

# RAINFORD CHURCH OF ENGLAND PRIMARY SCHOOL



## Teaching and Learning Policy

*'Learning and growing together to achieve our best in  
the love of God'*

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Signed..... Chair of governors

Signed..... Headteacher

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## Introduction to our Pedagogical Principles

At Rainford CE Primary School, we ensure that all pupils are able to “know more and be able to do more” (Ofsted, 2019), so that they all flourish throughout their time here, reaching their full potential and leave us fully prepared for their next stage of education. This policy, in conjunction with the [LDST Teaching and Learning toolkit](#), ensures that high-quality teaching and learning always takes place, in all classrooms, and is rooted in evidence-informed strategies. Using this evidence informed approach, we are able to ensure that our pre-determined knowledge is retained over time for all learners.

Before effective teaching and learning can taken place, it was essential for us to design a coherent, cyclical curriculum, which sequentially builds the new knowledge and skills that we want children to gain. Therefore, we must ensure that our teaching and learning meets our wider curriculum aims. Our curriculum aims to:

### G: Develop our children's spiritual and moral development

To foster our children's **spiritual and moral development** so that they can understand the meaning and significance of faith, experience **God's love** and develop the spirituality to enable them to live out our **Christian values** of love, joy, peace, friendship, forgiveness, perseverance and justice and learn to respect and care for God's creation.

### R: Develop our children's learning behaviours

To equip our children with the learning behaviours that will enable them to become **independent** and **resilient** learners who have the confidence to embrace new challenges and overcome them.

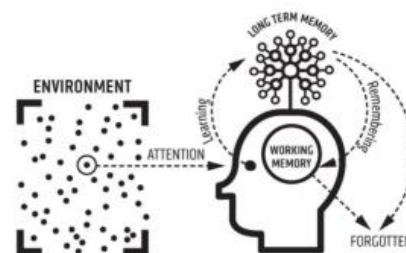
### O: Develop our children's learning

To develop the appropriate subject specific knowledge, skills and understanding as set out in the National Curriculum and beyond, so that children can flourish, reach and exceed their potential academically, physically and artistically through **outstanding teaching and learning**.

### W: Develop our children into positive and healthy world citizens

To develop our children's ability to value themselves as a unique individual with special qualities and strengths developing self-discipline and honesty; taking responsibility for their own actions and appreciating their ability to make a **positive difference in the world**; to develop our children's ability to appreciate, respect and work cooperatively with others, recognising similarities and celebrating differences.

In order to deliver our curriculum aims and ensure children achieve our pre-determined end points, all staff have a solid understanding of cognitive science around working memory (Cavigoli, 2020). Staff understand the importance of secure attention within a focused learning environment (see our Behaviour Policy for further details on how this has influenced our behaviour routines, particularly our 'Relentless Routines'). With attention secure, staff can then ensure that teaching strategies are carefully chosen to make sure that knowledge is rehearsed, regularly retrieved and linked to prior learning to ensure that children built schemata. Pupils learn new ideas by linking those ideas to existing knowledge, organising this knowledge into increasingly complex mental models (or “schemata”); carefully sequencing teaching to facilitate this process is important. Our teaching and learning policy, therefore, reflects the need to ensure that knowledge is embedded in the long-term memory



(Cavigoli, 2020)

At the heart of our Rainford CE pedagogy are Rosenshine's Principles of Instruction (2010) which link cognitive science with real-life classroom practice. His ten key principles offer a systematic approach to learning through optimising effective instruction i.e. purposefully directing the learning process. As a school, these principles underpin all of our chosen pedagogical practices.

**01 DAILY REVIEW**  
 MD TU WE TH FR  
 Daily review is an important component of instruction. It helps strengthen the connections of the material learned. Automatic recall frees working memory for problem solving and creativity.

**02 NEW MATERIAL IN SMALL STEPS**  
 Our working memory is small, only handling a few bits of information at once. Avoid its overload — present new material in small steps and proceed only when first steps are mastered.

**03 ASK QUESTIONS**  
 The most successful teachers spend more than half the class time lecturing, demonstrating and asking questions. Questions allow the teacher to determine how well the material is learned.

**04 PROVIDE MODELS**  
 Students need cognitive support to help them learn how to solve problems. Modelling, worked examples and teacher thinking out loud help clarify the specific steps involved.

**05 GUIDE STUDENT PRACTICE**  
 Students need additional time to rephrase, elaborate and summarise new material in order to store it in their long-term memory. More successful teachers built in more time for this.

