



THE IMPORTANCE OF TEACHER ENGAGEMENT WITH RESEARCH

Presented by:

Cat Scutt
Director of Education and Research
Chartered College of Teaching



CHARTERED
COLLEGE OF
TEACHING

Let's start with a quiz!



Some of us are left-brained and
some of us are right-brained

True or False?

Some of us are left-brained and
some of us are right-brained

True or False?

Is self-quizzing on a chapter you have read more effective, less effective, or about as effective as re-reading the chapter?

- A) More effective
- B) Less effective
- C) About as effective

Is self-quizzing on a chapter you have read more effective, less effective, or about as effective as re-reading the chapter?

- A) More effective
- B) Less effective
- C) About as effective

Only 31% of
respondents got
this right!

Is reading something and highlighting sentences and vocabulary words in reading materials and re-reading them later more effective, less effective, or about as effective as reading something then writing everything one knows about the topic on a blank sheet of paper?

- A) More effective
- B) Less effective
- C) About as effective

Is reading something and highlighting sentences and vocabulary words in reading materials and re-reading them later more effective, less effective, or about as effective as reading something then writing everything one knows about the topic on a blank sheet of paper?

A) More effective

B) Less effective

C) About as effective

Teenagers have different body
clocks to adults

True or False?

Teenagers have different body
clocks to adults

True or False?

Is “interleaving” problem types with each other (e.g., students solve a division problem, then a multiplication problem, etc) more effective, less effective, or about as effective as giving them “blocked” practice (e.g., students solve a bunch of division problems, then a bunch of multiplication problems)?

- A) More effective
- B) Less effective
- C) About as effective

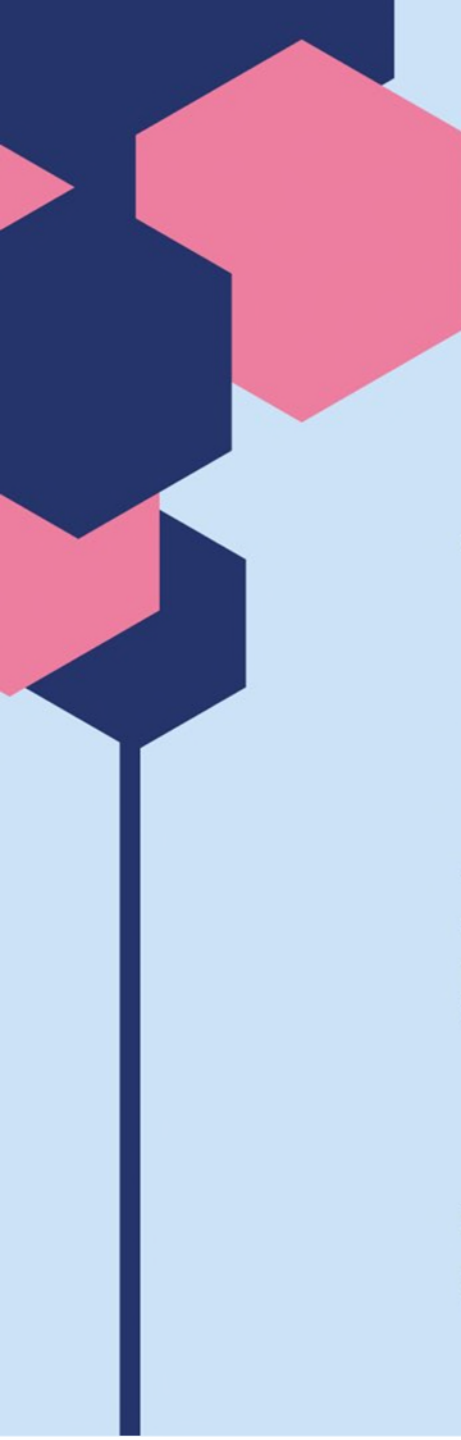
Is “interleaving” problem types with each other (e.g., students solve a division problem, then a multiplication problem, etc) more effective, less effective, or about as effective as giving them “blocked” practice (e.g., students solve a bunch of division problems, then a bunch of multiplication problems)?

- A) More effective
- B) Less effective
- C) About as effective

*Only 20% of
respondents got
this right!*


Some reflections

- Does belief in 'neuromyths' affect teaching?
- What pupils believe about how they learn matters too!
- Engaging with evidence can help us to refine (and understand) our practice
- ... but it doesn't tell us everything



