



Evidence Based  
Education

 @ProfCoe

# What Makes Great Teaching?

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# What makes a great teacher?

One who is willing to do what it takes  
to be demonstrably more effective  
next year than this



# My argument

- Understanding the research helps to
  - Inform better decisions
  - Develop better theory of teaching and learning
  - Make adaptations that are likely to be optimal
- But knowing the research can't really tell you
  - What to do
  - How to do it
  - Whether it is actually working for you
- So you still need to monitor and evaluate
- Becoming "demonstrably more effective" is mostly about learning
  - Make sure you learn to do something that will actually make a difference
  - For this you need coaching, feedback, practice ...



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# *Quiz on Research-Based Pedagogy*



# Class size

1. Reductions in class size (eg 30→20) generate
  - a) Substantial increases in students' learning
  - b) Small increases in students' learning
  - c) No change in students' learning
2. The greatest benefit of smaller classes is
  - a) Less stress for teachers enhances their quality of life
  - b) Better feedback for learners promotes more learning
  - c) More individual attention for students boosts motivation and confidence



# Technology

3. ICT enhances learning if it
  - a) motivates and engages students
  - b) reduces teacher workload
  - c) promotes activities that are aligned with subject content
  - d) gives students more control over their learning
4. Which of these approaches is best supported by evidence of promoting learning
  - a) Giving all students iPads
  - b) Using an interactive whiteboard
  - c) Using technology for short bursts of focused activity



# Testing

5. Which of these are good times to test students' understanding of a topic? (Select all that apply)
  - a) Never: testing creates anxiety that undermines learning
  - b) Before they have learnt it: find out what they already know and cue important material
  - c) Immediately after teaching it: force them to retrieve the learning while it is fresh in memory
  - d) A few weeks after teaching it: build in a delay to allow forgetting
6. After studying and learning a topic, students remember most if they then spend an equivalent amount of time
  - a) Studying it again in a single session
  - b) Studying it again in shorter, multiple sessions
  - c) Studying it again, and then being tested on it
  - d) Repeatedly being tested on it, with no further study



# Learning style

7. A person's learning style determines
  - a) which part of the brain the individual uses during a learning task
  - b) how well they can learn information presented in different modalities (visual, auditory, kinesthetic)
  - c) nothing about their performance on learning tasks
8. Research shows that
  - a) People learn best when instruction matches their individual learning style, e.g., auditory learners are taught using an auditory mode of instruction
  - b) People learn best when instruction forces learners to use learning styles different from their preferred style, e.g., auditory learners are taught using a visual mode of instruction
  - c) There is no connection between learning style and how well people learn





# Praise

9. For students who lack confidence, reassuring them that they are clever is most likely to
  - a) Make them think they are capable
  - b) Make them think being clever matters
  - c) Help them to learn more
10. The response to a poor piece of work that is most likely to result in improvement is
  - a) Sympathy, support and encouragement
  - b) Frustration or irritation, suggesting the student needs to do better
  - c) Attributing their failure to lack of effort or poor strategy