**06 CHECK STUDENT UNDERSTANDING**  
 Less successful teachers merely ask "Are there any questions?" No questions are taken to mean no problems. False. By contrast, more successful teachers check on all students.

**07 OBTAIN HIGH SUCCESS RATE**  
 A success rate of around 80% has been found to be optimal, showing students are learning and also being challenged. Better teachers taught in small steps, followed by practice.

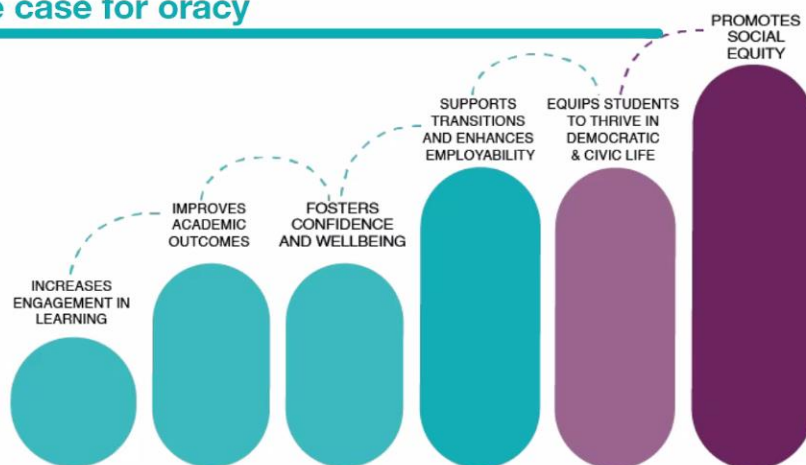
**08 SCAFFOLDS FOR DIFFICULT TASKS**  
 Scaffolds are temporary supports to assist learning. They can include modelling, teacher thinking aloud, cue cards and checklists. Scaffolds are part of cognitive apprenticeship.

**09 INDEPENDENT PRACTICE**  
 Independent practice produces 'overlearning' — a necessary process for new material to be recalled automatically. This ensures no overloading of students' working memory.

**10 WEEKLY & MONTHLY REVIEW**  
 The effort involved in recalling recently-learned material embeds it in long-term memory. And the more this happens, the easier it is to connect new material to such prior knowledge.

(Rosenhine, 2010)

## The case for oracy



Another of our key pedagogical principles is the power of Oracy. Recognising our local context and the disadvantaged gap in vocabulary, we recognise the empowerment and social mobility linked to effective speaking and listening.

Combining the two evidence-based theories of Rosenshine and Oracy, we have chosen to adopt the following core Pedagogical Principles at Rainford CE. These make up some of the chapters within Sherrington and Caviglioli's Teaching WalkThrus book (2020) which itself is based on Rosenshine's Principles. The links to Rosenshine are outlined below.

Rainford CE Pedagogical Principles

<p><b>1. Explaining and Modelling</b> 'New Material in Small Steps' 'Provide Models' 'Scaffolds for Difficult Tasks'</p>	}	Rosenshine's Principles
<p><b>2. Questioning and Feedback</b> 'Ask Questions' 'Check Pupils' Understanding'</p>	}	Rosenshine's Principles
<p><b>3. Practice and Retrieval</b> 'Daily Review' 'Weekly and Monthly Review' 'Guide Student Practise' 'Independent Practise' 'Obtain High Success Rate'</p>	}	Rosenshine's Principles
<p><b>4. Mode B Teaching</b> <i>*Does not directly link to a Rosenshine Principle. but incorporates the broad collection of activities where students are given choices, engage in a more extended oral contribution and work collaboratively.</i></p>		

## Delivering our Pedagogical Principles

To deliver our pedagogical principles, we have 5 key strategies which are regularly reviewed to reflect the needs of our school communities and wider updates to research.

### Strategy 1: Teaching WalkThrus



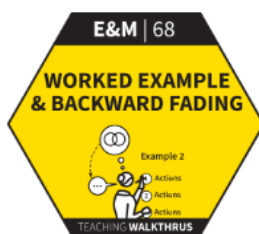
The core resource for our teaching staff is Teaching WalkThrus (Sherrington and Caviglioli, 2020). This book compiles clear five-steps guides to individual WalkThru tactics, which are evidence-based and clearly explained as a visual model with unambiguous text descriptions and line drawings. Every member of staff has a copy of the WalkThru book as well as access to our interactive LDST teaching and learning toolkit with videos of the strategies happening in real classroom scenarios within our academy trust.

