ECT Mentor session

Module 3: Developing quality pedagogy
Week 4: Modelling metacognitive strategies

Session Elements

analyse
artefacts

rehearsal

self-assessment

Learning Intentions for this session

Your ECT will learn how to:

Model effectively by:

4d.   providing sufficient opportunity for pupils to consolidate and practise applying new knowledge and skills

4i.   narrating thought processes when modelling to make explicit how experts think (e.g. asking questions aloud that pupils should consider when working independently and drawing pupils' attention to links with prior knowledge)

4j.   making the steps in a process memorable and ensuring pupils can recall them (e.g. naming them, developing mnemonics or linking to memorable stories)

4k.   exposing potential pitfalls and explaining how to avoid them

Introduction

In their self-directed study session earlier this week, your mentee extended their knowledge of how to transform pupils' knowledge, capabilities and beliefs about learning through modelling the effective use of metacognitive strategies to enable pupils to self-regulate their learning. To enable this, they were prompted to identify the role of metacognition in teacher modelling, making the steps in a process explicit and through the setting of quality homework that encourages habits of self-regulation.

In this session you will help your mentee build on these activities through considering practical implications of embedding this into their practice. You will spend some time reviewing the activity they chose to do from the self-directed study. By the end of this mentor session, aim to ensure that your mentee:

1) Has an increased understanding of how metacognitive talk and the deployment of key memory strategies (e.g. mnemonics) can result in modelling that has greater impact on learning.

2) Reviews and take steps to improve the quality of homework set, yet retains a manageable workload.

Research and Practice Summary

Modelling metacognitive strategies – Year 1 Science

Christine is teaching science to her Year 1 class. She wants them to be able to name a variety of common animals, including fish, amphibians, reptiles, birds and mammals, and to identify the main differences between fish and amphibians. Earlier in the lesson, she reminded them of work from Reception year on the differences between plants and animals; and she introduced the core vocabulary (fish, bird, amphibian, mammal, reptile), alongside example images of each type of animal.

How could she use the metacognition and self-regulation strategies here to help her pupils?

You have previously seen how the gradual release of responsibility model can bring together some key ideas about teaching and learning content to pupils. The stages in the model could be described in various ways. However, the central idea is that effective teaching begins with exposition and modelling and provides extensive practice with fading of support, with the end goal of achieving independence. Throughout the process, teachers check pupils' understanding to identify the best next steps in learning and dynamically move pupils between the stages.

Metacognition is often described simply as 'thinking about thinking'. We learn to control our thinking by monitoring what we know about people (self and others), tasks and strategies. Metacognitive knowledge grows through experience by setting goals and by selecting strategies to achieve those goals. All of these components interact with one another, and through such interactions, we develop metacognitive skills and further our metacognitive knowledge. In practical terms, a useful rule of thumb is to think of metacognition as focusing on the 'how' of learning.

To help you to teach your pupils metacognitive strategies, you could:

- 'think aloud': show your pupils what you are thinking when you are carrying out a complex task (e.g. 'When I come to write this conclusion, I need to remember to...')

- build opportunities in your lessons for your pupils to plan out their time and for them to monitor (perhaps with a partner) their progress through a task

- get your pupils to evaluate their learning (e.g. pupils award themselves WWW [what went well] and EBI [even better if])

- when instructing them in a new task, remind your pupils how they will be thinking and learning in a similar way to one they have experienced before

Given the age of Christine's pupils, and what she wants them to learn, which of these strategies might work best for her? Which might work best for your own context?

Self-regulated learning, an associated concept, is about how pupils monitor their learning. Self-regulated learners are aware of their strengths and limitations, they set learning goals for themselves, they monitor their behaviour in terms of their goals and self-reflect on their increasing effectiveness. This enhances their self-satisfaction and motivation to continue to improve.

To help you to teach your pupils to self-regulate in their learning, you could:

- set yourself, or others, as an example (e.g. 'I self-regulate my learning by making a promise to myself to read about my subject for two hours every Sunday, and giving myself a treat when I do')

- make self-evaluation and target-setting a frequent feature of learning (e.g. by asking your pupils to use 'I can' and 'I will' statements after they have finished a topic)

- in verbal feedback, invite your pupils to express themselves in terms of their strengths, their development areas and their next steps

- closely monitor not just the quality of their homework but how they do it (e.g. the total time they spend on it, the breaks they build in for themselves, how they chunk it, if they draft and re-draft-- you could sample this with just a small number of your pupils)

Will any of these strategies be useful for Christine? In particular, how might homework by used effectively here?

Modelling is an instructional strategy in which the teacher demonstrates a new concept or approach to learning and pupils learn by observing. It describes the process of learning or acquiring new information, skills or behaviour through observation rather than through direct experience or trial-and-error efforts. Modelling involves using a new method or concept as part of the instruction process, so that pupils can hear or see what you intend them to do. It helps them to understand more clearly how to solve a problem or construct a sentence, for example, by seeing it being done. It also enables them to practise more effectively and therefore encode and consolidate the new learning in long-term memory. Examples of modelling include written, visual or video guides, scaffolding and worked examples.

