

# XXX Teaching and Learning

## **Session 1**: Introduction and Research

*Rosenshine's Principles in Action* by Tom Sherrington

*'Rosenshine provides a highly accessible bridge between research and classroom practice. His principles are short, easy to read, and packed with insights.'*

Welcome to the first of a series of five sessions that will be exploring *Rosenshine's Principles in Action* by Tom Sherrington. We will be using this reflection booklet alongside Tom's videos in which he delivers in depth training on the principles and how they can support us all to be more effective teachers in the classroom.

Whilst it is recommended to complete each session in one sitting, you can of course stop the video at any relevant point and break the session into smaller parts to fit in with your responsibilities.

Simply follow the instructions in this booklet that will provide you with relevant links, tasks and reflection points.

### **Activity 1** (5 minutes)

Watch the following short video in which Tom Sherrington gives a brief outline of the video series to follow:

[Introduction to Rosenshine Masterclasses](#)

Tom references his blog in this video which can also be found here:

<https://teacherhead.com/2018/06/10/exploring-barak-rosenshines-seminal-principles-of-instruction-why-it-is-the-must-read-for-all-teachers/>





We are now going to move into the main part of the session in which we will use Tom’s first video as the basis of our training. You will need to pause the video at different points to complete tasks in this booklet and so may find it easier to print the booklet or use a split screen on your computer.

Locate the video here and press play:  
[Rosenshine Masterclass I- Introduction and Research](#)

Pause the video at 4.55 and complete the following activity.

**Self Awareness**

In this section of the video, Tom explores the idea of teachers being self aware and looks at the difference between teachers who know their strengths and weaknesses and those that do not.

**Activity 2:** 10 minutes

How self-aware do you think you are? Are you aware of your strengths and areas of improvement? What are they? Write some brief details below. You may want to consider your drop-in feedback.

**Activity 2 Notes**





## Theory of Action

Resume the video and watch until 8.12.

### **Activity 3:** 15 minutes

What are your key points of learning from this? Consider the following questions:

- How do we know the things we are doing in lessons lead to learning?
- To what extent do your lessons allow for cognitive processing?
- What tasks do you currently use that require low amounts of cognitive processing? How could you adapt these?

## **Activity 3 Notes**





*Principles of Instruction: Research based strategies that all teachers should know* by Barack Rosenshine.

Resume the video and stop it again at 8.50. Tom emphasises the importance of everyone reading the principles in full.



**Activity 4:** 45 minutes- 1 hour

Go to the following link and read through Rosenshine's piece on the principles. This reading is essential for underpinning the different things Tom will talk about in his videos.

[Rosenshine's Principles of Instruction](#)



Try making notes on this using the Cornell note-taking system. This is a really effective way to make notes and can also be used in the classroom when challenging students to deal with large pieces of information and organise their thinking.

**Cornell Note-Taking System**

<b><u>Topic:</u></b>	
<b><u>Key Words/Prompts</u></b>	<b><u>Main Notes</u></b>
<b><u>Summary</u></b>	



## Summary of the Principles

Barak Rosenshine's

# PRINCIPLES OF INSTRUCTION



A thematic interpretation for teachers by  
**Tom Sherrington**  
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### REVIEWING MATERIAL

#### 1 Daily review



Daily review is important in helping to resurface prior learning from the last lesson. Let's not be surprised that students don't immediately remember everything. They won't! It's a powerful technique for building fluency and confidence and it's especially important if we're about to introduce new learning – to activate relevant prior learning in working memory.

#### 10 Weekly and monthly review



### QUESTIONING

#### 3 Ask questions



#### 6 Check for student understanding



The main message I always stress is summarised in the mantra: ask more questions to more students in more depth. Rosenshine gives lots of great examples of the types of questions teachers can ask. He also reinforces the importance of process questions. We need ask how students worked things out, not just get answers. He is also really good on stressing that asking questions is about getting feedback to us as teachers about how well we've taught the material and about the need to check understanding to ensure misconceptions are flushed out and tackled.