WalkThrus, therefore, provide the core strategies for all classroom practitioners. Each WalkThru is not seen as a rigid, generic checklist, but instead we collaboratively explore key strategies across school which we can then attempt, develop, adapt, practise and test so that they are successfully utilised within our classroom settings.

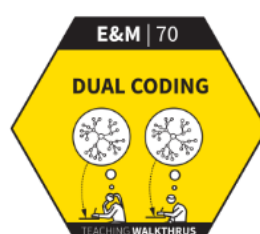
Below are some of the WalkThru strategies that drive the teaching and learning around our four core Pedagogical Principles. (Click on the subheading for a link to explanatory videos). During our WalkThrus journey, we are carefully planning CPD to ensure that we are working through strategies strategically. The aim is that, over time, staff will become confident in using all strategies

#### 1. Explaining and Modelling

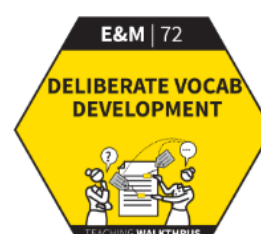
“A central feature of effective teaching is the process of enabling students to develop their knowledge and understanding of concepts and processes and the ability to apply their learning to a range of situations. Explaining and modelling are vital elements of any teacher’s repertoire of technique.”



Stepped modelling and practice with worked examples



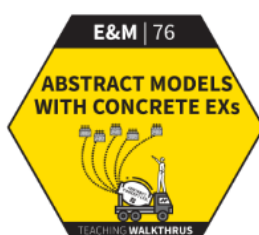
Using images to support conceptual understanding



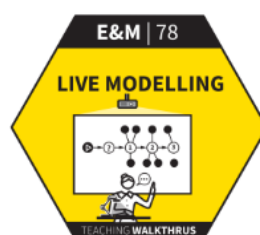
Routines for securing fluency and confidence with words



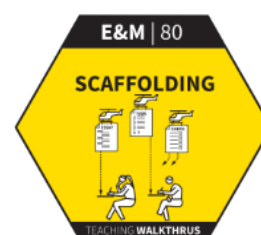
Relating detailed knowledge to a wider framework



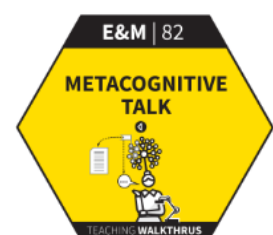
Making the concrete-abstract connection explicit



Showing how to complete tasks and solve problems



Providing temporary supports for learning



Making thought processes explicit

## 2. Questioning and Feedback

"All teachers ask questions and give feedback. However, there can be a significant range in the extent to which these practices have an impact on securing deeper learning with all students in a class. It is important for teachers to develop the capacity to be responsive, adjusting the explanatory inputs and tasks according to how well students are doing in making sense of the material."



Selecting students to answer; involving everyone in thinking



A routine for structured discussion



An effective all-student response technique



A key question: What have you understood?



Generating improved verbal responses



Questioning as a set of probing exchanges



How do we know what we know?



Elements of effective formative feedback



Five ways to make feedback productive



Giving feedback to a whole class at once

### 3. Practice and Retrieval

“Students can improve their confidence and fluency with a wide range of knowledge and physical skills through engaging in practice, starting with closely supervised guided practice before moving on to practise more independently. An aspect of this is the role retrieval practice plays in securing students’ fluency in storing and retrieving information from their long-term memory, tackling the ever-present problem that forgetting is all too easy.”



Steps for running effective quizzing routines



Exploring schema with Why and How questions



Resources to support students’ knowledge checking



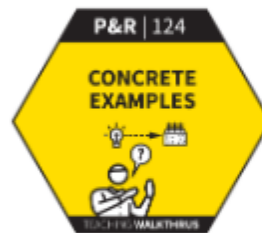
The power of rehearsal in practising for performance



Using students as resources for each other



Routine knowledge checking to reduce forgetting



Linking concrete examples to abstract ideas



Securing early success with supervised practice



Letting students go to practise on their own



Building from drills into more complex tasks

#### 4. Mode B Teaching

"Mode A and Mode B teaching reflects the reality that many teachers typically balance different modes of teaching of time to add depth and variety of practice opportunities... Mode B teaching is a broad collection of activities where, typically, students are given choices, engage in a more extended oral contributions and work collaboratively. This is very far from being an exhaustive set of ideas; it actually is just a very small sample of all the possibilities."

