

MENTOR HANDBOOK

19 | INSTRUCTION: SCAFFOLDING

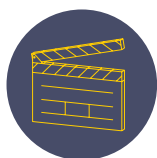
STUDY

KEY TAKEAWAYS FOR THIS MODULE

Your teacher can successfully scaffold their instructions if they understand that:

- > Pupils will struggle and working memory will become overloaded if they do not have relevant knowledge of new content, particularly if it is complex or abstract.
- > Scaffolding can provide knowledge to support pupils to access new content, through modelling, worked examples and guides.
- > Scaffolding needs to be removed over time as it can become a barrier once pupil knowledge is developed. However, a high success rate should be maintained.

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SUMMARY BELOW:**

TEACHING CHALLENGE

Mr Jones is increasingly confident at using the I-We-You model to lead sequences of instruction. But he finds that some of his pupils become overwhelmed by new content and many pupils struggle when the ideas are abstract or complex. How can his instruction support pupils to be successful when tackling challenging material?

KEY IDEA

Effective scaffolding gives pupils the knowledge and guidance to access challenging content but should be removed once pupils are experiencing high rates of success.

KNOWLEDGE, NEW CONTENT AND THE ROLE OF SCAFFOLDING

Mr Jones now understands that to learn new content pupils need to be able to process it in their working memory, but that working memory capacity is limited and varies between pupils (Gathercole et al., 2006). Related knowledge helps pupils make sense of new content (Willingham, 2009). For example, pupil vocabulary knowledge allows them to process strings of letters as sentences when reading and knowledge of phonics helps them when they encounter an unfamiliar word, reducing the demands on working memory. Prior knowledge reduces the burden on working memory and frees it up to think about more challenging concepts. Where prior knowledge is lacking, further support through scaffolding can help, for example by providing a definition and pronunciation of an unfamiliar key word. But where pupils already have this knowledge, scaffolding can get in the way of pupils using their prior knowledge (Pashler et al., 2007).

Prior knowledge helps us to grasp related new ideas more easily, particularly if the new ideas are concrete, as most of the things we know are concrete. However, many of the ideas encountered at school are abstract, and distant from pupils' everyday experiences (Willingham, 2009). When introducing abstract ideas, teachers can provide related scaffolds that make the ideas more concrete. This reduces the chances of working memory becoming overloaded, increasing the chances of pupil success. For example, the idea of adding fractions can be abstract, but we can make it more concrete by using objects or diagrams (Pashler et al., 2007).

INTRODUCING SCAFFOLDING

Scaffolding can be introduced to support pupils to succeed with difficult tasks where they lack sufficient prior knowledge. Scaffolding involves breaking down tasks into manageable steps and providing temporary supports. This enables pupils to focus on and think about only certain aspects of the task at any one time, reducing the chances of working memory being overloaded.

Mr Jones should try to anticipate what his pupils will struggle with most, break down the task into manageable steps, and then decide what kinds of scaffolding he might put in place.

He can draw on a few different types of scaffold to support pupil thinking and make his 'expert thinking' explicit:

- > **Modelling:** For example, sharing an excellent piece of work or 'thinking aloud' through a problem (Rosenshine, 2012). Mr Jones can reduce the cognitive burden his pupils feel by directing pupil attention towards the key features of a problem or example. This can help them to break down a complex task into more manageable parts.

> **Worked examples:** When introducing a new type of problem in maths, Mr Jones could break the problem down into steps instead of getting his pupils to attempt it in one go. He could then guide them through each step by providing prompts or explanations which would help the pupils succeed at each step. Worked examples reduce the number of options pupils need to think about by pointing them directly to successful approaches (Sweller, 2016).

> **Guides:** Teachers can also anticipate common pupil mistakes and misconceptions and provide guides such as checklists as support to overcome these (Rosenshine, 2012). For example, when teaching his pupils creative writing, Mr Jones could give his pupils a checklist of things they should include. This means that pupils do not have to simultaneously think about both what they want to write and the complex devices they need to use. Checklists also support them to review their work to avoid common errors like leaving out full stops and misconceptions like every 's' should have an apostrophe.