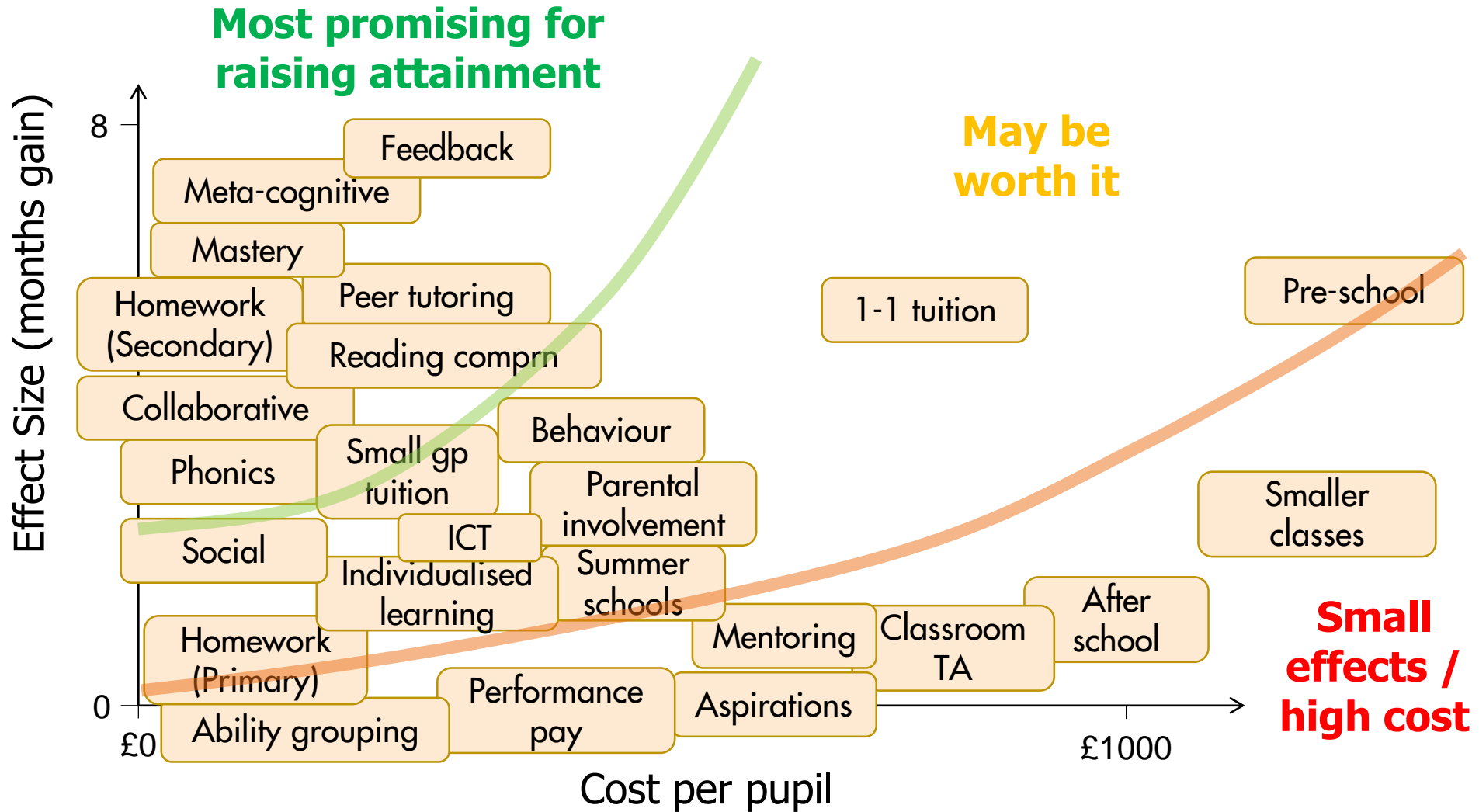


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*Some relevant research*



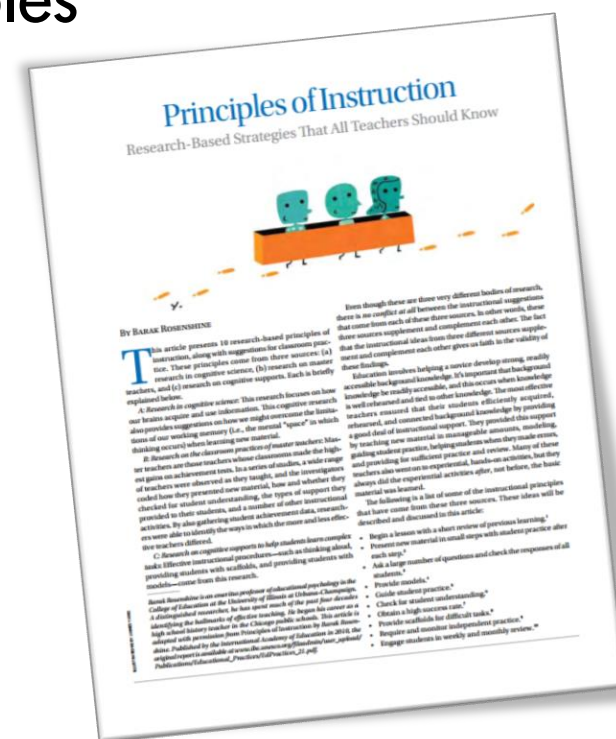
# EEF Toolkit: Impact vs cost

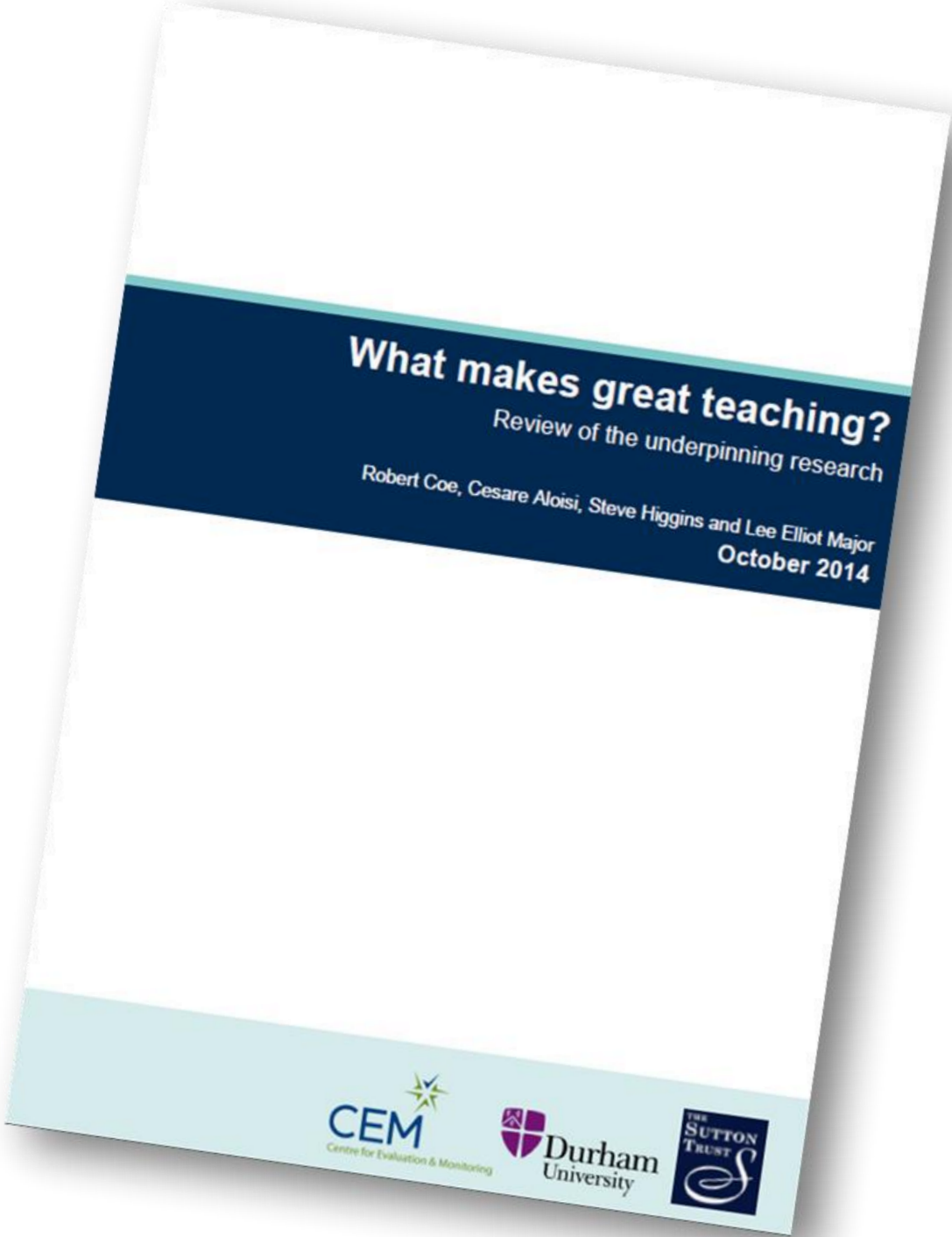




# Principles of Instruction (Rosenshine, 2010)

- Begin a lesson with a short review of previous learning
- Present new material in small steps, with student practice after each step
- Ask a large number of questions and check the responses of all students
- Provide models for problem solving and worked examples
- Guide student practice and rehearsal
- Check for student understanding
- Obtain a high success rate (80%)
- Provide scaffolds for difficult tasks
- Require and monitor independent practice
- Engage students in weekly and monthly review







# 1. We do that already (don't we?)

- Reviewing previous learning
- Setting high expectations
- Using higher-order questions
- Giving feedback to learners
- Having deep subject knowledge
- Understanding student misconceptions
- Managing time and resources
- Building relationships of trust and challenge
- Dealing with disruption





## 2. Do we always do that?

- Challenging students to identify the reason why an activity is taking place in the lesson
- Asking a large number of questions and checking the responses of all students
- Raising different types of questions (i.e., process and product) at appropriate difficulty level
- Giving time for students to respond to questions
- Spacing-out study or practice on a given topic, with gaps in between for forgetting
- Making students take tests or generate answers, even before they have been taught the material
- Engaging students in weekly and monthly review