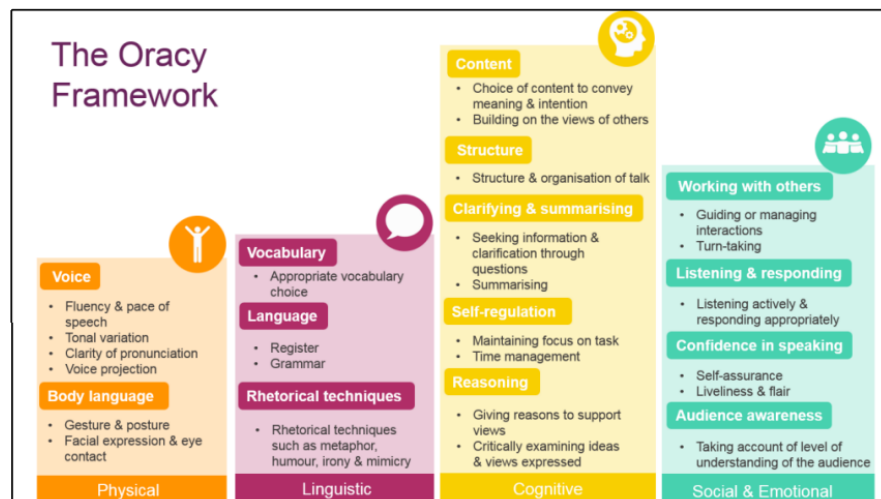
 <p><b>MB   134</b> <b>COLLABORATIVE LEARNING</b></p> <p>The key elements in designing effective group work</p>	 <p><b>MB   136</b> <b>HOMEWORK AS GUIDED STUDY</b></p> <p>Structured tasks for independent home learning</p>	 <p><b>MB   138</b> <b>ENQUIRY PROJECTS</b></p> <p>Designing effective projects with enquiry questions</p>	 <p><b>MB   140</b> <b>OPEN RESPONSE TASKS</b></p> <p>Showcasing knowledge in any format</p>
 <p><b>MB   142</b> <b>ORACY: DEBATING</b></p> <p>Steps to setting up in-class debates</p>	 <p><b>MB   144</b> <b>ORACY: TALK FOR WRITING</b></p> <p>Oral rehearsal as a precursor for writing</p>	 <p><b>MB   146</b> <b>ORACY: INSTRUCTIONAL INPUTS</b></p> <p>Involving students in teaching parts of lessons</p>	 <p><b>MB   148</b> <b>INDEPENDENT LEARNING: PRE-READING</b></p> <p>Flipping learning by reading in advance</p>

#### Strategy 2: Oracy

Below are some of the Oracy strategies that drive the teaching and learning around our four core Pedagogical Principles, particularly **Mode B Teaching**.

#### Oracy Framework

The Oracy Framework underpins our approach to speaking and listening. Targets are set in each class to ensure that all talk is deliberate, explicit and systematic.



## Discussion Guidelines and Listening Ladder

The discussion guidelines and listening ladder provide a set of guidance to ensure effective environment for talk.

Summarising the speaker's ideas	
Asking questions that dig deeper	
Asking questions to clarify understanding	
Reacting and refocusing	
Offering nods or short words of encouragement	
Giving eye contact to the speaker	
Being calm and still	
Giving 100% of their focus to the person speaking	

**Talk Tactics** encourage students to think strategically about their contributions to group talk.

- Instigate:** Present an idea or open up a new line of enquiry. Start by saying: "I would like to start by saying...", "I think...", "We haven't yet talked about..."
- Probe:** Dig deeper, ask for evidence or justification of ideas. Start by saying: "Why do you think...?", "What evidence do you have to support X idea?", "Could you provide an example?"
- Challenge:** Disagree or present an alternative argument. Start by saying: "I disagree because...", "To challenge you, I think...", "I understand your point of view, but how do you think about...?"
- Clarify:** Ask questions to make things clearer and check your understanding. Start by saying: "Do you mean...?", "Does that mean...?", "Can you clarify what you mean by?"
- Summarise:** Identify and recap the main ideas. Start by saying: "So far we have talked about...", "The main points raised today were...", "Our discussion focused on..."
- Build:** Develop, add to or elaborate on an idea. Start by saying: "I agree and would like to add...", "X's idea made me think...", "X's idea made me think..."