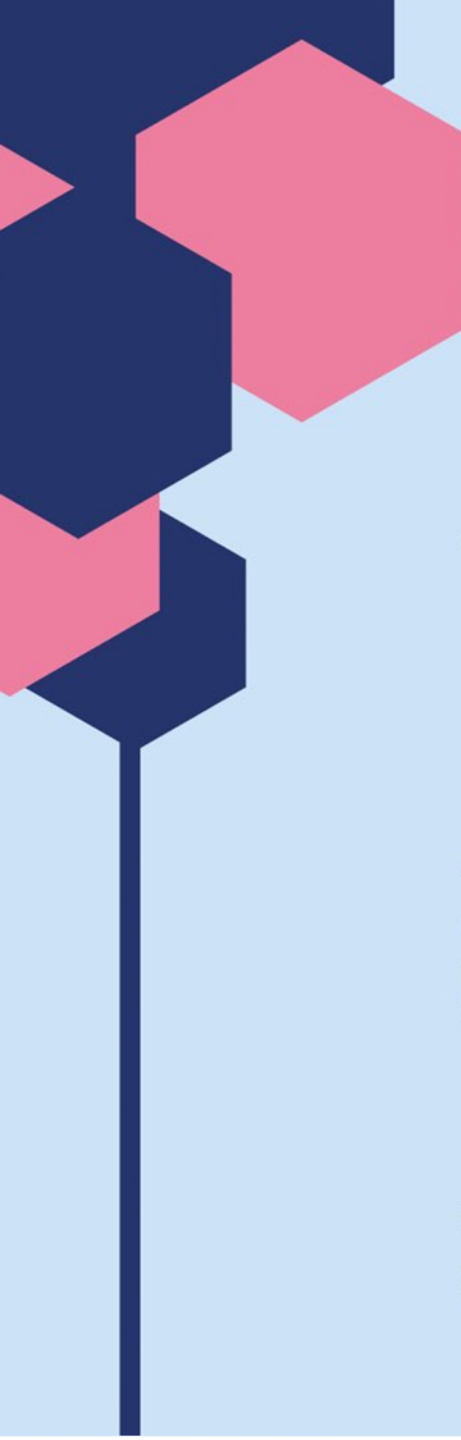
“There is a large body of research on how important teachers are to the academic outcomes of their pupils... [They] are the most important factor within schools that policy makers can directly affect to improve student achievement”

(Sutton Trust, 2011)



“The effects of high-quality teaching are especially large for pupils from disadvantaged backgrounds, who gain an extra year’s worth of learning under very effective teachers compared to poorly performing teachers”

(Sutton Trust, 2011)

- 
- What's your response to this (imaginary) newspaper headline? What would you want to know?

Research shows starting a class by building a paper aeroplane is beneficial



What measures were used? What does it ‘benefit’?

What was the methodology? Is it a one-off study, or has it been replicated?

Who was the research done with?

What does this look like in practice? What were the ‘active ingredients’?

How effective was it compared to the time taken?



Dylan Wiliam
@dylanwiliam



Increased use of student-centered teaching methods is linked to increased student wellbeing but lower achievement, which in turn, link to increased adult life satisfaction, but lower earnings—the "achievement-wellbeing tradeoff", discussed by [@CfEdnEcon](#):
bit.ly/2Dlx2px

12:37 pm · 14 Nov 2018 from Florida, USA · Twitter Web Client

291 Retweets **505** Likes

Understanding 'effectiveness' and 'impact'

Teaching and Learning Toolkit

An accessible summary of the international evidence on teaching 5-16 year-olds

Filter Toolkit

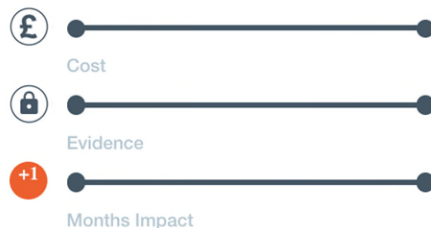
Toolkit Strand ^

Cost v

Evidence Strength ^

Impact (months) ^

Filter results by keywords



Download Toolkit

Arts participation

Low impact for low cost, based on moderate evidence.



+2

Aspiration interventions

Very low or no impact for moderate cost, based on very limited evidence.



0

Behaviour interventions

Moderate impact for moderate cost, based on extensive evidence.



+3

Block scheduling

Very low or no impact for very low cost, based on limited evidence.



