulary and writing
- Plan reading resources.
- Plan for strategy reading.



5 Explaining and modelling

A central feature of effective teaching is enabling pupils to develop their knowledge and understanding of concepts and processes and their ability to apply their learning to a range of situations. Select the appropriate Classroom Conditions and develop your explanations by:





What do we understand about the Working Memory?

What do we know about long term memory.

What do we know about LTM and learning new concepts/ideas.

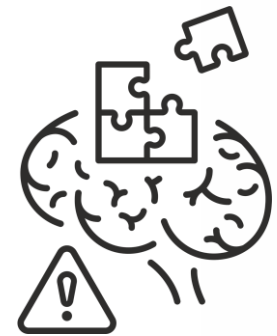
Discuss



COGNITIVE LOAD THEORY



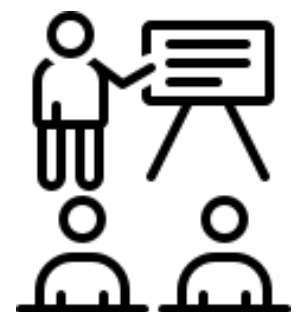
Cognitive load is referred to as the amount of information that our working memory capacity can hold at one time.



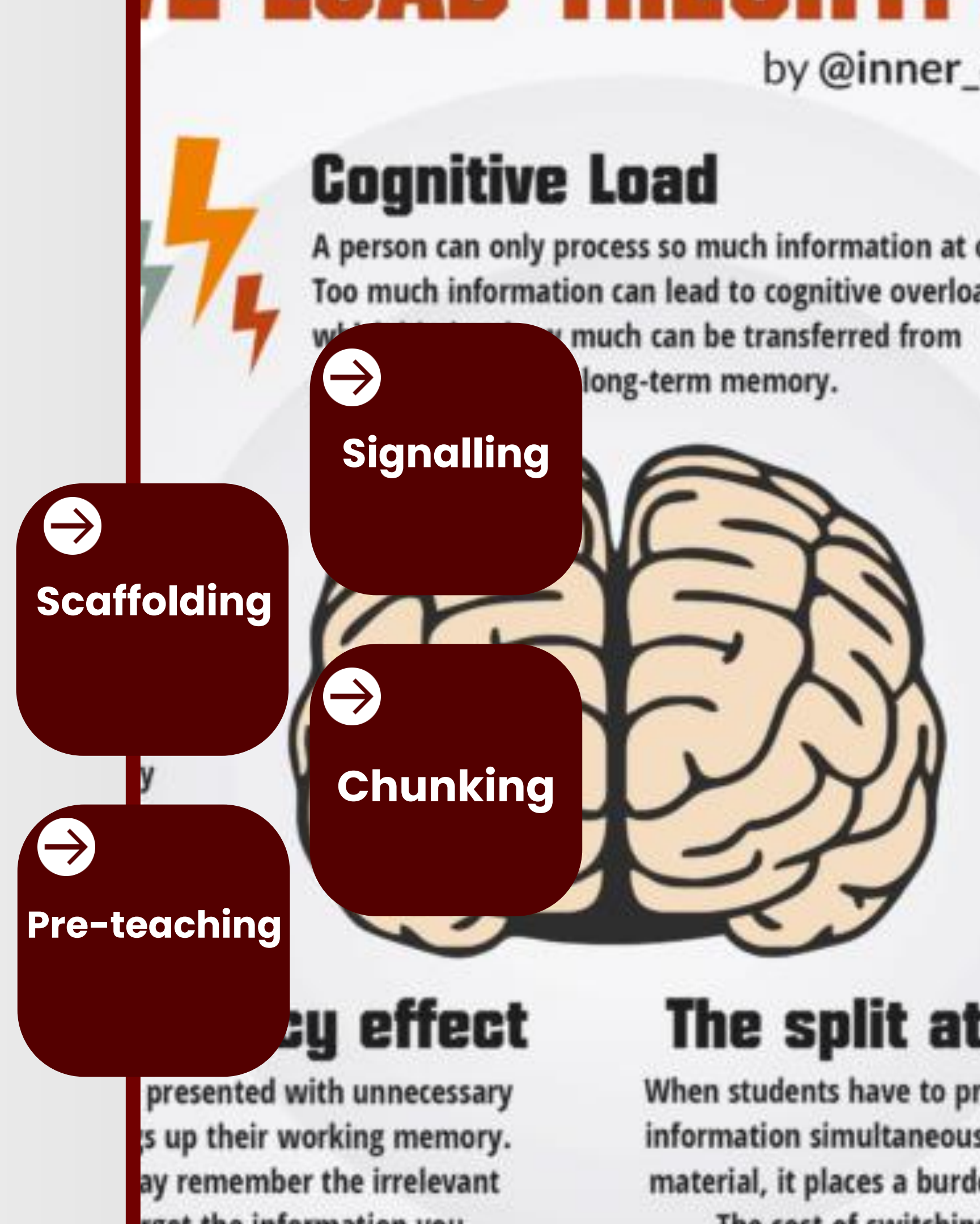
Working memory can only deal with a limited amount of information at one time. Temporarily holds and manipulates information.