## Talk Tactics

To harness high quality talk across school, talk tactics provide key sentence stems. These support pupils of all ages and abilities to access discussions. These also provide different roles which can be assigned to progressively develop the contributions.

## Groupings

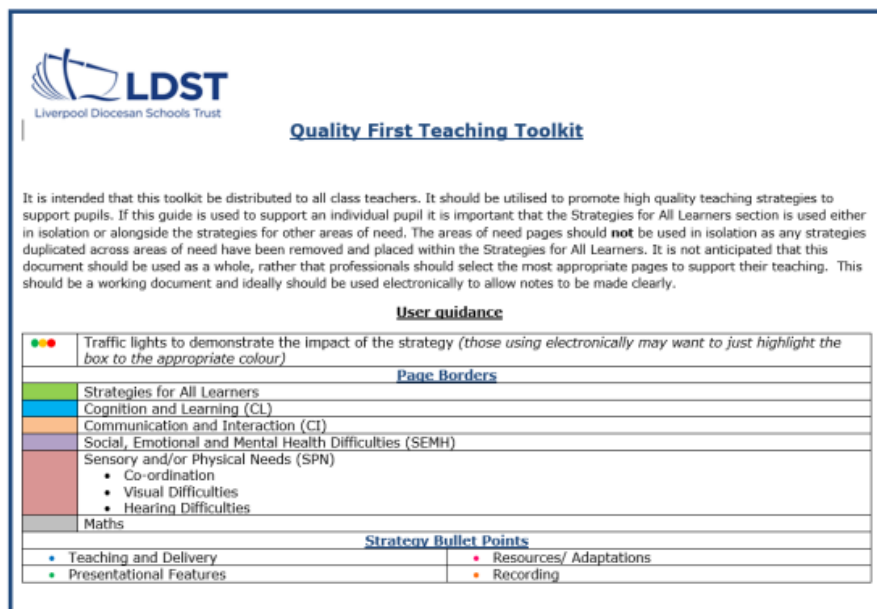
As well as taking on different roles within discussions, another tactic for developing talk is through children accessing talk in different groupings. Different groupings support talk for different purposes so that our deliberate changing of groupings means that children learn to carefully navigate the expectations of talk in simple and complex situations.

**Groupings**

- Trios:** 3 people stand in a triangle. While two talk, the third asks questions or adds or offers in and summarizes or compares the discussion.
- Pair:** Talk to a partner.
- Nest:** Stand apart from each other and within your circle to present.
- Traverse:** Stand in two parallel lines opposite a partner. Change partners to meeting one person down to the other end of the line.
- Fishbowl:** The people in the inner circle face each other while the people on the outer circle observe the inner circle's discussion.
- Circle:** Groups of six or more people face each other in a circle. You can also make the circle, one at a time, to speak to the whole group.

### Strategy 3: Quality First Teaching Toolkit

To promote high quality teaching strategies for all pupils as well as SEND pupils with more specific areas of need, the LDST QFT Toolkit is used by teachers. The strategies outlined here ensure that barriers to learning are overcome for all learners.



### Strategy 4: Education Endowment Foundation- Teaching and Learning Toolkit

The EEF's Teaching and Learning Toolkit is regularly reviewed by Senior Leaders and our own toolkit is updated as and when appropriate. Given that the EEF's toolkit is based on first-hand experience, it provides evidence-informed decisions about what may or may not be successful before we choose to adopt a new strategy.

<https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit>

### Strategy 5: Standardised Lesson Format

Rainford CE Lesson Form

**R**etrieve  
**O**ptimise vocabulary and knowledge  
**O**pportunity to read  
**T**ime to practise  
**S**top and Check

A bespoke standardised lesson format for Rainford CE, linked to GROW curriculum, has been created to help all staff consistently deliver our core Pedagogical Principles. To help reduce cognitive load for pupils due to consistency in format, our standardised lesson also allows staff to best utilise time to maximise teaching and learning.

## Retrieve

Pupils retrieve prior learning from last lesson, last term and last year. A variety of verbal, written, independent and collaborative retrieval activities are used across a unit of work, taken from our retrieval toolkit.

## Optimise vocabulary and knowledge

Children are introduced to new vocabulary for that lesson, with a focus on Tier 2 vocabulary which can be applied across contexts.

New learning is introduced in small steps, with teachers providing modelling and metacognitive talk to make thought processes explicit. Scaffolding is used as temporary supports for learning where appropriate.