0



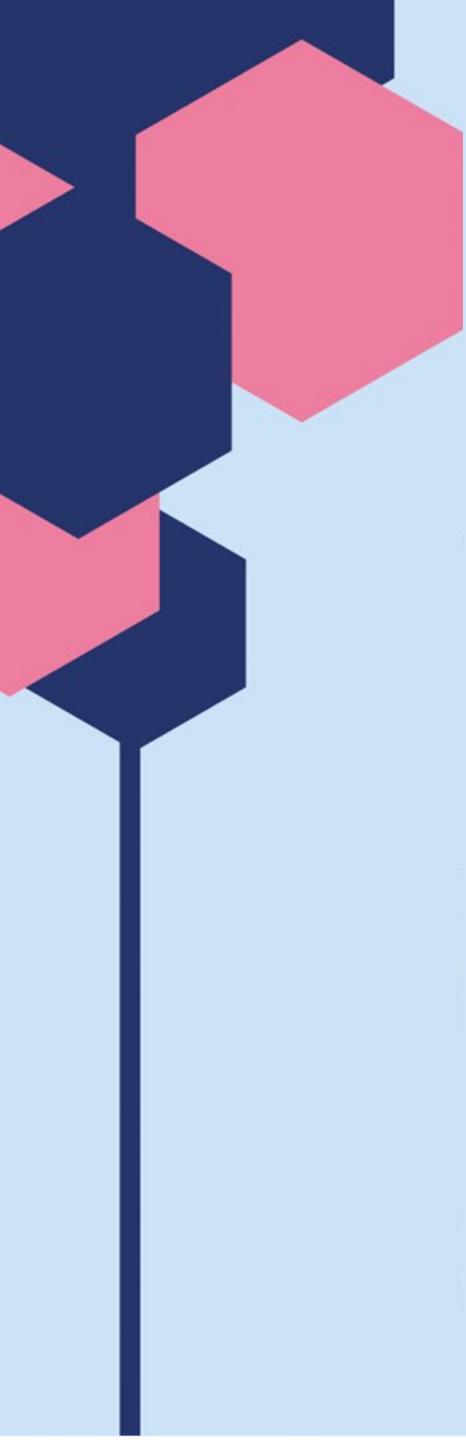
What measures were used? What does it 'benefit'?

What was the methodology? Is it a one-off study, or has it been replicated?

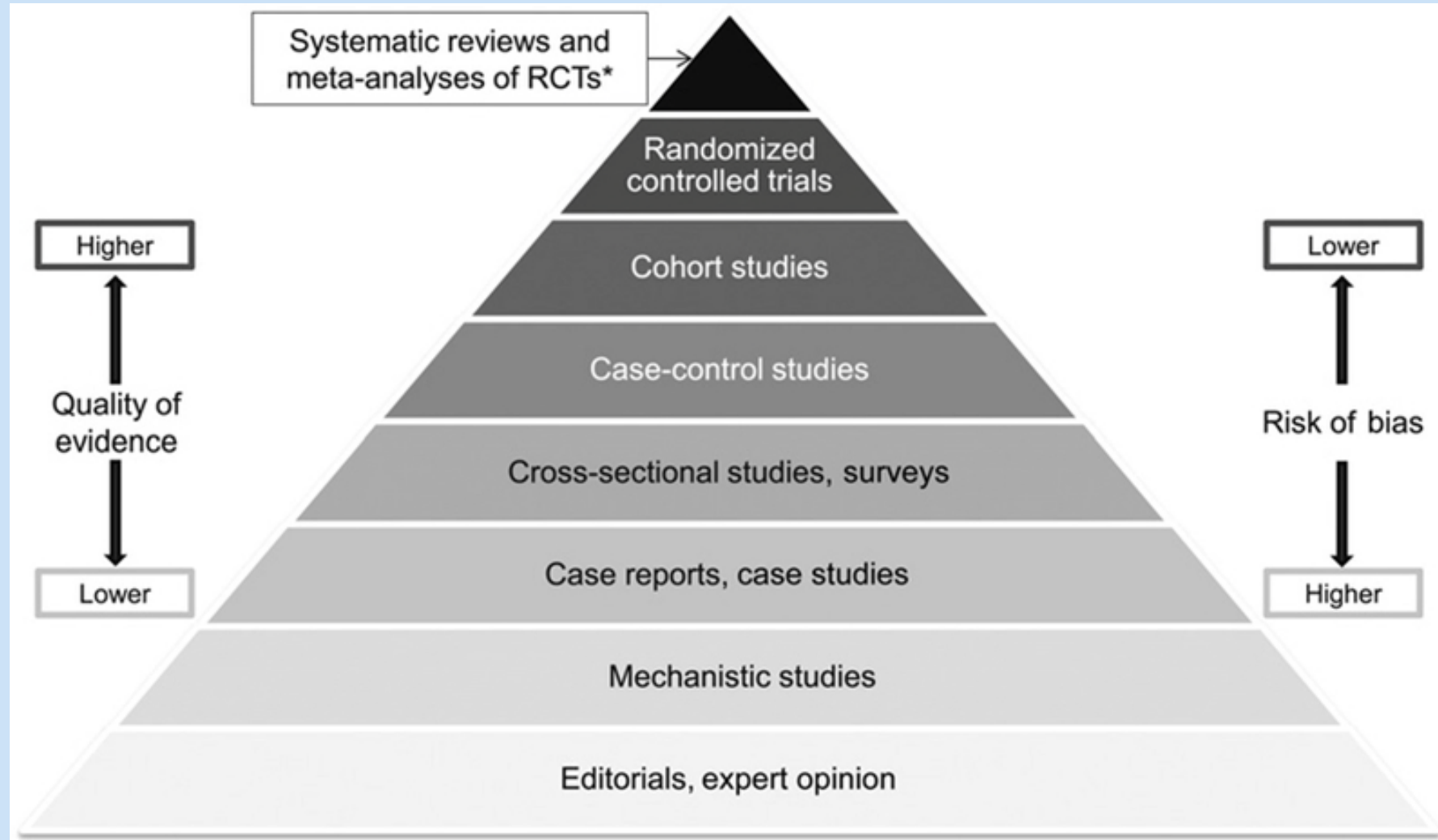
Who was the research done with?

