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Developing metacognition

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Introduction

Self-regulation and metacognition are among the most downloaded elements of the EEF toolkit

Increasing interest, and yet:

A lot of interventions don't show any effects (Muijs et al, forthcoming)

A lot of schools implement poorly (Dignath & Buttner, 2017, De Smul et al, 2017; Muijs et al, forthcoming)

So our question is: why is this the case, and what can we do about it?

This project

Extended literature review

- Search process using keywords (e.g. self-regulation, metacognition) and expert knowledge
- All articles/reports quality ratings on
  - Methodological Transparency
  - Methodological Congruence
  - Methodological Robustness
- Articles ranked and questions from EEF answered, starting with highest quality ratings
- Analysis of publication bias

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What is metacognition?

You tell me…

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What is metacognition?

Part of self-regulated learning -

The extent to which learners are aware of:

their strengths and weaknesses,
the strategies they use to learn,
how they can motivate themselves to engage in learning, and
how they can develop strategies and tactics to enhance learning.

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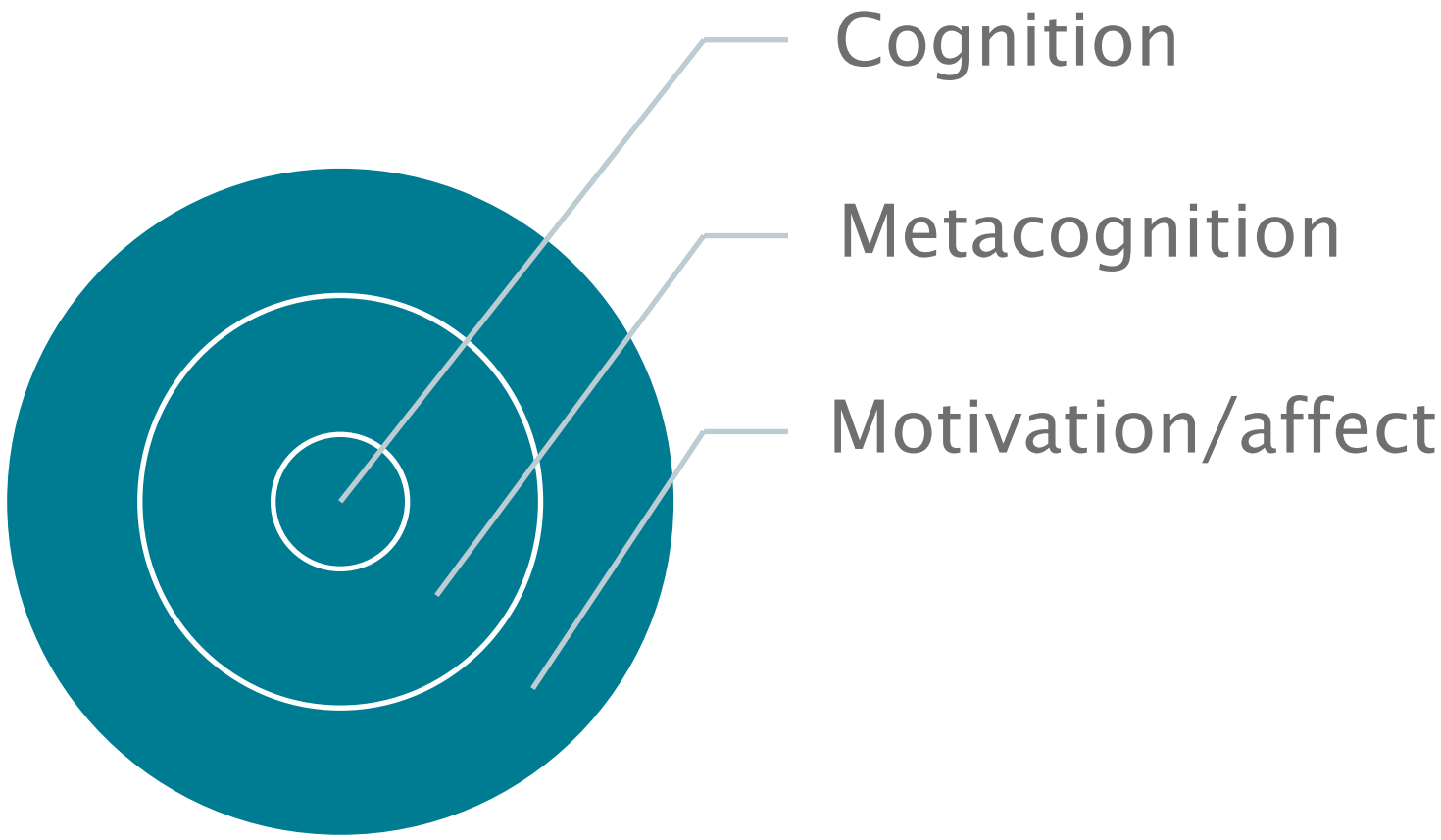
What is metacognition?



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Cognition

Information gathering

Memorisation

Understanding

Applying

What is metacognition?

Knowledge of cognition :

Knowledge about yourself as a learner

Knowledge about strategies and procedures such as reviewing, interleaving and selecting main ideas

Knowledge of why and when to use a particular strategy.