## Opportunity to read

Children have access to high-quality texts in every lesson. These are predominately from our Rainford CE Reading Spine.

## Time to practise

Teachers guide students initial practise making sure that pupils are building confidence and not making too many errors- close supervision and high-quality immediate feedback are essential at this stage. Once an optimum success rate of roughly 80% is achieved, independent monitored practice occurs. Extensive, successful independent practice is necessary for skills and knowledge to become automatic.

## Stop and Check

Teachers regularly ask questions to check for student understanding, both throughout the lesson and at the end of the lesson. Different types of questioning are essential e.g. cold calling, show me boards, process question, probing questions, say-it again better questions etc.

## Glossary (Evidence- informed Teaching & Learning Glossary, Kate Jones)

**Asynchronous Instruction** - Asynchronous teaching and learning refers to all students learning, but not at the same place or same time. For example class work set on the Google Classroom for students to complete and they will do so at different times and from different locations.

**Automacy** - This is when we do something so often that it becomes automatic, also known as 'auto-pilot'. There are many scenarios, both inside and outside of the classroom, where this can happen and it will therefore reduce the cognitive load on working memory.

**Blocking** - This is when subject content or taught material is revised in specific blocks, one after the other. The opposite of blocking is interleaving (see below) and isn't as effective.

**Brain dump** - This is a low effort, high impact teaching and learning strategy. Students simply have to write down from memory what they can recall about a specific topic/unit as instructed by the teacher.

**Blended learning** - This also known as hybrid learning, which can contain elements of live teaching from the classroom and online learning. In my current school all lessons are delivered in the physical classroom with some students attending the lesson and others attending via Zoom remotely.

**Chunking** - Grouping information into more manageable sections, categories or chunks to support the limitations of working memory.

**Cognitive Biases** - When people search or interpret research, evidence and/or information that supports their pre-existing beliefs.

**Cognitive Load** - If we present our students with too much new information, all at once, this will lead to information overload in working memory. It is important for teachers to be aware of this when planning and delivering lessons.

**Cognitive Load Theory** - Professor John Sweller has written extensively about cognitive load and this refers to his work described by Dylan Wiliam (2017) as 'the single most important thing for teachers to know'.

**Cognitive Science** - The scientific study of the human mind.

**Cognitive Psychology** - The study of specific mental processes such as attention, encoding, memory, perception, problem solving, and thinking.

**Concrete examples** - Using specific examples to help understand abstract ideas and concepts.

**Confirmation Bias** - When people search for research, evidence and information to support their own beliefs and ideas or interpret information to suit and match their beliefs.

Control group - When conducting research, some studies like to compare an intervention group (where something has been changed or added) to a control group (where everything stays the same). This allows us to compare the differences.

Cramming - This refers to intense and last minute studying, for example revising for a test the night before. Also, known as massed practice.

Curse of knowledge - This is an example of a cognitive bias, where someone assumes that other people know the things they do or that they have the background to grasp what is being discussed.

Curiosity gap - When there is a gap in our knowledge and we need to find the answer or information to close that gap, our curiosity is driving that.

Curriculum - This refers to the subjects, topics, content, skills and experiences that are taught in a school.

Declarative memory - A type of long term memory, also known as explicit memory. Information recalled from declarative memory involves conscious effort to bring it to mind unlike procedural memory (see below).

Desirable difficulties - This is a term coined by Professor Robert A Bjork and Professor Elizabeth Bjork. A desirable level of challenge and difficulty must be something that students can overcome with increased effort. 'The Goldilocks Principle' - we don't want tasks to be too easy, too difficult but instead desirably difficult! Distributed practice - This is when students do little amounts regularly (i.e. one hour a day for six days) as opposed to a lot all at once (i.e. six hours in one day).

Distributed practice tends to be more effective for long term memory and is also known as spacing.

Direct instruction - In academic literature there have been various definitions and interpretations of direct instruction. To generalise, it is academic instruction that is led by the teacher in the classroom.

Dual Coding - Providing information in two different formats, eg visual aids and text, to be transferred through two different channels to memory.

Dunning Kruger effect - This is a cognitive bias where people with low ability can overestimate their ability, believing themselves to be more intelligent and capable than they actually are!

Effect size - This is most commonly associated with the work of Professor John Hattie and quite simply measures the impact of educational initiatives on achievement and outcomes. Elaboration/

Elaborative interrogation - By having students ask themselves questions (i.e 'How? Why? When?') it encourages them to think deeper and make connections to what they already know.

