What You Really Need to Know About Metacognition

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Teacher Educator

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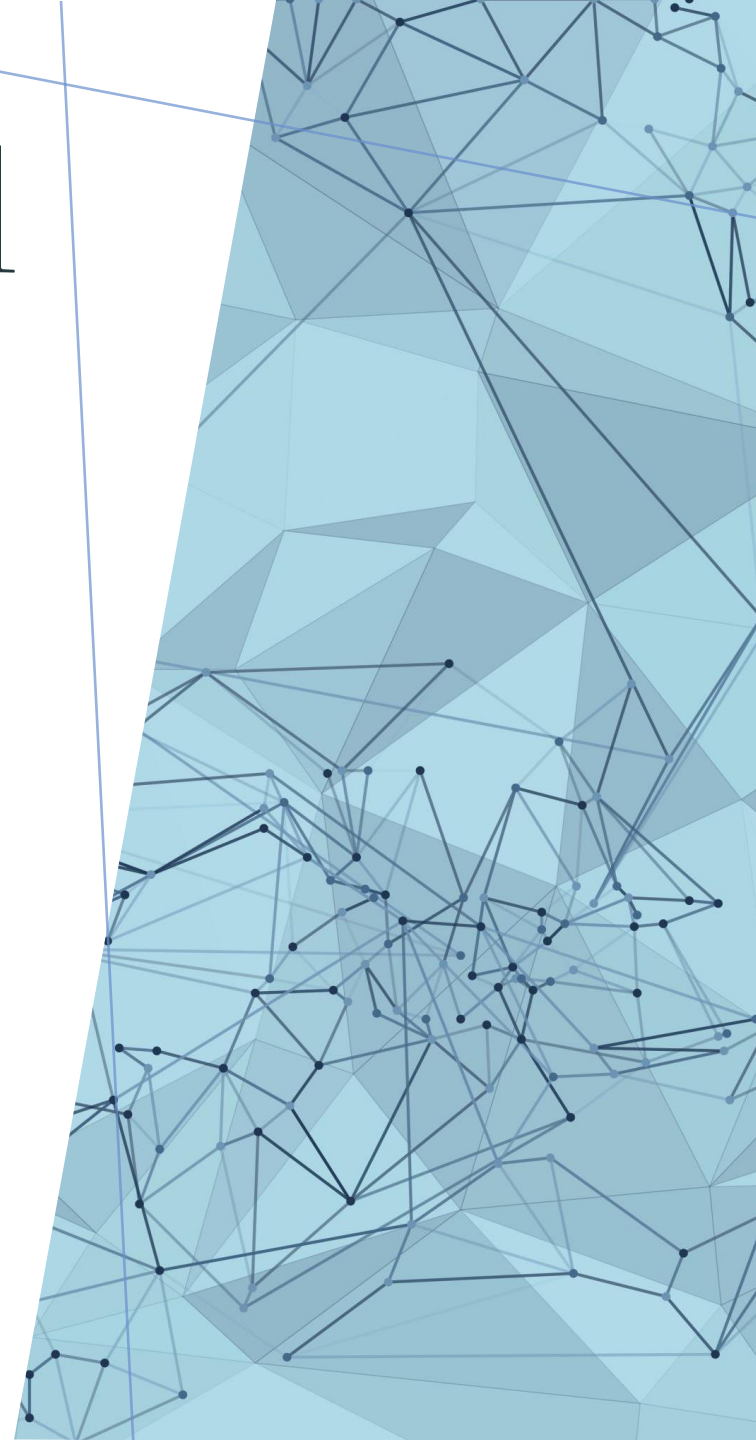

Who Am I?

- Nathan Burns
- Former Head of Maths/Pastoral Lead/MAT Lead
- Metacognitive researcher and author
- Full time teacher educator

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Think and Write...

Why does metacognition matter?

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Why Metacognition? The Headlines...

- Greatest positive attainment impact of any intervention (EEF, 2018; 2025)
- OFSTED (2018) suggested area of focus for high-quality CPD
- **Benefits ALL students (regardless of: socio-economic status; prior attainment; sex; behaviour; SEN status; age) (many, many papers...)**

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Anything Else?

- Works across phases (i.e. can be a focus for all)
- Works across curriculum areas (i.e. can be a whole school focus)
- Develops problem solving skills
- Improve skill transference across contexts
- Increases revision effectiveness
- **Compliments whole school work around feedback, modelling, questioning (and more...)**

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Think and Write...

What is metacognition?

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What Metacognition Isn't?

- Metacognition is not the same as self-regulation
- Self-regulation is an umbrella that cover learning habits AND behaviours

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What Is Metacognition Then?

- Flavell (1976): 'I am being metacognitive if I notice that I am having more trouble learning A than B; if it strikes me that I should double check C before accepting it as fact'
- Burns (2023): '[Metacognition is] the little voice inside your head that constantly evaluates and informs your decisions.

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Why Is It So Difficult?