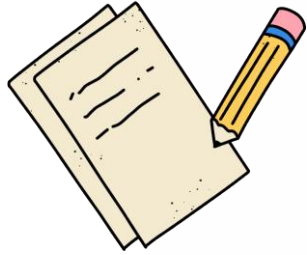
This working memory is easily overwhelmed when processing large amounts of new or complex information, leading to reduced comprehension and retention.



Nonetheless the Working Memory plays an important role in the learning process as it pays attention to the instructions shared as well as holding onto bits of the new ideas and concepts.



COGNITIVE LOAD THEORY



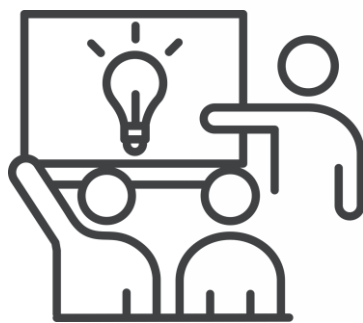
The cognitive load of learners indicates the amount of mental activity carried out by the working memory to perform a specific learning task.



Through the learning process pupils move their new learning from their working memory to the schema in their long term memory where knowledge builds on knowledge and they become more fluent.



The greater the amount of information taught at once, the greater are the chances that pupils will not retain it. Due to this, it is crucial to manage the mental workload of learners efficiently.



Therefore, we can design lessons, plan for instructions and explanations, that respect these limitations, enhance learning experiences and prevent cognitive overload.



Coherence



Signalling



Redundancy Principle



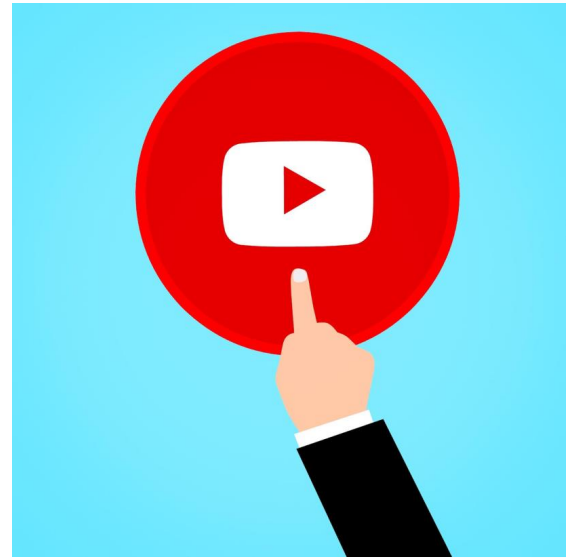
Clarity is Key



**What does this mean for a our everyday practice
How can we reduce the cognitive load?**

Discuss

Cognitive Load Theory Explained



Ethos3

Cognitive Load Theory Explained

An illustration of a brain with tangled black lines representing neural connections. Several speech bubbles in various colors (blue, orange, green, yellow) are scattered around the brain, suggesting thought processes or communication.

What strategies do you use to reduce the cognitive load in your lessons?

Share and discuss.



Adaptive and Responsive teaching

Adjusting teaching strategies to match learners' proficiency levels.

Clear instructions, explanations Clarity is Key

Simple and well thought out in order to not increase the extraneous load.

Simplifying the design of an educational activity and try to avoid making it unnecessarily complex.

Allow pupils to focus on what you want them to learn rather than complicated instructions.