Encoding - This is the act of processing information and this is the first process of memory when trying to learn new material. Information needs to be transferred so that it can be stored, then later retrieved.

*Episodic memories - If we think back to our own school days we have distinct personal memories, these can include our first day at school, performing in concerts, participating in sports days or receiving examination results. We can remember who we were with, what happened and how we felt. These are episodic memories.*

*Evidence - based - This is an approach to practice that focuses attention on empirical evidence in professional decision making and action. Schools and teachers often refer to themselves as evidence based, as they base their classroom practice and approaches on an evidence base.*

*Evidence - informed - Similar to evidence-based but evidence-informed practice recognises that it is more challenging to determine the circumstances and conditions where the evidence works best. It is about applying evidence in the unique context of our classrooms and contexts. For this reason, I consider myself to be evidence-informed rather than evidence-based.*

*Extraneous load - The third type of cognitive load according to Sweller (see intrinsic and germane load). This occurs when students are exposed to irrelevant information that requires extra mental processing, this is negative and linked to the redundancy effect (see below).*

*Forgetting Curve - Based on the work of German psychologist Hermann Ebbinghaus, where he was able to illustrate how memory decays over time. If we learn new information but don't attempt to relearn or refresh that information then it can very quickly be forgotten.*

*Formative assessment - The aim of formative assessment is to monitor student learning and progress in order to provide ongoing feedback, instructions and support.*

*Free recall - This is the act of retrieval practice without any scaffolding, support or prompts ( see brain dump above as an example of this).*

*Germane load - This is the second type of cognitive load according to Sweller ( the first is intrinsic, see below). This is the process where information becomes stored in long term memory through tasks designed by the teacher to rehearse and repeat exposure to material.*

*Hawthorne effect - When people are involved in a study or experiment and they attempt to change their behaviour because they are aware that they are being studied and evaluated.*

*Interleaving - This is the mixing up of topics within a subject. Doing so helps students make connections between topics and think harder about what the appropriate strategy is for that topic.*

*Intrinsic load - According to Sweller, this is a type of cognitive load, and intrinsic refers to the mental effort required to understand subject content. This is necessary.*

*Knowledge organiser - A document that is created to support teachers and students with the essential elements of a unit; this can include key facts, dates, terminology, concepts and more. The aim is that a knowledge organiser provides a condensed but thorough overview.*

*Learning Objective/Intention/Outcome - They describe and explain what it is we want the learners in our classroom to learn. Leitner system - This is a method of using flashcards for retrieval practice and spaced over a period of time.*

Long term memory - Long term memory is incredibly powerful in terms of how much information can be stored (we do not know the limitations) and also the duration too.

Low stakes - This refers to testing that is the opposite of high stakes - no or low pressure, no formal grading, not stressful but instead informal, regular and enjoyable.

Matthew effect - This concept refers to the vocabulary gap in schools. Originally, the message derives from the Bible, gospel of Matthew, "For everyone who has will more be given and he will have an abundance. But from the one who has not, even what he has will be taken away." In an educational context, Daniel Rigney wrote in his book; The Matthew Effect, that "the word rich will get richer and the word poor will get poorer".

Massed practice - See cramming.

Memory - How our mind stores and organises information and experiences.

Metacognition - An awareness and ability to critically monitor and evaluate the way we think and the progress we make.

Multi-store model of memory - This is a model of memory by Atkinson & Shiffrin (1968) where they proposed memory consisted of three stores. The sensory register, where information is encoded and passed on to the second store, short term memory. Finally, if information is rehearsed and retained beyond short term memory it is then stored in the long term memory.

Neuroscience - The study of the brain and the nervous system.

Neuromyth - When research and information about the brain/memory is misunderstood or not communicated correctly eg learning styles.

New Theory of Disuse - This refers to the work of Professors R. A. Bjork & E. L. Bjork (1992), they suggest there are two key measures of memory strength; storage strength and retrieval strength - see storage strength and retrieval strength.

Peer review - A rigorous process where literature, such as a research paper, is reviewed by experts in the same field to ensure high quality prior to publication.

Practitioner research - This refers to research carried out by people working in that specific field, so for example teachers conducting research into education in the setting and context of their classroom. This in contrast to full time academics that conduct research to then share with others in that field.

Procedural memory - A type of long term memory that we use on a daily basis, without consciously realising that we do because we know it so well and is linked to automacy.