What does this look like in practice? What were the 'active ingredients'?

How effective was it compared to the time taken?










A hierarchy of evidence

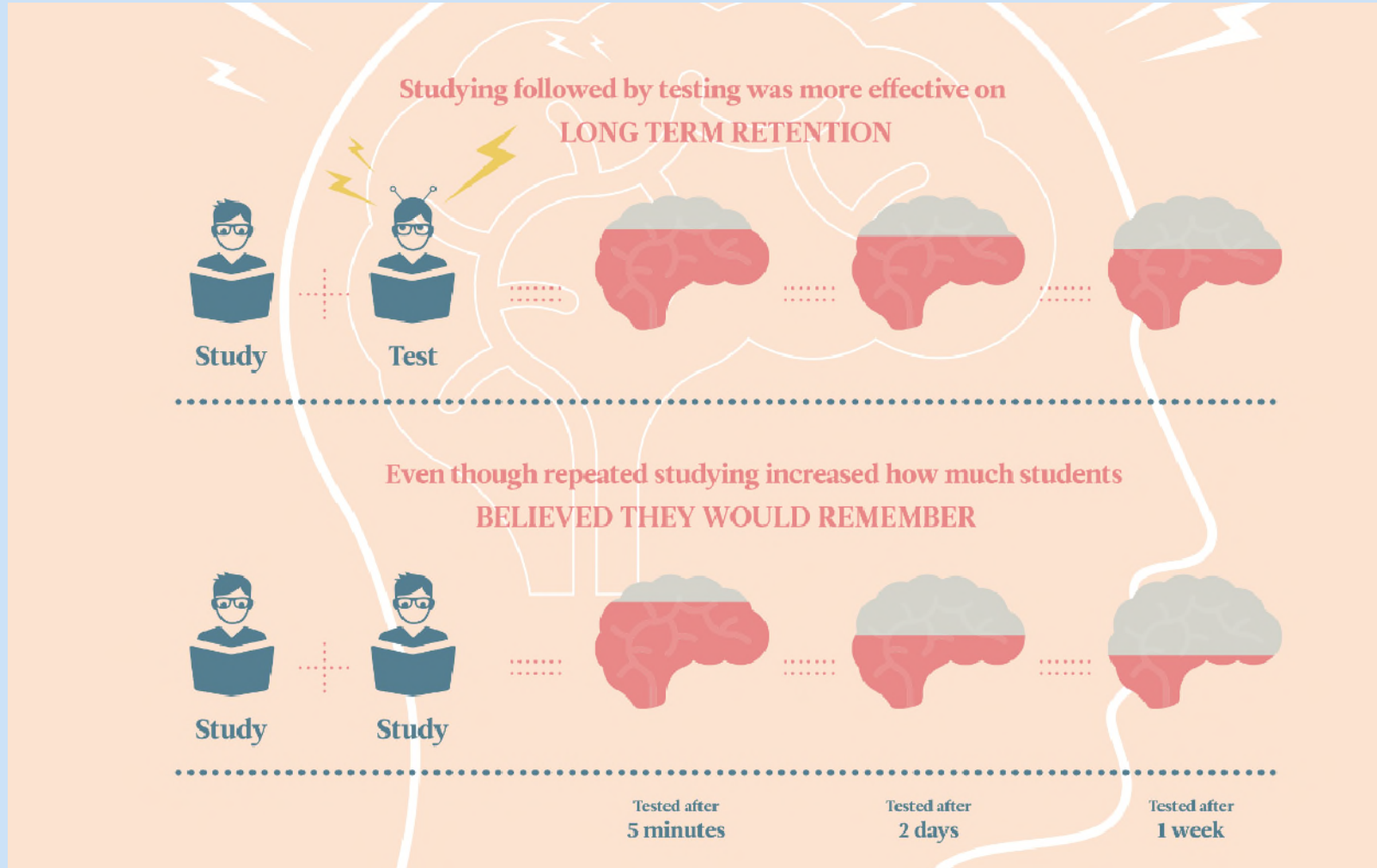


A hierarchy of evidence

EEF, 2017 (on Twitter)

DfE Evidence Hierarchy	
Indicative strength	Type of evidence
	<ul style="list-style-type: none">• Meta-analysis or systematic review - analysis and summary across many individual evaluations
	<ul style="list-style-type: none">• Matched-comparison design or a randomised controlled trial – tests intervention against a comparison grp
	<ul style="list-style-type: none">• Sound theory backed by a growing body of empirical research & may cite DfE policy / White paper
	<ul style="list-style-type: none">• Independent research / evaluation – uses surveys, data analysis, monitoring, interviews, observations, focus groups, etc
	<ul style="list-style-type: none">• Internal / in-house evaluation. Not independently evaluated• - inc. case studies, observation, interviews, MI
	<ul style="list-style-type: none">• Expert opinion / advice from consultants, academics or sector grp
	<ul style="list-style-type: none">• Media articles / anecdotal reports and interest groups

Can we trust self-report?