### 3. We don't do that (hopefully)

- Use praise lavishly
- Allow learners to discover key ideas for themselves
- Group learners by ability
- Encourage re-reading and highlighting to memorise key ideas
- Address issues of confidence and low aspirations before you try to teach content
- Present information to learners in their preferred learning style
- Ensure learners are always active, rather than listening passively, if you want them to remember





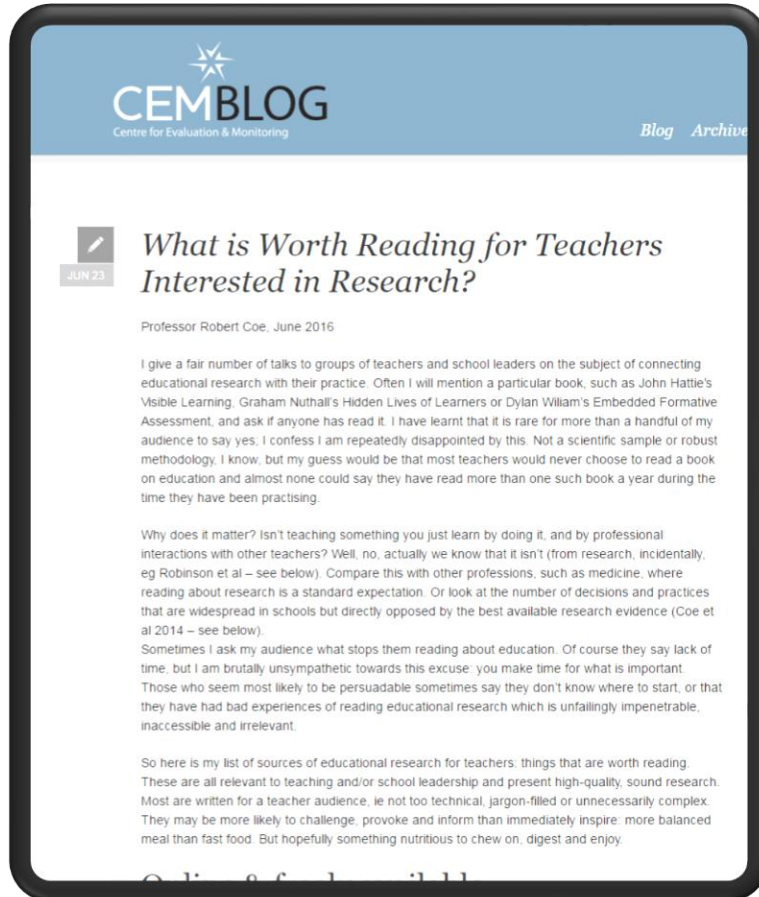


# What works?

What you do may matter less than  
how, why and when you do it

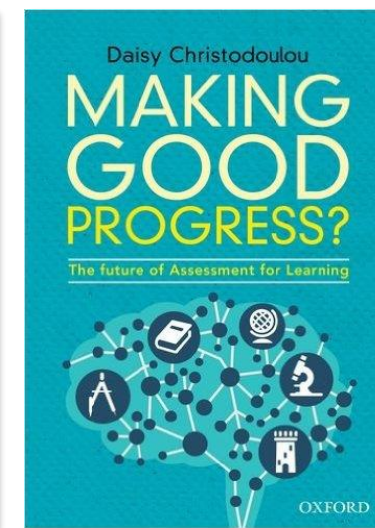
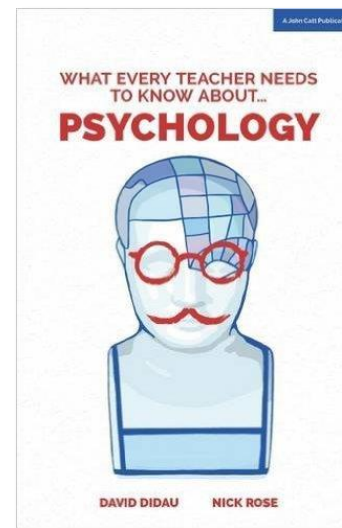
# Professional reading