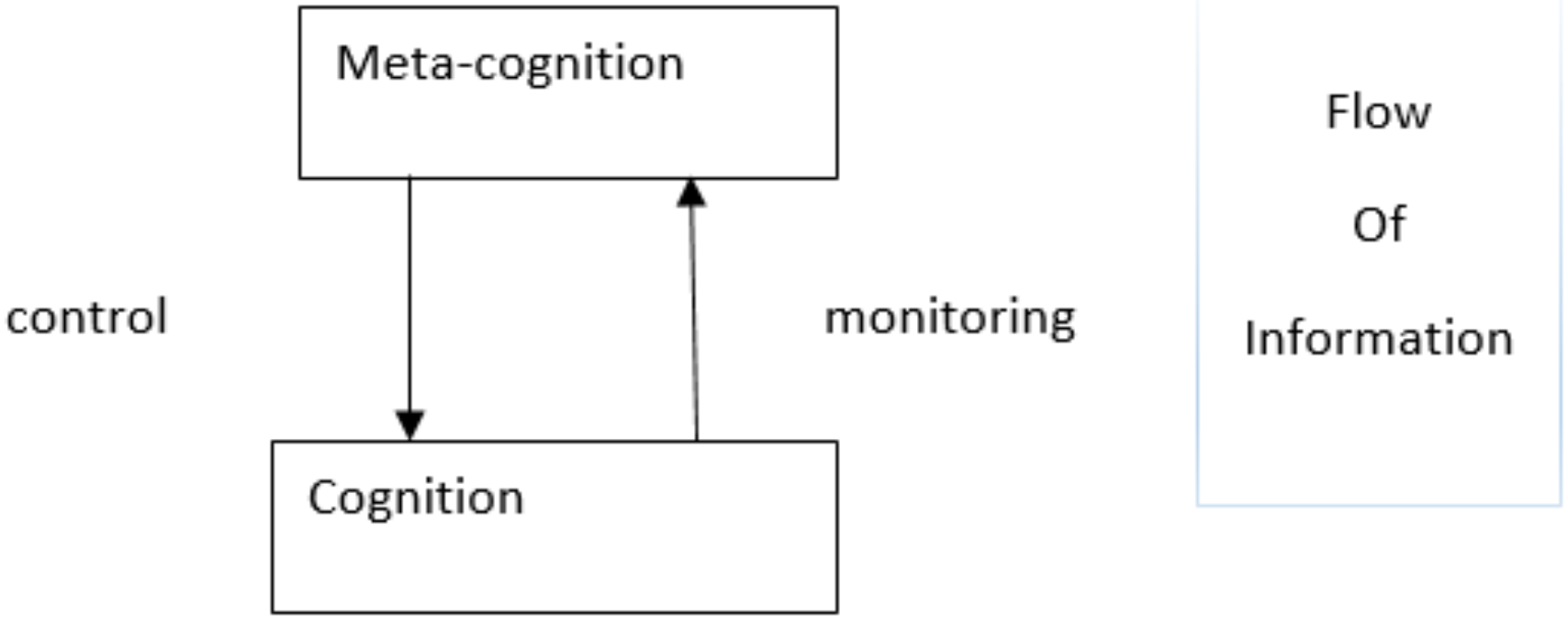
Regulation of cognition:

Planning e.g. activating relevant prior knowledge, selecting appropriate strategies, and the allocation of resources.

Monitoring e.g. self-testing

Evaluation

What is metacognition?



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One reason for poor implementation

It is a complex construct

Often poorly understood by teachers (Dignateh & Buttner, 2017)

So we need to build understanding, but this takes time! And effort.

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So how do we develop metacognition in pupils?

What do you think?

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So how do we develop metacognition in pupils?

A lot of misconceptions:

It's all about inquiry

We need separate lessons

It's all about 'higher order' thinking and problem solving

A generic skill divorced from knowledge

What research actually shows (Muijs et al, forthcoming)

Metacognition can be applied to all types of learning processes

Effective teaching has two components:

Explicit strategy instruction and modelling by the teacher

Guided practise and application by the pupil

Embedded in subject teaching

Built on strong subject knowledge

So a second issue for implementation and professional development is combatting misconceptions!

Explicit instruction

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Need to teach pupils specific strategies:

- *Planning strategies*, such as making a plan or deciding how much time to spend on an activity;
- *Monitoring strategies*, used to check understanding and learning during a task, for example through self-testing and questioning;
- *Evaluation strategies*, used to analyse performance (Shraw & Dennison, 1994).

Need to model working and problem-solving processes including metacognitive elements

Guided practise

Metacognition needs to become a skill learners can apply

This requires guided practise on more open-ended tasks

Dialogue and discussion to develop more conscious awareness of thinking around learning

What does this mean for CPD?

Need theory element to develop understanding of the concept

Need to work on misconceptions

Implementing metacognition

Evidence from EEF programmes on metacognition:

Extensive support for teachers, embedding takes time

Ongoing monitoring and support

Not one-off training but ongoing development

Good resources

Support from leadership

But: Too much intensity can lead to withdrawal and attrition

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What would this look like in your school?

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Conclusion

Metacognition is a promising strategy

But complex, so often poorly understood and implemented

- Need to understand theory
- Need to combat misperceptions

Successful implementation requires CPD strategy