Impact, 2017, based on Roediger and Karpicke

Judging the robustness of research

That's a claim!

Key Concepts for thinking critically about educational claims

BEWARE of claims **THINK 'FAIR'** about the evidence **TAKE CARE** when you decide

<p>BEWARE Negative side effects</p> <p>Many effects are likely to be negative, and the benefits of an intervention may be outweighed by the costs.</p>	<p>BEWARE Dramatic effects</p> <p>Effects reported to be dramatic, or of a kind that is not typical, are often exaggerated.</p>	<p>BEWARE Certainty</p> <p>For a claim to be certain, the evidence must be strong and consistent. Beware of claims that are based on a single study or a small number of studies.</p>	<p>BEWARE Explanations are not enough</p> <p>An explanation of how an intervention works is not enough. It must be supported by evidence that it actually works.</p>	<p>BEWARE Big data</p> <p>Large data sets can be misleading. They may be biased or incomplete, and they may not be representative of the population.</p>	<p>BEWARE Causation</p> <p>The fact that a variable is correlated with an intervention does not mean that the intervention caused the variable.</p>	<p>BEWARE Comparison groups</p> <p>People in the comparison group may be different from those in the intervention group.</p>	<p>BEWARE Indirect comparisons</p> <p>There are many different ways to compare an intervention to a comparison group. Beware of indirect comparisons.</p>	<p>BEWARE Equal treatment</p> <p>Even if the intervention and comparison groups are treated equally, the intervention may still be better.</p>	<p>BEWARE Similar measurement of outcomes</p> <p>Outcomes must be measured in the same way in both groups.</p>	<p>BEWARE Reliable assessment of outcomes</p> <p>Outcomes must be measured in a way that is reliable and valid.</p>	<p>BEWARE Follow-up</p> <p>It is important to know how long the effects of an intervention last.</p>	<p>BEWARE Practicality</p> <p>The results of an intervention may not be practical in real life.</p>	<p>BEWARE Context</p> <p>The results of an intervention may be different in different contexts.</p>	
<p>BEWARE Common practice</p> <p>What is common practice is not necessarily the best practice.</p>	<p>BEWARE Comparison groups</p> <p>Comparison groups may be different from the intervention group.</p>	<p>BEWARE All relevant evidence</p> <p>The results of all relevant evidence should be considered.</p>	<p>BEWARE Statistical significance</p> <p>Statistical significance does not mean that an intervention is better.</p>	<p>BEWARE No evidence of difference</p> <p>The fact that there is no evidence of difference does not mean that an intervention is not better.</p>	<p>BEWARE Verbal descriptions</p> <p>Verbal descriptions of an intervention may be misleading.</p>	<p>BEWARE Small studies</p> <p>Small studies are more likely to be biased and less reliable.</p>	<p>BEWARE Original groups</p> <p>Original groups may be different from the comparison group.</p>	<p>BEWARE Circumstances</p> <p>The results of an intervention may be different in different circumstances.</p>	<p>BEWARE Advantages vs Disadvantages</p> <p>The advantages and disadvantages of an intervention should be compared.</p>	<p>BEWARE Confidence in the evidence</p> <p>The confidence in the evidence should be based on the strength of the evidence.</p>	<p>BEWARE Underreporting</p> <p>Unpublished results of an intervention may be different from those that are published.</p>	<p>BEWARE Confidence intervals</p> <p>Confidence intervals should be used to estimate the effect of an intervention.</p>	<p>BEWARE Peer review and publication</p> <p>Peer review and publication do not guarantee the quality of an intervention.</p>	<p>BEWARE Systematic reviews</p> <p>Systematic reviews are more reliable than individual studies.</p>

BEWARE of claims that have a bad basis

Many claims about the effects of interventions are not trustworthy. Often this is because the reason (the basis) for the claim is not trustworthy. You should be careful when you hear claims that are:

- Too good to be true
- Based on faulty logic
- Based on trust alone

THINK 'FAIR' - and check the evidence from intervention comparisons

Evidence from comparisons of interventions can be misleading. You should think carefully about the evidence that is used to support claims about the effects of interventions.

Look out for:

- Unfair comparisons of interventions
- Uncareful summaries of comparisons
- How intervention effects are described

TAKE CARE and make good choices

Good educational choices depend on thinking carefully about what to do.