<http://cem.org/blog/what-is-worth-reading-for-teachers-interested-in-research>

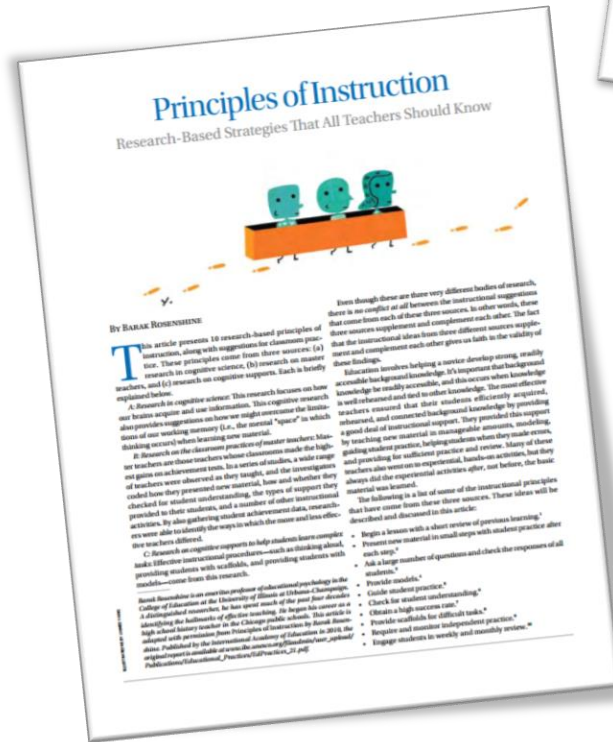
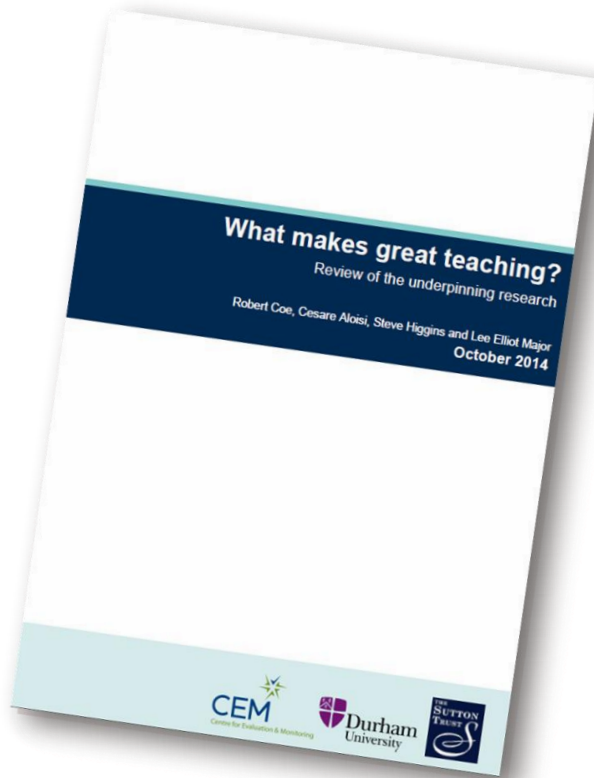


- Reports (online & free)
  - Effective pedagogy (6)
  - Impact of interventions (3)
  - How learning happens (8)
  - Teachers' PD (2)
  - School improvement and leadership (3)
- Books (8)
- Blogs (10)

And two new books:



