Ambition Institute

MENTOR HANDBOOK

I5 | INSTRUCTION: TEACHER EXPOSITION

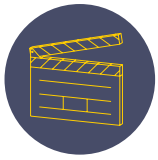
STUDY

KEY TAKEAWAYS FOR THIS MODULE

Your teacher's expositions will better match pupil needs if they understand:

- The importance of preventing pupil overload by first building on prior knowledge.
- The 'I-We-You' approach helps them to ensure they manage pupil thinking and working memory effectively.
- Using concrete and abstract examples, modelling, and worked examples in expositions support pupils when introducing new concepts and processes.
- Checking pupil understanding prior to letting them practise independently can be a powerful approach.

Get yourself into a strong position to mentor your teacher by working through the following:



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READ THE EVIDENCE SUMMARY BELOW:

TEACHING CHALLENGE

Ms Thomas is confident about what her pupils should learn. However, when she tries to convey new content to pupils, she struggles to keep their attention: if she gives a quick explanation, she gets lots of questions and confusion, but if she goes into a lot of detail, she fears pupils will stop listening. How can Ms Thomas most efficiently support her pupils' thinking when conveying new ideas in her lessons, and get a sense of whether pupils have understood?

KEY IDEA

Adapting teaching requires assessment of pupil needs and appropriate teacher responses, before the lesson and within it, to enable a high pupil success rate.

EFFECTIVE EXPOSITION

Effective teaching takes account of the limits of pupils' working memories. Pupils may struggle if they experience cognitive overload: this is particularly likely if pupils are exposed to too much new material at once. Ms Thomas can manage pupil thinking effectively by introducing material in stages by:

- Drawing on prior knowledge, explicitly linking to what pupils have already been taught.
- Breaking material up into smaller chunks when introducing it to reduce overload.
- Structuring her teaching around an 'I-We-You' model (Lemov, 2015). This should begin with what pupils already know; provide them with a clear explanation of the key ideas and demonstration of the task (I do); provide an opportunity to practise the task collectively and for the teacher to check pupil understanding (We do); and finally move to pupils working independently (You do) (Lemov, 2015).

The I-We-You (Lemov, 2015) structure provides multiple opportunities for teachers to convey new ideas by using concrete examples, modelling, and worked examples. These place manageable demands on pupils' working memory, supporting them to actively process and understand new material (Deans for Impact, 2015).

EXPLANATIONS

When should Ms Thomas give explanations? Explanations are more effective when teachers want to convey concepts rather than processes (Wittwer & Renkl, 2010). However, the examples teachers give are more important in pupils' understanding than the explanations accompanying them (Wittwer & Renkl, 2010). Ms Thomas wants her pupils to understand both concrete ideas (things they can visualise, like 'numbers as counters') and abstract ideas (things with fewer sensory properties such as 'multiplication of numbers').

She can best convey this to her pupils by using concrete examples in her exposition (ideally linked to current pupil understanding) and connecting them with more abstract ones, or by moving from concrete to abstract representations over time (Pashler et al., 2007). For example, she may introduce multiplication using counters and then remove these as pupils gain understanding of multiplication as an operation. Pupils find it easier to process an explanation where images are paired with spoken words, rather than where images are accompanied with extensive written text (Pashler et al., 2007).

MODELLING

Concrete examples can help Ms Thomas to introduce new concepts. What about new processes? When learning how to solve problems, pupils need support with their thinking through modelling. When teachers model and think aloud while demonstrating how to solve a problem, this provides cognitive support (Rosenshine, 2012). Modelling can be done in a variety of ways; the goal is to give pupils a scaffold while they are a novice before gradually removing it as their mental model develops.

For Ms Thomas, modelling might involve talking her pupils through each step of a new problem in maths. For writing an essay it might involve talking through the decisions she would make in writing. A particularly powerful form of modelling for new processes is providing a worked example that the teacher walks the class through. Novices who are provided with worked examples when learning a new problem outperform those without them (Sweller, 2016).

Worked examples reduce cognitive load by providing scaffolding to help pupils break a problem into chunks, allowing teachers to introduce the problem step-by-step (Deans for Impact, 2015). Furthermore, providing worked examples can help pupils to focus on the relevant parts of the problem rather than wasting time looking at irrelevant solutions, or mismatching problems and solutions (Wittwer & Renkl, 2010). Worked examples provide scaffolding to help pupils master a particular part of the problem, both securing it within their mental model, and making it available to draw on it when required for the next part of the problem.

In sum, including concrete and abstract examples, and modelling by thinking aloud through worked examples, can effectively support pupils to understand new ideas without overloading their working memory.

CHECKING PUPIL UNDERSTANDING

In the opening problem, Ms Thomas also wanted to ensure that her pupils understood content. While examples and modelling can convey material, she will only know whether pupils have understood by checking their understanding. Pupils tend to believe that they understand something if it feels familiar, even if their understanding is superficial (Christodoulou, 2016). Formative assessments can help Ms Thomas gather information about what each of her pupils do and do not understand. After modelling how to complete a problem and before getting pupils to practise independently, Ms Thomas could ask questions to check pupil understanding.

NUANCES AND CAVEATS

While guided instruction through modelling is more effective for novices than other forms of instruction, removing cognitive supports as pupils gain expertise is vital. Where pupils already have a strong understanding of how to solve a problem, worked examples may distract them from a process which they are capable of completing independently (Pashler et al., 2007).

SELECT

Before you observe, first select a **DEVELOPMENT AREA** to focus on. Next, familiarise youself 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
Modelling and exemplifying a process	> Teacher identifies the key learning points to draw from the process they are modelling and primes pupils to focus on these. > Teacher works through the process they are modelling including the thought process behind how to do it and examples to support pupils to understand challenging parts of the process. > Teacher focuses pupil attention by condensing the process into manageable, sequential, specific steps.	
Activating pupils' prior Knowledge	> The teacher explains new concepts by linking them to pupils' prior knowledge. > Teacher provides a clear definition of a concept that pupils will understand and links it to the examples they use. > **Teacher uses examples and non-examples to exemplify the concept and explains the underpinning features of these to aid pupil understanding.**	**If your teacher is...** > **Not doing it at all:** Identify a useful example to exemplify a concept and plan an explanation using the example. > **Doing it but needs some improvement:** Identify a non-example of a concept and plan how to deliver this alongside an example to exemplify the concept more clearly. > **Doing it well, but needs some stretch:** Plan an explanation that highlights the underpinning features of examples and non-examples to deepen pupils' understanding of the key concept, e.g. highlight to pupils the shapes that are examples of quadrilaterals because they have four sides and the shapes that are not examples of quadrilaterals because they have more or fewer sides.
Addressing gaps in pupils' prior knowledge	> After the teacher has modelled a process to pupils, the teacher models the process again with increasing input from pupils to check they understand the thought process and outcome. > Teacher checks that pupils have understood the steps in the process or concept being explained, tackling gaps or misconceptions before getting pupils to increase their input or practise independently.	

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:

> Link what pupils already know to what is being taught.
> Reducing distractions that take attention away from what is being taught.
> Encourage pupils to share emerging understanding and points of confusion so that misconceptions can be addressed.
> Use modelling, explanations and scaffolds, acknowledging that pupils need more structure early in their learning.
> Start expositions at the point of current pupil understanding.
> Use concrete representation of abstract ideas (e.g. make use of analogies, metaphors, examples and non-examples).

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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