Think carefully about:

- What your problem is and what your options are
- Whether the evidence is relevant to your problem and options
- Whether the advantages outweigh the disadvantages

www.thatsclaim.org/educational

Judging the quality and trustworthiness of research

Introduction to research

Gary Jones and Deborah Netolicky

- Are the methods used suitable for the research aims?
- To what extent are the claims made supported by others' work?

for which - resources - be it staff, time, expertise and finance - are available?

Actionable

- Does the research specify causal



And a few more things to think about...

- Where was it published?
- Is it a peer-reviewed source?
- Who funded the work?
- Who carried it out?



What measures were used? What does it ‘benefit’?

What was the methodology? Is it a one-off study, or has it been replicated?

Who was the research done with?

What does this look like in practice? What were the ‘active ingredients’?

How effective was it compared to the time taken?

Context matters

Why teaching will never be a
research-based profession
and why that's a Good Thing


Dylan Wiliam (@dylanwiliam)

1

www.dylanwiliam.net

FIGURE 1:
EVIDENCE-INFORMED PRACTICE





What measures were used? What does it ‘benefit’?

What was the methodology? Is it a one-off study, or has it been replicated?

Who was the research done with?

What does this look like in practice? What were the ‘active ingredients’?

How effective was it compared to the time taken?

The Bananarama Effect - Steve Higgins

*“It ain’t what you do,
it’s the way that you do it,
That’s what gets results.”*



Eton Mess - Stephen Lockyer



Cat Scutt @CatScutt · Jun 22

.@mrlockyer suggests meta-analysis can be akin to putting a strawberry pavlova in a blender; context, texture & detail lost #EducationFest



LETHAL MUTATION...





What measures were used? What does it ‘benefit’?

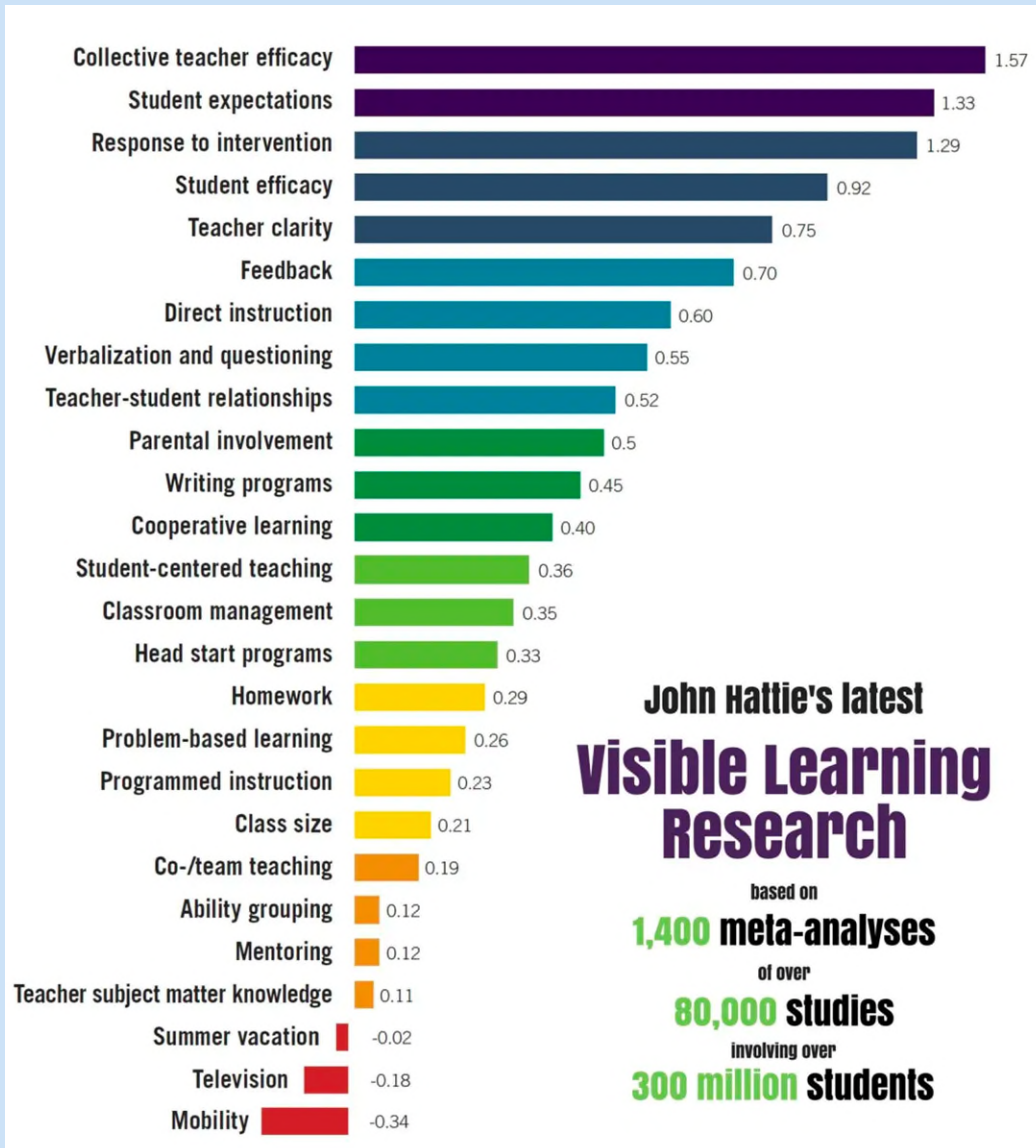
What was the methodology? Is it a one-off study, or has it been replicated?