# Starter pack: 50 pages





# EEF Guidance reports



**Education Endowment Foundation**

**PREPARING FOR LITERACY**  
Improving communication, language and literacy in the early years

<p><b>1</b></p> <p><b>Prioritise the development of communication and language</b></p>  <p>Language provides the foundation of thinking and learning and should be prioritised.</p> <p>High quality adult-child interactions are important and sometimes described as talking with children rather than just talking to children.</p> <p>Adults have a vital role to play in modelling effective language and communication.</p> <p>Use a wide range of approaches including shared reading, storytelling, and explicitly extending children's vocabulary.</p>	<p><b>2</b></p> <p><b>Develop children's early reading using a balanced approach</b></p>  <p>Early reading requires the development of a broad range of capabilities.</p> <p>Using a number of different approaches will be more effective than focusing on any single aspect of early reading.</p> <p>Promising approaches to develop early reading include storytelling, activities to develop letter and sound knowledge, and singing and rhyming activities to develop phonological awareness.</p> <p>Prior to the introduction of systematic phonics teaching, activities to develop children's phonological awareness and interest in sounds are likely to be beneficial.</p>	<p><b>3</b></p> <p><b>Develop children's capability and motivation to write</b></p>  <p>Writing is physically and intellectually demanding.</p> <p>Expressive language underpins writing and should be prioritised.</p> <p>Provide a wide range of opportunities to communicate through writing and develop children's motivation to write.</p> <p>Support children to develop the foundations of a fast, accurate, and efficient handwriting style.</p> <p>Monitor the product and process of children's handwriting and provide additional support as necessary.</p>	<p><b>4</b></p> <p><b>Embed opportunities to develop self-regulation</b></p>  <p>'Self-regulation' refers to children's ability to manage their own behaviour and aspects of their learning.</p> <p>A number of approaches to developing self-regulation exist, including the 'Plan-Do-Review' cycle.</p> <p>Embed opportunities to develop self-regulation within day-to-day activities.</p> <p>Monitor the development of children's self-regulation and ensure activities remain suitably challenging.</p>	<p><b>5</b></p> <p><b>Support parents to understand how to help their children learn</b></p>  <p>Effective parental engagement is challenging but has the potential to improve children's communication, language, and literacy.</p> <p>Promising strategies include:</p> <ul style="list-style-type: none"> <li>encouraging parents to read to children before they can read, then to begin reading with children as soon as they can; and</li> <li>running workshops showing parents how to read and talk about books with their children effectively.</li> </ul> <p>Less promising strategies include occasional home visits or homework tasks.</p>	<p><b>6</b></p> <p><b>Use high quality assessment to ensure all children make good progress</b></p>  <p>Ensure clarity of purpose about the different assessments used in your setting.</p> <p>Collect a small amount of high quality information to ensure that:</p> <ul style="list-style-type: none"> <li>children who are struggling receive the right type of support; and</li> <li>time is used efficiently by avoiding rehearsing skills or content that children already know well.</li> </ul> <p>Use assessments to inform, not replace, professional judgement.</p> <p>Monitor children's sensory needs to ensure they do not impede learning.</p> <p>Avoid using assessments to label children and split them into fixed groups.</p>	<p><b>7</b></p> <p><b>Use high quality targeted support to help struggling children</b></p>  <p>High quality targeted support can ensure that children falling behind catch up as quickly as possible.</p> <p>Small-group support is more likely to be effective when:</p> <ul style="list-style-type: none"> <li>children with the greatest needs are supported by the most capable adults;</li> <li>adults have been trained to deliver the activity being used; and</li> <li>the approach is evidence-based and has been evaluated elsewhere.</li> </ul> <p>In addition to using evidence-based programmes, some specialist services are likely to be best delivered by other professionals, such as speech and language therapists.</p>
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**Education Endowment Foundation**



<https://educationendowmentfoundation.org.uk/tools/guidance-reports/>



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*Has it worked?*



The #1 fact about 'what works':

**It doesn't always work**



# Even if you follow the evidence, it may not work, so

- Monitor
  - Routine, on-going, real-time collection of high quality assessment
  - Analysis and evaluation to see what seems to be working
  - Feedback into processes
- Evaluate
  - For interventions, changes, investments
  - Is the impact worth the cost?



# Lesson Observation

1. Two teachers observe the same lesson, one rates it 'Inadequate'. What is the probability the other will agree?  
a) 10%   b) 40%   c) 60%   d) 80%
2. An observer judges a lesson 'Outstanding'. What is the probability that pupils are really making sustained, outstanding progress?  
a) 5%   b) 30%   c) 50%   d) 70%