What Christine did – a script of her lesson

"I want to see if I can remember the names of the different animal groups. I have a cool way of remembering them. It's linked to a pet shop I go to called FARM B. (Show image of pet shop sign "FARM B"). Inside, all of the different animals are grouped together. In the F section are the fish. In the A section are the amphibians. In the R section, hmm… let me think which of our animal groups begins with 'r'? (Refers back to images of different animals with names.) Oh yes, the reptiles. Then on to the M section. That's the mammals. Then, finally, we have the B section. What were they again? Birds. Let me check if I have them all, F - Fish, A - amphibians, R - reptiles, M - mammals, B - birds. FARM B - what an easy way to remember the different types of animals!"

She then explored features of fish and amphibians through looking at both groups, sharing what the pupils know about each. She asked questions e.g.: How do I breathe? How do I move? Where do I live?

"How can I tell a fish from an amphibian?
Now that I know the names 'fish' and 'amphibian', I need to remember how to tell them apart. I know that the main difference is that amphibians can breathe in and out of water. How can I remember that difference? Let's look at the word:
Amphib In and out

That's a great way of remembering that amphibians can breathe in and out of water!! I love it when the names of animals tell us about their special features!"
Christine then showed the class a picture of an unnamed animal with 'clues'.
"So, let me see if this works for animal x. The clue says, 'I can breathe out of water.' Hmm, so can amphibians, so does this mean it is definitely an amphibian? No, because there are other groups of animals that can breathe out of water like birds and mammals so I must look at its other features.

Clue 2: "I can also breathe in water." Right, I'm happy to say it must be an amphibian now because only amphibians can breathe in and out of water."

Christine narrated her thought processes by thinking out loud. This would model metacognition linked to subject knowledge for her pupils. Her use of mnemonics (FARM B, Amphib In and out) helped make the learning

memorable. She alerted her pupils to the potential pitfall (of classing all animals that breathe out of water amphibians). To check their learning had 'stuck', she set the class homework to use the mnemonic to help them work out the features of another group of animals. She then used this homework task to revisit the learning and build upon their knowledge.

Mentor Meeting Activities

Throughout the session, try to refer explicitly to the Learning Intentions and encourage your mentee to record key points in their Learning Log. Tailor your use of the Theory to Practice activities below in response to the Review and Plan section of this session.

Review and Plan 5 mins

Clarify the Learning Intentions for this session with your mentee.

At the start of this module, you looked at all of the 'learn how to' statements for Standards 4 and 5 and conducted a module audit with your mentee. As a result, you identified some areas in which they are already confident and skilled and some areas in which they will want more practice and support from you and others. Look back at this audit now and use it to help decide how you and your mentee will make the most productive use of the suggested Theory to Practice activities below.

Theory to Practice 40 mins

1. Analyse artefacts

In the previous self-directed study session, your mentee will have chosen from the following:

1) Scripting. Developed a 'metacognitive script' for sharing their thought processes in a way that makes their implicit thoughts clear to the pupils.

2) Practical activity. Within a pending homework task, created a written model or worked example to demonstrate the implicit thought processes needed to successfully attempt the task.

3) Analysing artefacts. Reviewed a series of homework tasks previously set and considered the place of metacognitive questions/prompts in the tasks set so that opportunities for pupil self-regulation are developed.

Invite your mentee to describe what they did and to explain how it would support their pupils' metacognition – their ability to plan, monitor and evaluate. Is their script, or the homework they set, likely to lead to independence and academic success?

2. Rehearsal

Taking their script or set of homeworks as a starting point, you are now going to help your mentee rehearse how they would model the set task to their pupils. Your aim is to rehearse how your mentee will:

- narrate their thought processes to make explicit how they think

- make the steps in a process memorable

- expose potential pitfalls and explaining how to avoid them

Use the script from Christine's Year 1 science lesson as your model. You don't have to go quite as far, if there isn't the time. It's more important to rehearse the parts of your explanation that model thought processes, memorable steps and avoiding pitfalls.

3. Self-assessment

In their self-directed study session, your mentee reflected on their classroom practice since the start of the year and completed a checklist similar to this, where they recorded how frequently they 'do this'. Now, as a result of their study activities and their mentoring with you, ask them to record their confidence in the same areas. (Look back at the Research and Practice Summary for examples).

I do this	Not at all	Quite	Very confident
Think aloud			
Time for pupils to monitor progress			
Peer- and self-evaluation			
Thinking in similar ways for different tasks			
Set myself as an example of a learner			
Self-target setting			
Monitor how they do homework			

Next Steps 5 mins

Agree with your mentee how they will now put their learning from this week's session(s) into practice in their teaching. Help your mentee to clarify:

1. the action(s) they will take and how these action(s) are expected to contribute to improving pupil learning
2. what success will 'look like' in relation to these action(s)
3. how they will evaluate their success in taking these action(s)

Note the date of your next mentor meeting, when you will check on your mentee's progress.