Be concise and coherent.
Focus on the essential facts.

Chunking

Chunking is breaking down large amounts of information into small chunks.

Chunks help us understand concepts better and retain information longer.

They also allow us to focus on just one concept at a time instead of having to juggle multiple ideas.

Declutter your presentation

Clear visual aids such as diagrams or charts.

Accessible fonts and colours.

Reduce unnecessary visual distractions.

Dual Coding to support visual and auditory.



What strategies do you use to reduce the cognitive load in your lessons?

Share and discuss.

Level 1 Classroom Condition

Don't speak when pupils
are on task.

ssshhhhhhhh.

Silence is Golden.

Link to prior learning

Make explicit links with
prior learning to help
students integrate the
new information into their
long-term memories

Scaffolding

Detailed scaffolding examples:

- Word lists
- Diagrams
- Dual coding
- Sentence starters

Whole task scaffold examples:

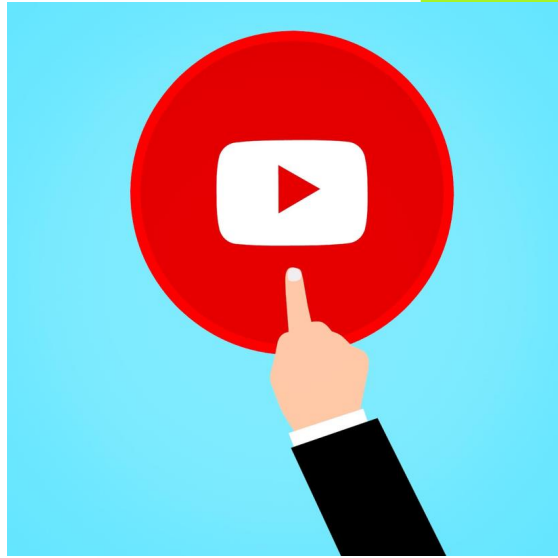
- Essay structure strips
- Partially completed
examples
- Exemplars

**Remember to remove the
scaffold!**

Flipped Learning or Pre-teaching

If pupils arrive to lesson
with some knowledge
this will reduce the
intrinsic load - *the level
of difficulty contained
within the information or
task.*

What are the 5 Principles of Reducing Cognitive Load



Reduce extraneous cognitive load



Eliminate irrelevant information



Highlight **key information** by attaching graphics



Place graphics **near text**

 InteDashboard™

Manage intrinsic cognitive load



Present information in small segments



Introduce key terms and principles beforehand

 InteDashboard™



What strategies do you use to reduce the cognitive load in your lessons?

Share and discuss.

Scaffolding Support

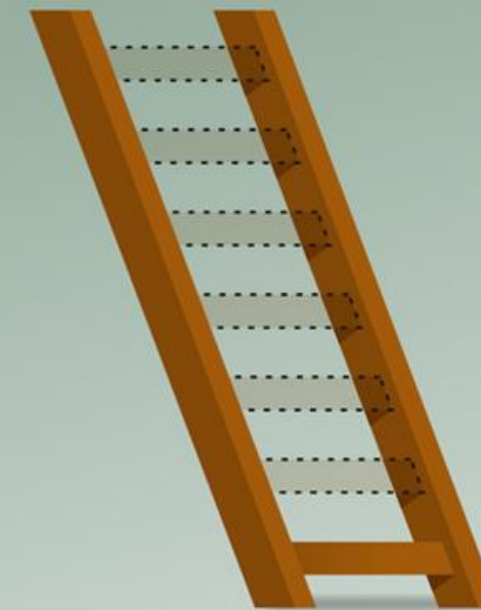
NOVICE



Worked Examples

This is a problem that has already been solved for the student, with every step fully explained. This is helpful for novice learners. By showing them the strategy, they can devote all of their working memory to applying the information to the problem at hand.

EXPERT



Independent Problem Solving

This is a task where students are simply given a question and they have to choose the correct strategy and solve the problem themselves. This is appropriate for students with a large knowledge base and high levels of confidence in that domain.

Completion Tasks

This is similar to a worked example, but instead of showing all the steps, only a partial solution is given. The students then have to complete the rest themselves. This is more appropriate if the students have more knowledge about the topic, as they can make the appropriate links themselves.