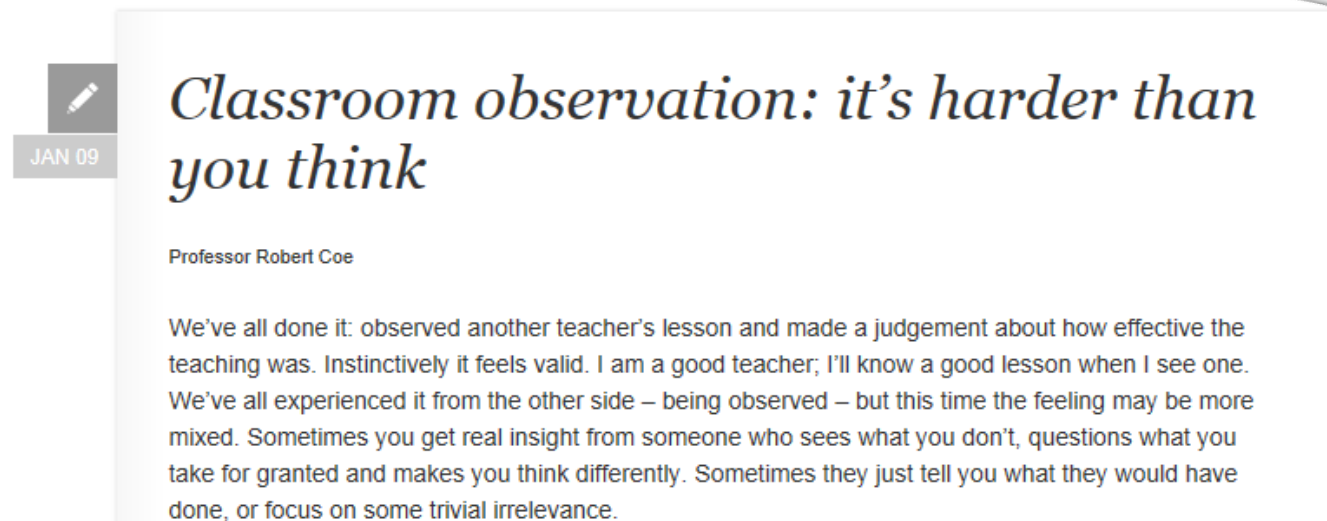
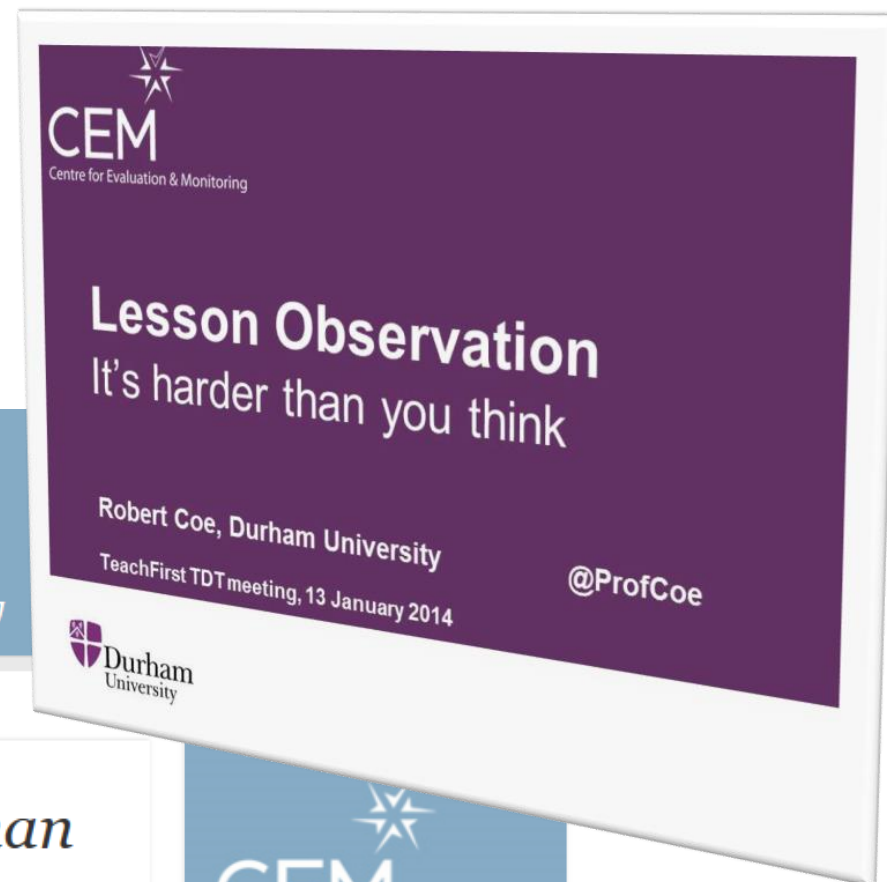
[www.cem.org/blog](http://www.cem.org/blog)





# Lesson observation: It's harder than you think

<http://www.cem.org/blog/414/>





**How good do you think your assessment is?**





# Are they in the right set?

You have used a 1 hour end of year maths test to allocate students to six ordered teaching sets.  
What percentage of students will be wrongly allocated?