Who was the research done with?

What does this look like in practice? What were the ‘active ingredients’?

How effective was it compared to the time taken?


Effectiveness and Efficiency





- 
- On the flip side...

No evidence that starting a class by building a paper aeroplane helps learning



Has no research been done, so we don't know?

Has research been done and is inconclusive?

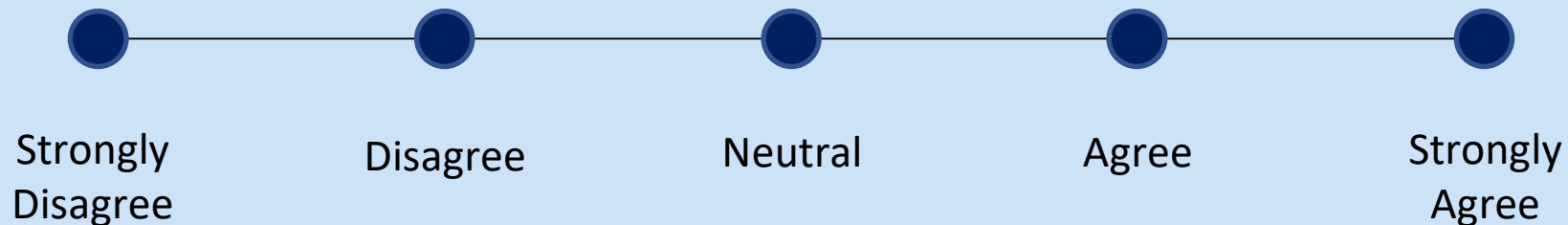
Has research been done and found it doesn't make any difference?

Has research been done and found it negatively affects learning?

Why did anyone think it **WOULD** work?



You can find research to back up any opinion



Recognising Biases

- Confirmation bias
- Publication bias

How you can dampen the effects of publication bias



BAZ RAMAIAH
Teacher success manager, Teacher Booker

Sun 23rd Jun 2019, 5:00



“Tell people about any studies with a negative finding”



WHERE ARE WE AT WITH EVIDENCE-INFORMED TEACHING?

Teachers' engagement with research: what do we know? A research briefing

- research evidence still has only a small influence on teachers' decision-making relative to other sources
- teachers were most likely to draw on their own expertise, or that of their colleagues, when making decisions about teaching and learning or whole-school change.

Teachers were, on average, willing to engage with research evidence, and reported that their school climates were supportive of evidence use. However, it appears that this willingness, and those positive climates, were not yet consistently translating into evidence-informed decision-making across schools in England.




Department
for Education

Evidence-informed teaching: an evaluation of progress in England

Research report

July 2017

**Mike Coldwell¹, Toby Greany², Steve Higgins³,
Chris Brown², Bronwen Maxwell¹, Bernadette
Stiell¹, Louise Stoll², Ben Willis¹ and Helen
Burns³**



Evidence-
informed
professional
learning

Support and
promotion of
evidence-
engagement

Evidence-informed school leadership

Wider
education
system

Evidence-
informed
professional
learning

Support and
promotion of
evidence-
engagement

Evidence-informed school leadership



Top down vs bottom up



Neuromyths in education: Prevalence and predictors of misconceptions among teachers

Sanne Dekker^{1*}, Nikki C. Lee¹, Paul Howard-Jones² and Jelle Jolles¹

¹Department of Educational Neuroscience, Faculty of Psychology and Education, LEARN! Institute, VU University Amsterdam, Amsterdam, Netherlands

²Graduate School of Education, University of Bristol, Bristol, UK



References

High Expectations (Standard 1– Set high expectations)

[Further reading recommendations are indicated with an asterisk.]

Aronson, J. (Ed.) (2002) *Improving academic achievement: Impact of psychological factors on education*. New York: Academic Press.

Bandura, A. (1986) *Social foundations of thought and action: a social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Campbell Collaboration (2018) School-based interventions for reducing disciplinary school exclusion: A Systematic Review. Accessible from: <https://campbellcollaboration.org/library/reducing-school-exclusion-school-based-interventions.html>.

Chapman, R. L., Buckley, L., & Sheehan, M. (2013) School-Based Programs for Increasing Connectedness and Reducing Risk Behavior: A Systematic Review, 25(1), 95–114.