E&M | 68
WORKED EXAMPLE & BACKWARD FADING
 Example 2
 Actions
 Actions
 Actions
 TEACHING WALKTHRUS

E&M | 72
DELIBERATE VOCAB DEVELOPMENT
 TEACHING WALKTHRUS

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SCAFFOLDING
 TEACHING WALKTHRUS

E&M | 84
SET THE STANDARDS
 TEACHING WALKTHRUS

E&M | 70
DUAL CODING
 TEACHING WALKTHRUS

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COMPARE, CONTRAST & CATEGORISE
 COMPARE, CONTRAST & CATEGORISE TO BUILD SKILLS
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 TEACHING WALKTHRUS

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GIVING AN EXPLANATION
 TEACHING WALKTHRUS

E&M | 86
SEQUENCES, CAUSES & CONSEQUENCES
 TEACHING WALKTHRUS

E&M | 90
CHUNKING
 TEACHING WALKTHRUS

E&M | 100
MODELLING HANDOVER: I DO, WE DO, YOU DO
 TEACHING WALKTHRUS

E&M | 84
EXAMPLES & NON-EXAMPLES
 EXAMPLES NON-EXAMPLES
 TEACHING WALKTHRUS

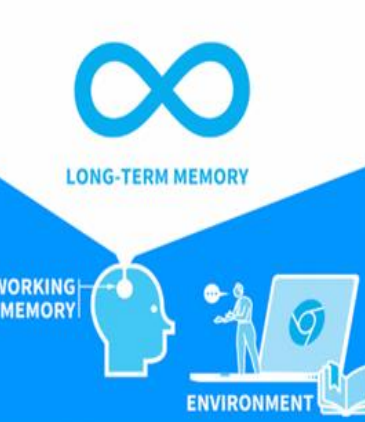
E&M | 88
PREDICT & VERIFY
 I baked → I look → I looked → I swim → I swam → I swam → I swam
 TEACHING WALKTHRUS

E&M | 94
THE CREATIVE WRITING PROCESS
 STRUCTURE
 CLARITY
 EFFECTIVENESS
 TEACHING WALKTHRUS

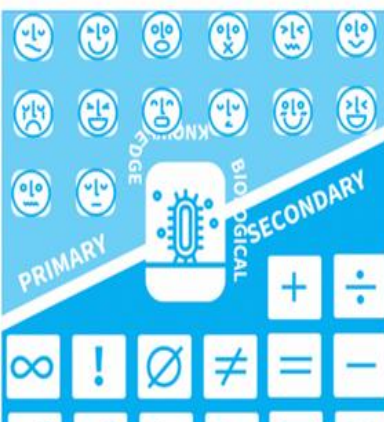


THE A|B|C|D|E OF COGNITIVE LOAD THEORY

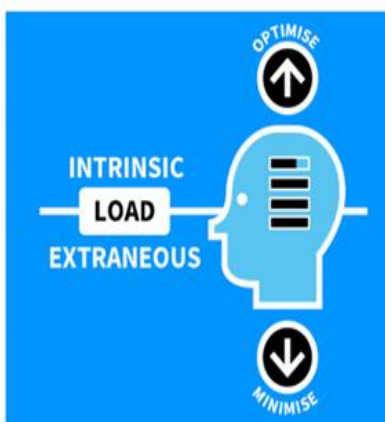
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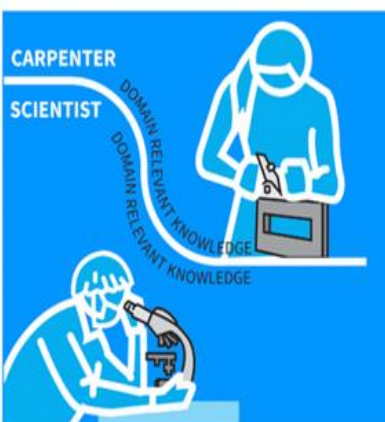
ARCHITECTURE OF HUMAN MEMORY



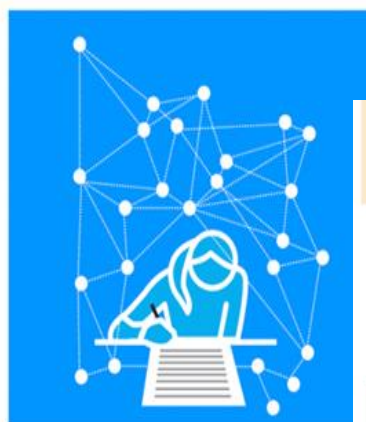
BIOLOGICALLY PRIMARY AND SECONDARY KNOWLEDGE



