**Metacognition – Recommendation 3**

**Recommendation 3:
Model your own thinking to help pupils develop their metacognitive and cognitive skills.**

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| A tailor will teach an apprentice by allowing them to work alongside them watching their movements and techniques closely, modelling their craft. Teachers in all subjects do the same – reveal their expert subject knowledge and skill to their novice learners.All teachers use modelling to some extent. The most effective teachers—like a master craftsman working with their novice apprentice—are aware of their expertise and of how to reveal their skills to learners and how to assess whether their pupils have understood them; they are metacognitive about their teaching.**Teacher modelling**Teachers can model their thinking as they approach a task to reveal the reflections of an effective learner. In Recommendation 2, we gave the example of a teacher posing questions about how to plan, monitor, and evaluate while approaching a self-portrait task—an example of teachers making such strategies explicit. Similarly, teachers can outline their thinking about their knowledge; for example, while teaching young pupils how to perform a forward roll safely in PE, a teacher might talk through her actions as she demonstrates: |

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| ‘I don’t want to hurt my neck and want to do this neatly. So first, to protect my neck, I need to tuck my chin to chest like this. Then when I start to roll, I remember not to roll onto my head. Instead, look how I’m going to roll onto my back and shoulders. This also means my back is round, so I can smoothly roll like this. Now, who can remember what I did first to protect my neck?’  |

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| Such modelling is only effective if the pupils have access to relevant knowledge (in this example, if these are very young children, they may not even know what a forward roll is supposed to look like, so the teacher might perform one without talking it through first). It is also more effective when pupils are engaged in the task being modelled and have the opportunity to practise it immediately after the demonstration.Modelling of this type is rarely planned by teachers as these processes or skills come ‘naturally’ to them, but that risks these important prompts remaining implicit, which is particularly ineffective for novice pupils. To move from novice to expert, our pupils need to know how an expert athlete, artist, historian, or scientist habitually thinks and acts. We need to make these largely implicit processes explicit to our novice learners.There is some evidence, at least in terms of metacognition, that such scaffolding should not be too specific as this may inhibit reflection. Some **‘deliberate difficulty’** [1] is required so that pupils have gaps where they have to think for themselves and monitor their learning with increasing independence.Reinforcing the value of the processes modelled by engaging the pupils in reflecting on how successful they were at the end of the activity, or lesson, is also important. **Removing the scaffolding**Ultimately, the purpose of modelling is to help novice pupils become more capable of learning independently and thinking metacognitively.The modelling process involves teachers making gradual changes in support. Initially, scaffolding such as direct modelling and support from the teacher, is necessary, but as guided practice moves to independent practice, teacher input will change to monitoring and intervening only when necessary.Practice and independent work help to develop cognitive and metacognitive knowledge. Over time, such thinking becomes habitual – acting as ‘internal scaffolding’ that will support future learning.To illustrate this, it is helpful to look again at the seven-step model for teaching metacognitive strategies: [2]  |

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So, just as a PE teacher might begin by modelling a forward roll, in a maths lesson, a model worked example of a given task or problem can be used. [3]

For example, a teacher first shares a completed worked example of adding fractions before looking more closely at the steps involved in working out the solution. After the step-by-step modelling, the teacher gradually removes the scaffold, getting pupils to undertake a partially completed equation.

Teachers should be aware that some pupils may find it hard to articulate their thoughts while doing a task, and doing so may interfere with their ability to complete the task successfully. It may be that metacognitive reflection needs to follow the completion of the task for novice pupils, and not occur concurrently, as task completion may demand all of a pupil’s mental resources.

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| **Misconception 3: Metacognition represents ‘higher order’ thinking and is therefore more important than mere cognition or subject knowledge**We know that metacognition is the knowledge of cognition and the strategies to regulate and control it. However, it would be a mistake to see metacognition as somehow ‘higher order’, hierarchically, over cognitive activities such as remembering knowledge (Bloom’s taxonomy is sometimes misinterpreted as being a hierarchy that privileges ‘evaluation’ over ‘knowledge’).As has been pointed out, it is very hard to have metacognitive knowledge about how competent you are in a given subject domain, or how best you can learn, without sound subject knowledge. [4]For example, a student can use metacognitive planning strategies when drafting a GCSE essay about Shakespeare. But without an understanding of Shakespeare’s plays, language, and the relevant social context, the essay will not be successful.We cannot adequately deploy metacognitive strategies for monitoring and evaluating our essay-writing if we do not first understand the components of a successful essay and have a knowledge of Shakespeare’s world.Metacognition and cognition display a complex interplay as pupils learn. We should look to develop both concurrently and not create false hierarchies where they do not exist. |

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**Further resources...**

1. Watch this short video by Dylan William defining metacognition. [Just click here](https://educationendowmentfoundation.us8.list-manage.com/track/click?u=cb569f99caaaedff117cdc74c&id=b0bd829a2a&e=ab6bf9c839).
2. Read Gianfranco Conti's blog on '12 metacognition-modelling strategies for the foreign language classroom'. [Just click here](https://educationendowmentfoundation.us8.list-manage.com/track/click?u=cb569f99caaaedff117cdc74c&id=f8fdd58c44&e=ab6bf9c839).
3. Read this Teachwire article by Alex Quigley, co-author of the EEF's metacognition guidance report: 'Your six-step sequence to modelling writing across the curriculum'. [Just click](https://educationendowmentfoundation.us8.list-manage.com/track/click?u=cb569f99caaaedff117cdc74c&id=4c0b4c604f&e=ab6bf9c839)[here](https://educationendowmentfoundation.us8.list-manage.com/track/click?u=cb569f99caaaedff117cdc74c&id=4c0b4c604f&e=ab6bf9c839).