

Metacognition: What students should know about it and why you should teach them – Helen Reynolds

What	Content	Resources
Why bother?	- The 'impact' of teachers and students knowing about metacognition is HUGE, equating to 8 months additional learning per year. - In a lot of studies students self-report using the Metacognitive Awareness Inventory MAI – you can use it too!	Education Endowment Foundation Report:   Metacognitive Awareness Inventory (MAI)
What/when?	Schraw, G., & Moshman, D. (1995). Metacognitive theories <u>Useful distinction 1:</u> Knowledge vs Regulation <u>Useful distinctions 2:</u> What is Metacognitive Knowledge : Declarative knowledge: knowledge about the how we learn, yourself, strategies Procedural knowledge: knowledge how to best perform those strategies Conditional knowledge: knowledge about when and why to use a strategy What is Metacognitive Regulation: Planning, Monitoring/Controlling, Evaluating – but you need to know!!	
How?	Metacognitive Knowledge: Declarative: - I teach them about learning, memory, forgetting, meaning making and retrieval practice (SLOP), spaced practice Procedural: - How to make the most of strategies, talk through in real time, model doing that way in class Conditional: - Model by having regular short quizzes about everything important, ask about things from a while ago, talk about how to planning using metacognitive knowledge.	Efrat Furst: Daniel Willingham Olicav    Monkey puzzle illusion Teenage brain , for kids   

Lenses

- To **'see it like I see it'** is why we are here

- The '**curse of the expert**' is a real thing
- Novices are **not** little experts; they learn differently.
- Working memory is **limited**; load it wisely; Long-term memory is **infinite**.
- Learning involves a **change to a learner's long-term memory**
- Having a **model of memory** and learning (Willingham) is extremely helpful if you are trying to learn anything as it helps you choose **strategies that are likely to work well**.

References:

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11. Siegel, D. J. (2013). *Brainstorm: The power and purpose of the teenage brain*. TarcherPerigee.

Website:

<https://itslearningcurve.education/>

- This presentation and handout
- Strategies for using cogsci in the classroom
- Cogsci reading list
- All my book summaries!



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Search

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Welcome to It's A Learning Curve!

As a teacher, it's been a learning curve to move from the UK to the US. Simultaneously, it's been a learning curve to bring the findings of cognitive science/the science of learning into my classroom on a daily basis.

I have learned a lot. I can now look at the UK and the US education systems in terms of physics and cognitive science from the Mid-Atlantic, somewhere between Oxford and Tucson.



Here you'll find:
- for students... how to get help with learning physics and how to study successfully
- for teachers... help with teaching physics AND using cognitive science in the classroom
- for parents... help with helping your children to learn using cognitive science
- for everyone... the view from the Mid-Atlantic... blog about the UK/US educational differences.

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