### SEQUENCING CONCEPTS & MODELLING

#### 2 Present new material using small steps



Small steps – with practice at each stage. We need to break down our concepts and procedures (like multi-stage maths problems or writing) into small steps so that each can be practised.

Models – including the importance of the worked-example effect to reduce cognitive load. We need to give many worked examples; too often teachers give too few.

#### 4 Provide models



#### 8 Provide scaffolds for difficult tasks



Scaffolding is needed to develop expertise – a form of mastery coaching, where cognitive supports are given – such as how to structure extended writing – but they are gradually withdrawn. The sequencing is key. Stabilisers on a bike are really powerful aids to the learning and confidence building – but eventually they need to come off.

### STAGES OF PRACTICE

#### 5 Guide student practice



Teachers need to be up close to students' initial attempts, making sure that they are building confidence and not making too many errors. This is a common weakness with 'less effective teachers'. Guided practice requires close supervision and feedback. High success rate – in questioning and practice – is important. Rosenshine suggests the optimum is 80%. i.e. high! Not 95-100% (too easy). He even suggests 70% is too low.

#### 7 Obtain a high success rate



#### 9 Independent practice



Independent, monitored practice. Successful teachers make time for students to do the things they've been taught, by themselves... when they're ready. "Students need extensive, successful, independent practice in order for skills and knowledge to become automatic"



## Working Memory and Long Term Memory

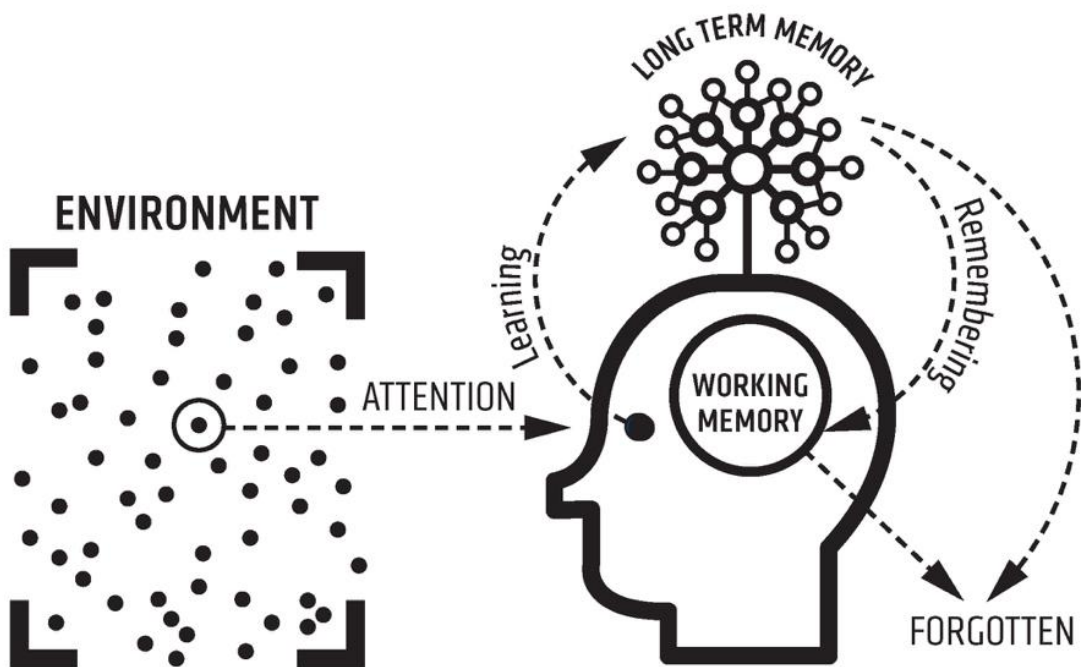
Now you have a better understanding of the principles, it is time to resume the video. This part is going to look in more depth at working memory and long term memory.

Pause the video at 14.51 and look at the diagram below. This will also be on your video screen.