CATEGORISE COGNITIVE LOAD AS INTRINSIC OR EXTRANEIOUS



DOMAIN-GENERAL vs DOMAIN-SPECIFIC SKILLS



ELEMENT INTERACTIVITY

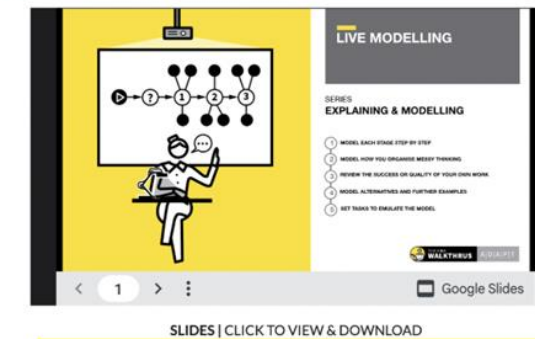
WalkThrus Online Platform

Username: walkthrus@wansteadhigh.co.uk
Password: teacherdevelopment@whs

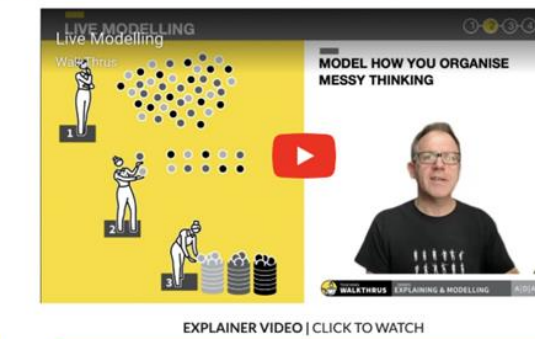
1. Login to the **Members Area:** <https://www.walkthrus.co.uk/members-area>
2. **Members Area** (from the top right)
3. Scroll down to the Resource Hub
4. Select: Explaining and Modelling (or whatever the WalkThru is that you're Coaching on)
5. Select: Yellow Hexagon on Live Modelling
6. **Take 10 minutes to view the content and discuss the opportunities.**



- Cognitive Load Theory is a collection of instructional recommendations based on an understanding of how humans perceive, think, and learn.
- Originating from the work of John Sweller, each instructional recommendation has been validated through rigorous randomised controlled trials.
- CLT research is relentlessly practical. Sweller says 'the ultimate aim of CLT is to provide instructional effects leading to instructional recommendations'.



1. Slides – identical to the book page.



2. Explanation of the importance.



3. A Coaching Video - Example



by @lmer_dive | www.lmer.com

Cognitive Load

A person can only process so much information at once. The more information we need to acquire, the more working memory is required. If the amount of information exceeds the capacity of working memory, it will be forgotten.

Working Memory

This is where most of our processing occurs. It has a limited capacity. If information is not processed in long-term memory, it will be forgotten.

Long-Term Memory

This is where we store information for long-term use. It has a large capacity, but it is not immediately accessible. Information must be processed in working memory to be stored in long-term memory.

The redundancy effect

When students are presented with unnecessary information, it distracts them from the task. This means they may not be able to process the information they need to learn.

The split attention effect

When students have to process two or more sources of information at the same time, it is more difficult for them to learn. The cost of split attention is that the student's attention is divided between the two sources of information.

Scaffolding Support

NOVICE → EXPERT

Worked Examples

This is a problem that has already been solved for the student. It is provided for them to see how the problem is solved. This is helpful for students to see how the problem is solved.

Completion Tasks

This is a problem that has already been solved for the student, but they are asked to complete the task themselves. This is helpful for students to see how the problem is solved and to practice the skills they need to learn.