REMOVING SCAFFOLDING

Scaffolds need to be temporary to successfully support learning. As pupil knowledge develops, using fewer examples and more problem solving appears to improve learning, rather than continuing to provide high levels of guidance (Pashler et al., 2007). As pupils develop more knowledge, trying to process the scaffolding at the same time as drawing on their existing knowledge can overload working memory. As a result, scaffolding is best removed as pupils' knowledge grows. Rather than removing all the scaffolds at once, however, Mr Jones can gradually 'fade' them out by removing support gradually, as pupils begin to experience higher success rates (Rosenshine, 2012).

Effective scaffolding increases the chances of pupils experiencing success and improves pupil motivation (Coe et al., 2014). Success should be a central guiding principle when deciding whether and when to remove scaffolding as pupil expertise increases.

NUANCES AND CAVEATS

Scaffolding alone cannot overcome limitations in pupil prior knowledge. Strategies like explicitly teaching content and allowing pupils to rehearse this new knowledge are necessary to ensure pupils have adequate knowledge (Rosenshine, 2012).

SELECT

Before you observe, first select a **DEVELOPMENT AREA** to focus on. Next, familiarise yourself with the **FOCUSED DEVELOPMENT AREAS**, as you will zoom in on one of these during your observation. Finally, craft a **PRECISE TARGET** when you observe your teacher (examples are provided below).

DEVELOPMENT AREA	FOCUSED DEVELOPMENT AREA	EXAMPLE PRECISE TARGETS
State and explain steps	<ul style="list-style-type: none"> > Teacher breaks down learning or tasks into specific, memorable, manageable steps for pupils to follow. > Teacher checks and identifies where pupils may struggle most and provides extra support and guidance to support. > Teacher models applying the steps to a task and demonstrating the process to take so pupils can apply this knowledge to similar contexts. 	
Scaffolding	<ul style="list-style-type: none"> > Teacher explains new concepts by starting with the simplest explanation and providing concrete examples. > Teacher models the thought process when completing tasks so pupils understand the process behind completing the task and have the key points available to use when doing it independently. > Teacher checks pupil understanding, particularly of challenging content, and adds in extra support in the form of explanations and examples in a way that best suits the needs of the class. 	<p>If your teacher is...</p> <ul style="list-style-type: none"> > Not doing it at all: Review a task and pre-emptively identify the areas of the task pupils may find particularly challenging. Plan an explanation or an example that would support pupils with one of these challenging areas. > Doing it but needs some improvement: Circulate and specifically check on pupils' progress on the task, paying particular attention to areas you have identified as challenging and deliver an additional explanation or an example to support the pupils who are struggling. > Doing it well, but needs some stretch: If the majority of pupils are getting stuck on a certain aspect of the task, stop the class and deliver an explanation or additional example to support pupils.
Removing scaffolding	<ul style="list-style-type: none"> > Teacher checks pupils' understanding of the key learning is sound before removing scaffolding so they have just enough support. > Teacher explicitly articulates high academic expectations of pupils in explaining, modelling and encouraging them to remove scaffolds at the appropriate time to make their learning more effortful. 	

RECORD YOUR THINKING HERE

DEVELOPMENT AREA	FOCUSED DEVELOPMENT AREA	EXAMPLE PRECISE TARGETS
(select before observing)	(select whilst observing)	(select/write whilst observing)

OBSERVE

Consider the following questions based on a short (approximately 15 minute) observation of your teacher.

What was your teacher's **previous** target? Are they meeting it? How do you know?

For the **DEVELOPMENT AREA** you are focussing on for this observation, what is your teacher already doing well?

Next, go to the previous page and select a **FOCUSED DEVELOPMENT AREA** to further zoom in on. Then select (from the examples) or write one **PRECISE TARGET** (bite-sized action) to coach your teacher on. You can choose to stick with the previous target if your teacher have not made enough progress yet.

How will you model the target to your teacher to show them what good looks like? What questions will you ask to check your teacher understands the model? For example, 'How it is different from your current practice?', 'What impact might it have on your practice and pupils?', 'What links can you see between the model and the module principles (below)?'

Reminder: Your model should help your teacher develop their ability in some of the following:

- > Break complex material into smaller steps.
- > Use modelling, explanations and scaffolds, acknowledging that pupils need more structure early in their learning.
- > Remove scaffolding only when pupils are achieving a high degree of success in applying previously taught material.
- > Narrate thought processes when modelling to make explicit how experts think.
- > Reframe questions to provide greater scaffolding or greater stretch.

Next, meet with your teacher to work through the 'Feedback' stage of instructional coaching. See the guidance on the feedback stage in the appendices of the Mentor Handbook for support.

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