



EBOOK

HOW TO IMPROVE METACOGNITION IN THE CLASSROOM





Metacognition is an individual's ability to identify their current thought process and select helpful strategies to tackle challenges more effectively. It is often divided into three parts: before, during and after a task. Research suggests that Metacognition is one of the most effective and cost efficient ways to help students make gains in their learning.

Book a Metacognition Teacher CPD workshop

WHAT IS METACOGNITION?

The word “Metacognition” is derived from the Greek root word “meta” meaning “beyond” and the Latin word “cognoscere” meaning “getting to know”.

But along with more modern usage of the prefix “meta”, it is now more usually defined as “thinking about thinking”. Metacognition is the ability to reflect and critically analyse how you think. Essentially, it is best thought of as having self-awareness that enables individuals to monitor, reflect on and analyse their performance. Students who can do this are more likely to learn more efficiently, more effectively and therefore make more progress.

Research, much of which has been evaluated by the [Education Endowment Foundation](#), suggests that Metacognition is one of the most effective and cost-efficient ways to help students make gains in their learning.

Recommended reading:

- [What is Metacognition?](#)
- [Get started with Metacognition – Cambridge community](#)
- [4 misconceptions about Metacognition](#)

THE SCIENCE BEHIND METACOGNITION

The science behind Metacognition (especially in education) has been extensively researched as it covers a very broad area. Recent evidence suggests that it can add up to 7 months of [additional learning for students](#).

Metacognition can be enhanced by improving your ability to predict how well you will [perform on a task](#). Other [recent research](#) has found that reflecting on which study resources to use, why these resources are useful, and how you will use them improves Metacognition, self-reflection, emotional control and grades.

Recent research has revealed that [those with strong metacognitive abilities have more grey matter](#) in the part of the brain known as the anterior prefrontal cortex. Interestingly, the anterior prefrontal cortex, which plays a critical role in metacognitive abilities, is one of the few parts of the brain where we as humans show differences to our closest relatives, the great apes; therefore, it seems as though this ability to introspect may be unique to us.

Researchers still remain unsure as to whether the prefrontal cortex developed as individuals become better at introspection, or whether individuals who are better at introspection have greater development in this area in the first place. However, this does not mean that those with a lower functioning prefrontal cortex cannot demonstrate metacognitive abilities, as through practising the strategies highlighted below, everyone can improve.

Recommended reading:

- [Can you improve Metacognition quickly?](#)
- [Metacognition in schools – Perry, Lundie & Golder](#)
- [Metacognition & Self-Regulated Learning – EEF](#)

METACOGNITION IN SCHOOLS

Metacognition has become a particularly hot topic in education since the Sutton Trust Education Endowment Foundation Toolkit highlighted it as [one of the most cost-effective strategies](#) to help students improve their learning.

Being aware of this process and its impact on the cognitive development of children and young people can actively improve their abilities in a range of different subjects.

Developing metacognitive skills encourages independent learning, resilience and grit in children. This is because it helps students identify what does and doesn't work as well as helping them deduce what they would do differently next time if they experience a setback, failure, or make a mistake.

Recommended reading:

- [Improving Metacognition with Retrieval Practice](#)
- [Improving grades using Metacognition](#)
- [Teaching pupils how they learn boosts progress – TES](#)

HOW TO DEVELOP METACOGNITION IN YOUR CLASSROOM

Teachers can encourage the development of Metacognition in the classroom by giving students the opportunity to use metacognitive strategies at key stages of a task. This ensures that they improve both their self-awareness and ability to choose effective thought processes in the future.

One way to do this is to break down the strategies into the three stages: before a task, during a task and after a task. Coincidentally this approach is fairly similar to the “Plan, Do, Review” cycle that has been adopted by many high-performing sports teams.

Put simply, planning happens before a task, monitoring takes place during it, and reviewing occurs afterwards.

Planning before a task

Most people understand that preparation is key, but whether they know how to best prepare is another matter. Good preparation involves:

- Thinking about similar tasks
- Setting clear goals
- Working out how long a task may take to complete selecting appropriate strategies

This can help allocate your efforts more efficiently – [read more about the Planning part of the metacognitive process.](#)

Monitoring during a task

Students need to assess how they are progressing on a task, to ensure they are on the right path. This self-monitoring is made easier if they spend time on the Planning stage and know exactly what they want to be working towards. [Read more about the Doing part of the metacognitive process.](#)



Reviewing after a task

After completing a task, students should spend time reflecting on what went well and what they would do differently next time. This ensures that they are learning as much as possible from the experience and as such, are developing and improving.