Chetty, R., Friedman, J. N., Rockoff, J. E. (2014) Measuring the Impacts of Teachers II: Teacher Value-Added and Student Outcomes in Adulthood. *American Economic Review*, 104(9), 2633–2679. <https://doi.org/10.1257/aer.104.9.2633>.

*Education Endowment Foundation (2018) Sutton Trust-Education Endowment Foundation Teaching and Learning Toolkit: Accessible from: <https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit> [retrieved 10 October 2018].

Hanushek, E. (1992) The Trade-off between Child Quantity and Quality. *Journal of Political Economy*, 100(4), 859–887.

LETHAL MUTATION...



FIGURE 1:
EVIDENCE-INFORMED PRACTICE





THE CHARTERED COLLEGE OF TEACHING

Your Professional Body

We celebrate, support and connect teachers to provide world-class education benefiting pupils and society.

Together we will raise the status of the teaching profession.

THE EARLY CAREER HUB

The screenshot displays the 'My College Early Career Hub' website. At the top left, the logo 'My College.' is followed by 'Early Career Hub'. Navigation links for 'Support', 'Learning', and 'Chartered College' are visible. A user profile 'Howdy, Cat Scutt' is shown in the top right. A search bar is located on the right side of the main content area. The central focus is a red banner with the text 'First time here?' and a 'Click Here' button. Below the banner are three small dots, indicating a carousel of slides.

My College.
Early Career Hub

Support ▾ Learning ▾ Chartered College ▾

Howdy, Cat Scutt

Cat Scutt ▾

CHARTERED COLLEGE OF TEACHING

The Chartered College of Teaching's hub for student teachers, Newly Qualified Teachers and those involved in supporting and developing them.

Search...

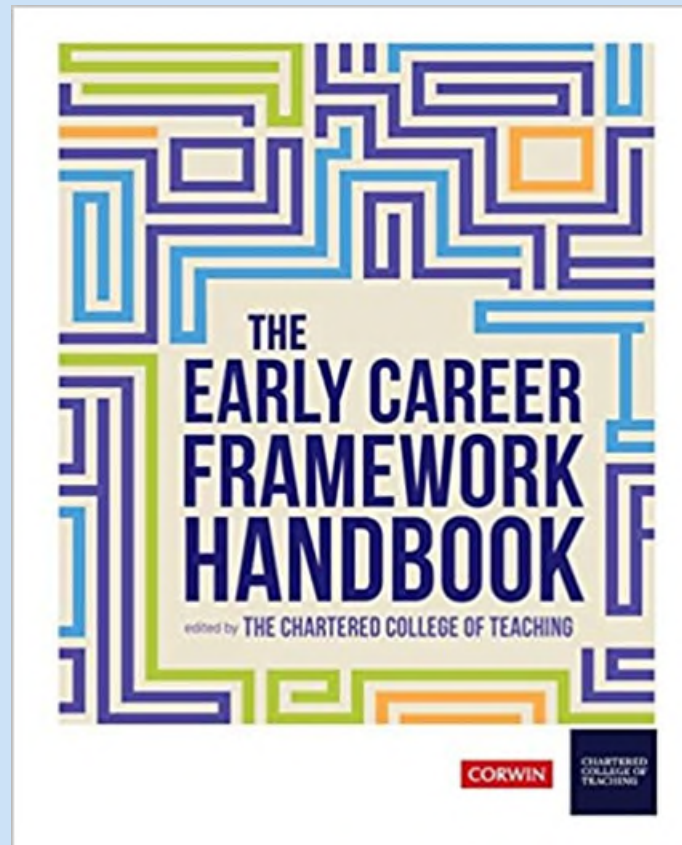
First time here?

Find out how to make the most of the Early Career Hub to support your development as a teacher

Click Here

• • •

THE EARLY CAREER FRAMEWORK HANDBOOK



THE EARLY CAREER FESTIVAL



EARLY CAREER FEST



Impact

Designing a curriculum
Developing strategies to
support access to knowledge

Theories, principles
and approaches

Influences on
the curriculum

Curriculum
design in context

Imp

Designing a curriculum
Building knowledge
powerful curriculum

Imp

The
Classroom

Home » Resources

Compact Guides

Bitesize research and downloadable guides to support you in the classroom



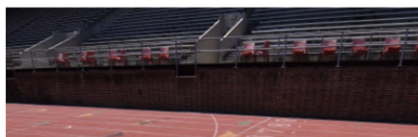
COVID-19 support

[Visit link](#)



Literacy difficulties by the Driver Youth Trust

[Visit link](#)



Introduction to research by Gary Jones and Deborah Netolicky



Research-informed practice by Gary Jones and Deborah Netolicky

Our Accreditation Programmes



**CERTIFICATE IN
EVIDENCE-INFORMED
PRACTICE**



CHARTERED TEACHER



**CHARTERED TEACHER
(LEADERSHIP)**