- a) 5%
- b) 10%
- c) 20%
- d) 40%

(Assume Cronbach alpha = 0.9)



## JOIN ASSESSMENT ACADEMY



### ASSESSMENT LEAD PROGRAMME

- Whole-school impact: improve assessment practice, policy and framework across departments
- c. 50 hours' sustained CPD over three terms
- Includes tools, guides and practice opportunities
- Collaboration is key – minimum two staff per school
- Ideal for current and aspiring school and college leaders



### ASSESSMENT ESSENTIALS

- What every teacher needs to know about assessment
- 10-week short course
- Includes content from experts such as Dylan Wiliam, and teachers at the forefront of assessment practice
- Perfect for upskilling individual teachers' practice
- Ideal for 1-100+ staff, initial teacher training, and RQTs alike
- **"A great PD package for anyone"**



### BESPOKE ASSESSMENT TRAINING & CONSULTANCY

As well as conducting bespoke in-person training, we are also happy to advise and consult on assessment design, policy and practice. We have, for example, worked with schools to analyse and improve entrance exams, to train dozens of staff on an intensive four-day course, and run everything from two-hour webinars to one-day inset sessions for whole groups of staff.

Please contact us using the button below to





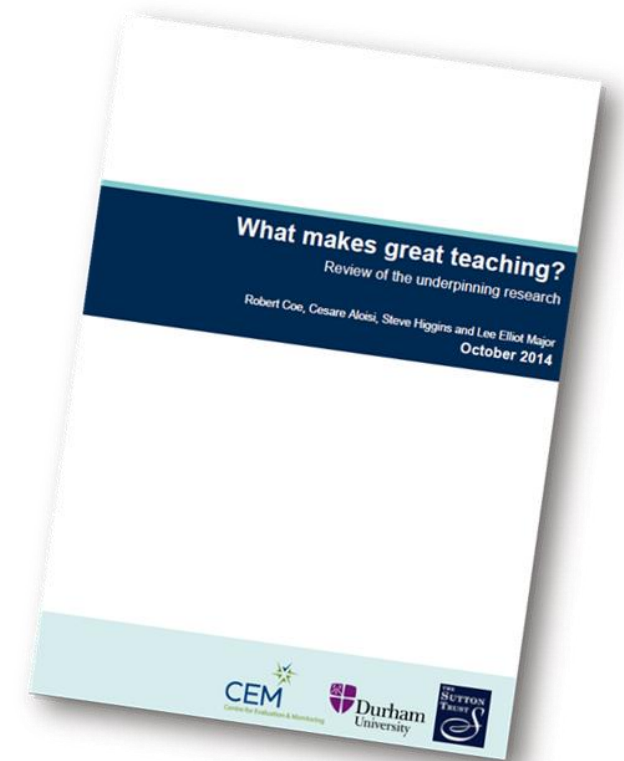
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*Learning to be more effective*



# The Elements of Great Teaching

1. Curriculum-related content knowledge
2. Cognitive activation
3. Classroom management
4. Classroom culture and relationships
5. Teacher knowledge about education
6. Teacher professionalism





# The challenge

To develop a list of teacher abilities (skill, knowledge, competence, behaviour, attitude, etc) whose elements

- a) Include everything you might want to use to evaluate or improve teaching quality (eg for recruitment, retention, performance management, professional development, etc)
- b) Are supported by evidence and theory as related to learner outcomes
- c) Are well-defined and observable
- d) Can be learnt/improved

- Updated review this autumn
- Framework and tools for self-evaluation and progress, to follow



# All good learning & teaching ...

- Starts with a strong curriculum
- Takes learners from where they are at
- Is clear what success looks like
- Creates challenging expectations
- Assesses and feeds back on the gap
- Requires exposition, modelling, scaffolding and guidance from an expert
- Requires a coaching & mentoring role
- Benefits from peer support
- Requires trust: 'OK to fail'
- Allows time for practice to reinforce, embed and secure learning





# How should we design teachers' professional learning?

You're a teacher.

You know how to help people learn hard stuff.

Do that.



# Summary

- Understanding the research helps to
  - Inform better decisions
  - Develop better theory of teaching and learning
  - Make adaptations that are likely to be optimal
- But knowing the research can't really tell you
  - What to do
  - How to do it
  - Whether it is actually working for you
- So you still need to monitor and evaluate
- Becoming "demonstrably more effective" is mostly about learning
  - Make sure you learn to do something that will actually make a difference
  - For this you need coaching, feedback, practice ...



# Workshop topics

## Choose from:

1. Engaging with research evidence
2. Great Teaching Framework
3. Evaluating teaching quality
4. Evaluating the impact of interventions
5. Improving the quality of assessments
6. Models of teacher professional learning

# Thank you!

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