[Read more about the Reviewing part of the metacognitive process.](#)

Recommended reading:

- [9 questions to improve Metacognition](#)
- [Metacognitive strategies](#)
- [England training strategy](#)

WHAT ARE METACOGNITIVE STRATEGIES?

Metacognitive strategies help improve students' learning by increasing their self-awareness and allowing them to select the appropriate strategy. Metacognitive strategies often fall into one of three categories: planning, monitoring and reviewing, which are representative of the different stages needed to successfully complete a given task.

Metacognition and goal setting

Setting and reviewing goals is one of the most significant ways that a student can make and monitor progress. This can be done by setting both short- and long-term goals, ensuring that they are both challenging and realistic, as well as placing a strong emphasis on skill development as well as on outcome.

Metacognition and feedback

Feedback can be one of the best ways to help someone improve their learning, yet research suggests that [38% of feedback interventions actually do more harm than good](#). Making feedback an integral part of the learning process is a key way to encourage Metacognition in the classroom. Teachers should create an environment in which students appreciate that feedback from the task at hand is not a judgement on who they are as a person.

As giving and receiving feedback is so important, we have written a lot of blogs on the subject. [This one](#) is probably the best place to start.

Recommended reading:

- [How to do goal setting right](#)
- [6 common mistakes when asking for feedback](#)
- [10 ways to give better feedback](#)

METACOGNITION AND SELF-QUESTIONING

Metacognition can be enhanced if students know how to talk to themselves in a helpful and constructive way. Asking yourself good questions is one way to encourage this.

[One fascinating study](#) looked at this by dividing participants into two groups. One group asked themselves questions (“Will I do well?”) whilst the other gave themselves declarations (“I will do well”). When these groups were then faced with a set of challenging anagrams, the group who had asked themselves questions answered significantly more than their peers in the other group.

So what are [the best questions to ask yourself](#)? Here are our top 5:

1. What do I need to do first?
2. Why is this true?
3. How can I get better?
4. Who can I ask for help?
5. Where do I do my best work?

Recommended reading:

- [What are the 5 best questions that students can ask themselves, and why?](#)
- [6 ways to improve how you talk to yourself](#)
- [11 ways to silence your inner critic – BBC](#)

METACOGNITION AND SELF-REFLECTION

Self-reflection enhances self-awareness, as it makes it easier to be able to monitor one's performance (which is a central tenet of Metacognition).

Benjamin Franklin reportedly kept a journal where he would reflect at the end of each day what he did well and what he could do better. This process made it easier for him to form more effective habits.

Evidence suggests that keeping a diary helps improve a range of factors which include, but are not limited to: self-awareness, ability to manage nerves, mental well-being and Metacognition. Diary-keeping helps people in all walks of life and it's a really easy way to improve your well-being. Just as Benjamin Franklin did, by writing down your targets, reflecting on how well they went or consciously trying to improve them for the next day, you give yourself the best chance of success.

Recommended reading:

- [6 reasons to keep a diary](#)
- [3 easy wins on Metacognition](#)
- [The surprising health benefits of journalling – Telegraph](#)

FAQ

What is Metacognition?

Metacognition is the ability to critically analyse and monitor the way we think. For students, this means evaluating their performance so that they can understand what caused their successes and failures.

How do I teach Metacognition in the classroom?

You can teach Metacognition by encouraging students to monitor and reflect on their performance. This will allow them to identify what they are doing well and what they can improve on. Once students have established this, they should be encouraged to set goals which motivate them to make these improvements.

What are some metacognitive strategies?

Some metacognitive strategies include:

- Setting yourself challenging but realistic goals.
- Asking yourself effective questions that require you to think deeply about the task.
- Monitoring your performance.
- Seeking feedback so you can replicate what works and avoid what doesn't.

Is Metacognition expensive?

No, not at all. Research by the Sutton Trust showed Metacognition to be one of the most effective but cheapest interventions schools can carry out, with students making on average 8 months additional progress. Improving Metacognition is cheap because it doesn't require the use of expensive materials.

FURTHER READING

Our main blogs on how to improve Metacognition in students can be found by clicking on these links:

- [What is Metacognition?](#)
- [9 Questions to Improve Metacognition](#)
- [Eight Ways to Develop Metacognitive skills](#)
- [Metacognitive Strategies](#)
- [Can you improve Metacognition Quickly](#)
- [Metacognition and Retrieval Practice](#)

And here are some of our favourite additional resources:

- [The Education Endowment Foundation's Metacognition overview](#)
- [How to Improve Metacognition and Why It Matters](#) from The Learning Scientists

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