

Metacognition and self-regulation – high impact, low cost

January 2022

“Self-regulated learners are aware of their strengths and weaknesses, and can motivate themselves to engage in, and improve, their learning”

Since as far back as 2011, the EEF has reported on the positive and value for money impact of metacognitive approaches on pupil learning in its [Teaching and Learning Toolkit](#). More recently, it has been identified as one of the four core elements in Essex Local Authority's “Addressing Educational Disadvantage” Strategy (*Addressing Educational Disadvantage in Schools and Colleges: the Essex Way*, Ed. Marc Rowland, John Catt 2021).

In this **Spotlight**, we explore the guidance available from the Education Endowment Foundation to support schools in developing metacognition at the core of practice, including some often overlooked tools and resources.

In its recently updated Teaching and Learning Toolkit, metacognition is described as **very high impact** for **very little cost**, based on **extensive evidence**.

Metacognition and self-regulation

Very high impact for very low cost based on extensive evidence



But what does it look like in practice?

The EEF Guidance Report **Metacognition and Self-Regulated Learning** was first published in 2018 – you can read it [here](#).

“This guidance report reviews the best available research to offer teachers and senior leaders practical advice on how to develop their pupils’ metacognitive skills and knowledge. The report has recommendations in seven areas and ‘myth busts’ common misconceptions teachers have about

metacognition. For example, some teachers think they need to teach metacognitive approaches in ‘learning to learn’ or ‘thinking skills’ sessions. But the report warns that metacognitive strategies should be taught in conjunction with specific subject content as pupils find it hard to transfer these generic tips to specific tasks.”

As with most EEF Guidance Reports, it translates the review of research into a manageable number of key recommendations which are also presented in poster form.



METACOGNITION AND SELF-REGULATED LEARNING

Summary of recommendations

1
Teachers should acquire the professional understanding and skills to develop their pupils' metacognitive knowledge

- Self-regulated learners are aware of their strengths and weaknesses, and can motivate themselves to engage in, and improve, their learning.
- Developing pupils' metacognitive knowledge of how they learn—their knowledge of **themselves as a learner**, and of **tasks**—is an effective way of improving pupil outcomes.
- Teachers should support pupils to **plan, monitor, and evaluate** their learning.

2
Explicitly teach pupils metacognitive strategies, including how to plan, monitor, and evaluate their learning

- Explicit instruction in cognitive and metacognitive strategies can improve pupil learning.
- While concepts like 'plan, monitor, evaluate' can be introduced generically, the strategies are most applied in relation to specific content and tasks, and are therefore best taught this way.
- A series of steps—beginning with **activating prior knowledge** and leading to **independent practice** before ending in **structured reflection**—can be applied to different subjects, ages and contents.

3
Model your own thinking to help pupils develop their metacognitive and cognitive skills

- Modelling by the teacher is a cornerstone of effective teaching; revealing the thought processes of an expert learner helps to develop pupils' metacognitive skills.
- Teachers should verbalise their metacognitive thinking ('What do I know about problems like this? What ways of solving them have I used before?') as they approach and work through a task.
- Scaffolded tasks, like worked examples, allow pupils to develop their metacognitive and cognitive skills without placing too many demands on their mental resources.

4
Set an appropriate level of challenge to develop pupils' self-regulation and metacognition

- Challenge is crucial to allow pupils to develop and progress their knowledge of tasks, strategies, and of themselves as learners.
- However, challenge needs to be at an appropriate level.
- Pupils must have the motivation to accept the challenge.
- Tasks should not overload pupils' cognitive processes, particularly when they are expected to apply new strategies.

5
Promote and develop metacognitive talk in the classroom

- As well as explicit instruction and modelling, classroom dialogue can be used to develop metacognitive skills.
- Pupil-to-pupil and pupil-teacher talk can help to build knowledge and understanding of cognitive and metacognitive strategies.
- However, dialogue needs to be purposeful, with teachers guiding and supporting the conversation to ensure it is challenging and builds on prior subject knowledge.

6
Explicitly teach pupils how to organise and effectively manage their learning independently

- Teachers should explicitly support pupils to develop independent learning skills.
- Carefully designed **guided practice**, with support gradually withdrawn as the pupil becomes proficient, can allow pupils to develop skills and strategies before applying them in **independent practice**.
- Pupils will need timely, effective feedback and strategies to be able to judge accurately how effectively they are learning.
- Teachers should also support pupils' motivation to undertake the learning tasks.

7
Schools should support teachers to develop knowledge of these approaches and expect them to be applied appropriately

- Develop teachers' knowledge and understanding through high quality professional development and resources.
- Senior leaders should provide teachers with time and support to make sure approaches are implemented consistently.
- Teachers can use tools such as 'traces' and observation to assess pupils' use of self-regulated learning skills.
- Metacognition shouldn't be an 'add-on' task for teachers to do but should be built into their teaching activities.

The seven recommendations, each expanded in its own section of the guidance, are:

- Teachers should acquire the professional understanding and skills to develop their pupils' metacognitive knowledge
- Explicitly teach pupils metacognitive strategies, including how to plan, monitor, and evaluate their learning

- Model your own thinking to help pupils develop their metacognitive and cognitive skills
- Set an appropriate level of challenge to develop pupils' self-regulation and metacognition
- Promote and develop metacognitive talk in the classroom
- Explicitly teach pupils how to organise, and effectively manage, their learning independently
- Schools should support teachers to develop their knowledge of these approaches and expect them to be applied appropriately

The Guidance Report is becoming more well known in schools, but what is more often overlooked are the support tools that accompany it on the EEF website.

The **first** of these is the **Whole School Audit Tool**, which can be used as part of an initial audit process to establish current practice, as well as in monitoring progress towards the development of more effective practice. It provides descriptors of Ineffective, Improving and Exemplary practice including those relating to teacher practice and associated pupil behaviours.

The **second** is a summary and activity based on the **Four Levels of Metacognitive Learner** (Perkins, 1992):

- Tacit
- Aware
- Strategic
- Reflective

This supports schools to identify the learning behaviours associated with each, and to establish those which are most characteristic of pupils who have well developed metacognitive skills.

The **third** supports schools in considering metacognition and self-regulation in the Early Years. It is a teacher assessment tool for independent learning behaviours, drawn from **'Developing Independent Learning in Children Aged 3 – 5'**, Anderson, Coltman, Page & Whitebread – University of Cambridge.

These tools can be downloaded by following the Metacognition and Self-regulated Learning link on the Guidance Reports home page, and scrolling down to the bottom of the page.

Link: [**Metacognition and Self-regulated Learning | EEF**](#)

There are of course synergies with the 2021 [**Teacher Feedback to Improve Pupil Learning**](#) EEF Guidance Report which was the subject of our [**24/11/21 Spotlight**](#), as it is through feedback that teachers scaffold for pupils information about their own learning, and strategies for improvement which increasingly move them towards independent self-regulation.