Independent Problem Solving

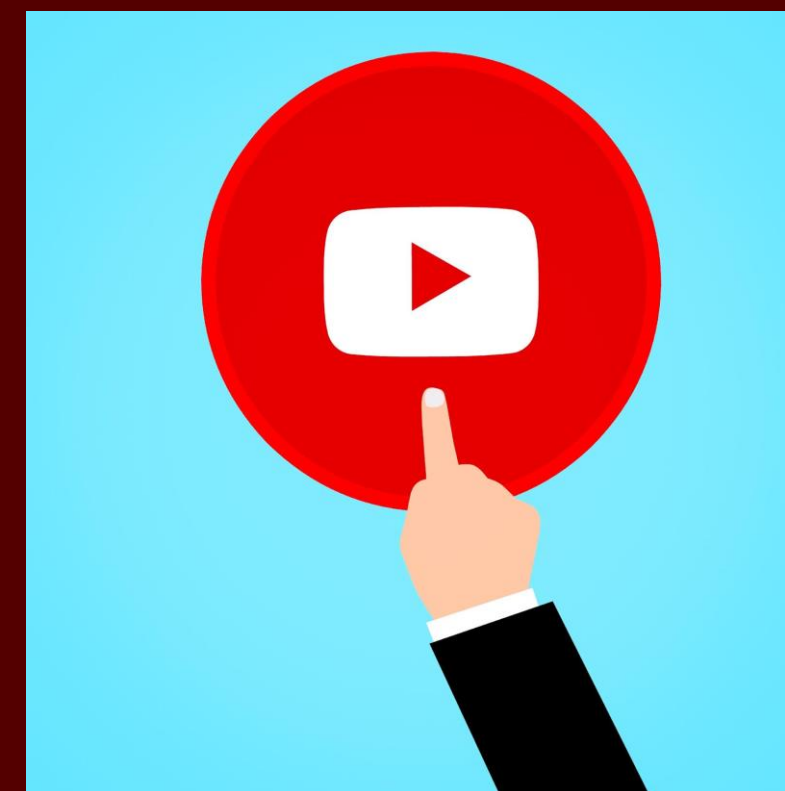
This is a problem that has not been solved for the student. They are asked to solve the problem themselves. This is a good way to assess their understanding of the problem.

Cognitive Load Theory

Six Strategies to Tailor Instruction for Maximum Learning

- 1. Activate What Students Already Know**
Tailoring lessons to students' existing knowledge and skills is crucial for optimal learning. This method of instruction encourages students to construct new knowledge based on their previous experiences, leading to more meaningful and lasting learning. By adjusting the complexity of tasks based on students' knowledge and abilities, you can minimise cognitive load. Strategies that help students to activate prior knowledge (PK) and relate new information (NI) to what they already know are analogies, real-world examples, and comparing and contrasting with familiar ideas.
- 2. Guide Students Step By Step With New Skills**
A 'worked example' is a problem that has already been solved for the student, with every step fully explained and clearly shown. Research consistently demonstrates that students who are given lots of worked examples learn new content more effectively than students who are required to solve the same problem themselves. Unguided problem-solving can overload the WM and therefore impact the transfer of knowledge to the LTM. Worked examples are most effective when combined with the teacher thinking aloud because it enables them to externalise their thinking process when working through a problem.
- 3. Cut out unnecessary or repeated information**
To enhance learning and reduce any unnecessary cognitive load on students' working memory, it's crucial to eliminate non-essential information. This means keeping learning materials as simple as possible and not repeating the same points in different ways. In multimedia presentations (such as PowerPoint), consider breaking down new information across slides, verbalising text instead of displaying it, and omitting non-pertinent images. Be mindful that what is critical for beginners may become superfluous for more advanced learners, and adapt content to match their growing expertise.
- 4. Present All Essential Information Together**
Cognitive overload can occur when students have to split their attention between two or more sources of information that have been presented separately, but can only be understood in reference to each other (for example a scientific diagram). Evidence suggests that this separation has negative consequences and should be eliminated wherever possible. With this in mind, teachers should design learning materials that integrate labels, incorporate written instructions next to tasks and utilise visual cues to stress key information on worksheets and other learning resources.

FURTHER READING



➔ **Cognitive Load Theory 3 - intrinsic, extraneous, germane.**

➔ **Cognitive Load Theory, How Do I Apply It?**

➔ **Cognitive Load Theory: A Teacher's Guide**

Video Clips

EXPLAINING AND MODELLING

✓
The importance of effective explanations and modelling.

✓
Cognitive Load Theory in Practice.

✓
Eleni Christofides

Examples