- It's invisible
- There are complexities to the theory
- It is reliant on cognition and motivation (i.e. it is not a standalone strategy or pedagogy)

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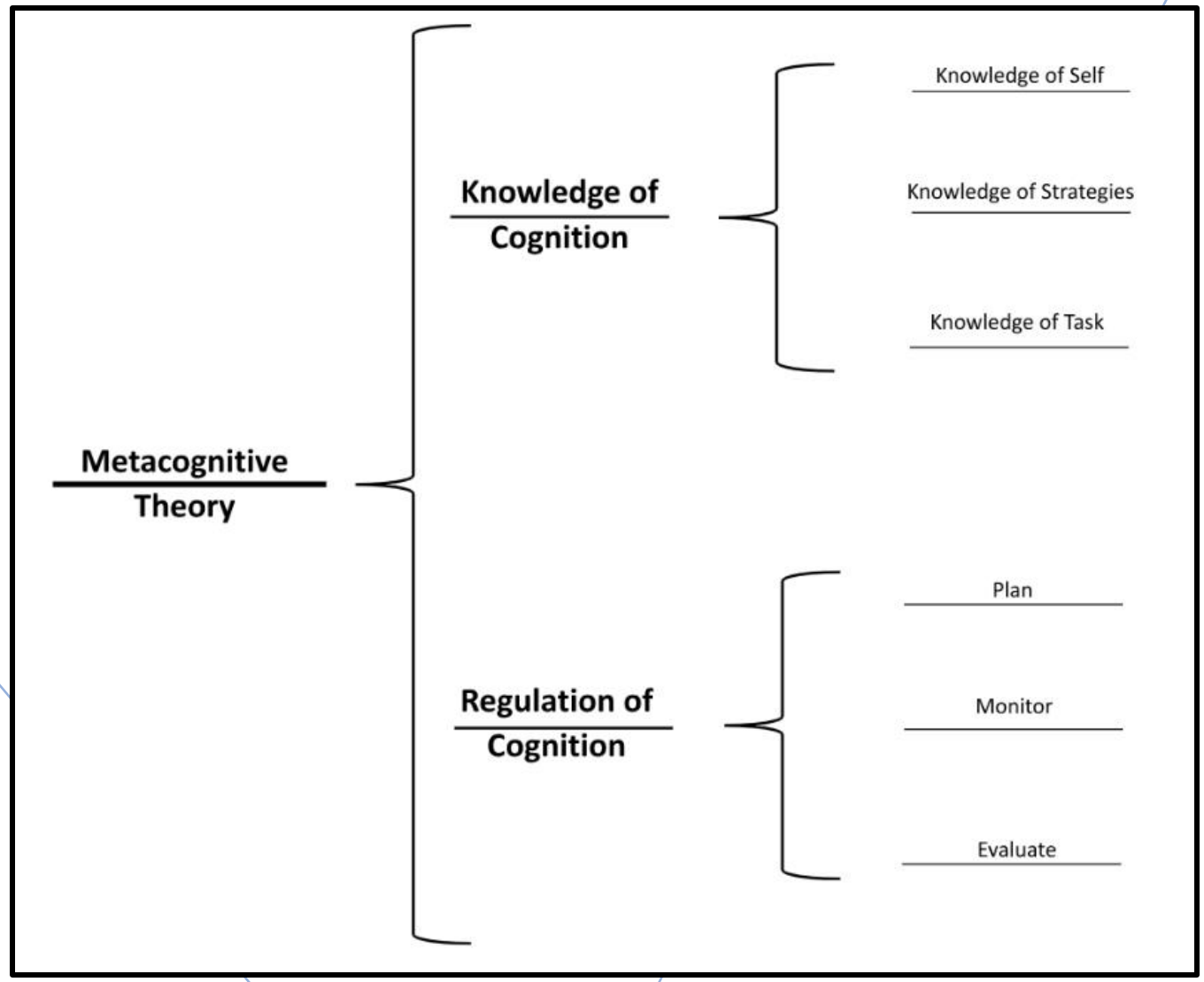

Knowledge Vs Regulation

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Knowledge Of Cognition

- Knowledge of task – knowledge of requirements to meet to fulfill task criteria
- Knowledge of self – knowledge of... knowledge
- Knowledge of strategies – knowledge of methods available to attempt a cognitive task

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Regulation Of Cognition

- Planning – an approach for the task
- Monitoring – staying on track for successful task completion
- Evaluation – review of the efficiency and effectiveness of approach and outcomes

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Levels Of Metacognition

- Metacognition is not a dichotomy
- We have Perkins' (1992) 4 levels: tacit; aware; strategic; reflective

Tacit – not aware of control of cognitive processes

Aware – aware of cognitive processes but don't actively engage with them

Strategic – begin to plan and evaluate cognitive action

Reflective – plan, monitor and evaluate cognitive action

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Translating Metacognitive Abilities

- Metacognitive abilities hinge upon cognition (*note, meta!)*
- Where cognitive function varies, so will the metacognitive evaluation
  - Thus, metacognitive abilities may fluctuate within a subject
  - Thus, metacognitive abilities can fluctuate between subjects

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Myths Of Metacognition (1)

Metacognition is only for high-attaining students

- Metacognition reliant on cognition – so more able are more metacognitive?
- Don't want to overload students?
- Don't believe they're capable?

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Myths Of Metacognition (2)

Metacognition is not for students with SEN

- Metacognition too complicated?
- Too many steps/stages or fear of overload?
- Don't believe they're capable?

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Myths Of Metacognition (3)

Metacognition is only for older students

- Older students have greater cognition?
- It's something complicated so you need to be older to understand it?

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Myths Of Metacognition (4)

Metacognition is only for girls

- Girls are academically better?
- Students are more studious?
- Girls make better notes?

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Developing Metacognitive Skills

- Metacognitive development must be within the context of content
- Metacognition needs to be development within the wider curriculum
- Metacognition needs to be embedded – not a bolt-on or an enrichment opportunity
- Metacognition should not be taught as a discrete lesson

But

- Metacognitive strategies ought to be taught explicitly within the context of content

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Key Takeaways

- Theory is crucial to supporting improved implementation
- Metacognition is the constant process of plan, monitor and evaluate
- Knowledge of task, self and strategies are crucial to supporting this
- Metacognitive skills have weak transfer power
- Myths around suitability for students – but all can (and should) benefit

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