### Activity 5: 15 minutes



Around the outside of the diagram, write down your interpretation of what this is telling us and what problems it might suggest in terms of our students' long term and working memories.



Resume the video and add to/change any of your notes based on Tom's explanation of how memory works.



# Schema Building

Continue to watch the video until 25.26.

In this section, Tom talks you through schema building and begins to outline the difference between shallow knowledge and rich knowledge. He addresses the fact that recall of surface level facts is a superficial example of learning and that there needs to exist a much broader knowledge base beneath that.



## PROFESSOR ARTHUR SHIMAMURA'S A WHOLE-BRAIN LEARNING APPROACH FOR STUDENTS AND TEACHERS

M

MOTIVATE

We need to be motivated to use energy to keep focused on the learning process. Designed well, motivation can be intrinsic to learning, for example, by generating curiosity, framing new material as a quest to answer big questions, organising ideas within a wider schema, story-telling and asking the ‘aesthetic question’: “What do you think? How does it make you feel? Why is it good?” “The aesthetic question engages emotional brain circuits and forces us to attend to and organize our knowledge.”



A

ATTEND

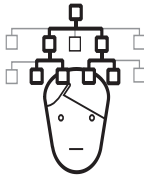
Academic learning is a ‘top-down’ activity whereby we consciously attend to the information needed to build our schema from all the stimuli we’re exposed to. This is hard so ‘mind wandering’ is common and teachers need to expect it. Ideally students will consciously attend to the learning goals and consciously make connections – but sometimes an instructor needs grab attention, acting as their students’ prefrontal cortex to direct their top-down processing.



R

RELATE

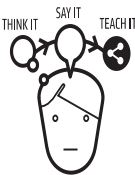
Shimamura offers numerous biological insights about how we store and connect information through memory consolidation. The practical strategies include deploying elaborative-interrogative questioning – asking how and why – using mental images, analogies, constructing concept maps as schematic representations of sets of connected ideas and training students to make notes organised in hierarchical structures.



G

GENERATE

Shimamura suggests: “Think it, say it, teach it! These are the simplest things to do to improve your memory”. He details multiple ways in which our memories are strengthened when we generate information from our memory, not simply restating it but using our own words. If we tell someone what we’ve learned we can improve our memory by 30-50%. Explained in terms of brain functions, Generate reinforces the widely known retrieval practice concept.



E

EVALUATE

This is the territory of metacognition with a nice metaphor of the prefrontal cortex acting as the conductor of the orchestra of brain functions. There’s a problem with the illusion of knowing when we are familiar with information even when we cannot fully recollect it. We stop trying to learn more if we kid ourselves into thinking we already know it. Students should, therefore, be taught to check their understanding using spaced retrieval practice, generating information by explaining their learning to others as a form of self-test.





**Activity 5:** 15 minutes

Take some time to reflect on this piece of learning and consider your own classroom practice. There will be things you do that on reflection, require a **shallow level of knowledge** and others that require a **rich level of knowledge**.



Write some examples of these below.

Shallow Knowledge	Rich Knowledge



Five Key Strategies

Resume the video and watch it now until the end.

In this final section, Tom introduces us to Wiliam’s Five Key Strategies and discusses the need for immediate feedback and utilising students to check their own and others’ knowledge.

	Where the learner is going	Where the learner is	How to get there
Teacher	Clarifying, sharing and understanding learning intentions	Engineering effective discussions, tasks, and activities that elicit evidence of learning	Providing feedback that moves learners forward
Peer		Activating students as learning resources for one another	
Learner		Activating students as owners of their own learning	

(Wiliam & Thompson, 2007)

Notes on Five Key Strategies



## Final Reflections



### Activity 6: 20-30 minutes

Take some time to reflect on the video and your learning and make some notes on the following prompts:

Key takeaways from the session are...

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The key points of learning that I will look to address in my classroom practice are...

- ✓
- ✓
- ✓
- ✓

I would still like to know more about or need some additional support with...

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