Redundancy effect - Coined by Peter Chandler and John Sweller, this occurs when students are presented with extra information that is not relevant to their learning. This can also occur when students are exposed to the same information in different formats and can overload their memory.

for example a powerpoint slide that contains icons that linked to the subject content (something I have been very guilty of including previously!).

Remote learning - Teaching and learning that takes places out of the physical classroom. This is not in reference to a homework task but instead teaching and learning online in the virtual classroom.

Research summary - This is when a research paper or series of research papers, studies and/or journals are summarised in one shorter and concise document.

Responsive teaching - Linked to formative assessment responsive teaching involves responding to students by asking questions, providing feedback and support all with the aim to support student progress with their learning.

Retrieval practice - The act of recalling information from long term memory in order to enhance and improve long term memory. This is a teaching and learning strategy, not an assessment strategy although high stakes testing does involve the act of recall.

Retrieval cues - Cues and prompts to aid retrieval and recall. The prompts can include images, key terms or sentence starters. This makes the act of retrieval easier to do.

Retrieval strength - Retrieval strength refers to how accessible (or retrievable) information is, this is taken from the work of Bjork and Bjork ( see New Theory of Disuse).

Retrieval induced forgetting - Retrieval-induced forgetting is a memory phenomenon where remembering specific information can lead to forgetting of other information in memory. To combat this we simply ensure that all of the essential information we want students to remember and not forget is tested regularly with retrieval practice.

Rosenshine's Principles of Instruction - This is based on the work of Barak Rosenshine. Rosenshine wrote about ten key principles that he argues underpin an effective approach to instruction in lessons. The principles include review, questioning and modelling.

Schema - This refers to how much we already know and how we explain the links between them.

Semantic memory - Our knowledge base or our own encyclopaedia of facts, information, words and concepts. Knowledge that Rome is the capital of Italy is semantic, my memories of eating gelato at the Trevi fountain as episodic.

Semmelweis effect - The Semmelweis effect or reflex refers to the notion of rejecting or ignoring new evidence or knowledge because it goes against firm held beliefs and current practices. Named so after Hungarian Doctor Ignaz Semmelweis who insisted that doctors wash their hands and become more hygienic before working with patients but initially some thought this ideas was absurd!

Short term memory - This refers to immediate memory where storage is limited both in terms of capacity and duration. This term was more widely used before the introduction of the 'working memory' concept.

*Storage Strength - Storage strength is how well learned something is, taken from the work of Bjork and Bjork ( see New Theory of Disuse).*

*Spaced practice - See distributed practice above. Split attention effect - This can occur when students have to refer to two different sources of information simultaneously whilst learning material. This adds extra load to the already limited working memory.*

*Spotlight effect - This is another cognitive bias where individuals believe other people notice their behaviour more than they likely do. In the classroom context this can prevent some students from engaging in discussions and answering questions.*

*Success criteria - The criteria that we use to support students during the teaching and learning process, as well to evaluate their performance and learning too.*

*Summative assessment - The aim of summative assessment is to evaluate student learning at the end of a unit, term, course or year.*

*Synchronous instruction - Synchronous teaching and learning refers to students all learning at the same time but not in the same place, for example a Zoom lesson where students are in different locations but learning at the same time.*

*Testing effect - This is the term used in academic literature when referring to the benefits of self-testing/retrieval practice. Due to the negative connotations associated with testing and being high stakes the term retrieval practice is more commonly used as it is intended to be a regular low stakes teaching and learning strategy.*

*TPACCK model - I developed the TPACCK model (2019), previously known as the PCK model (1986) then TPACK model (2007), from the work of Arthur Schulman, Punya Mishra and Matthew J Koehler. TPACCK explains how teachers need to have strong knowledge and confidence in the following areas; technology, cognitive science, content (subject material) and pedagogy.*

*Transfer - This is the application of learned information, concepts or materials to a new/ different context, also known as the transfer of learning.*

*Working memory - Both short term and working memory refer to immediate memory, being limited in both duration and capacity; how much information can be held and for how long. Working memory is a term coined by Baddley and Hitch as they believed the concept of short-term memory was too simplistic.*

*Zeigarnik effect - Based on the work of Russian psychologist Bluma Zeigarnik, this suggests that people tend to remember unfinished or incomplete tasks better than those completed. Students can be reluctant to begin tasks that may seem overwhelming such as an extended essay or coursework assignment. The Zeigarnik effect suggests that the key to overcoming this dread and procrastination is to simply just get started as it doesn't have to be completed all at once.*