Research
Schools Network

School-led support for evidence-based practice

Shotton Hall
Research School

www.shottonhall.researchschool.org.uk

Education Endowment Foundation

Institute for **Effective Education**
Empowering educators with evidence

Session overview

- Role and purpose of Research Schools

- What do we mean by 'evidence'?

- What is the latest evidence telling us?

- Questions

Role and purpose of Research Schools

Research Schools Network

- The Research Schools Network is a partnership between the EEF, the IEE and the Department for Education.
- There are 22 Research Schools which provide school-led support for the use of evidence to improve teaching practice.

The Academy at Shotton Hall Research School

North Yorkshire Coast Research School by Esk Valley Alliance

Blackpool Research School at St Mary's Catholic Academy

Huntington Research School

Bradford Research School at Dixons Academies

Meols Cop Research School

Doncaster Research School by Partners in Learning

Kyra Research School

Oldham Research School by The Greetland Academy

Derby Research School at Wyndham Primary

Aspirer Research School

Norwich Research School at Notre Dame High School

Stoke-on-Trent Research School by The Keele and North Staffordshire Alliance

East Cambridgeshire and Fenland Research School at Littleport CP School

Shireland Research School

Samuel Ward Research School

West Somerset Research School at The Blue School, Wells

Sandringham Research School

Rosendale Research School

Hastings Research School at Ark Blacklands Primary Academy

Durrington Research School

Kingsbridge Research School

Research Schools Network

Education Endowment Foundation

Institute for Effective Education
Empowering educators with evidence

The Case for Evidence-Based Education

'Best bets' for improving outcomes for pupils

Effective use of time and resources: identify what does and doesn't work

Teaching seen as more professionalised

Increased teacher autonomy

Applying evidence in practice

Step 1: Decide what you want to achieve

Identify school priorities using **internal data** and **professional judgement.**

Step 5: Securing and spreading change

Mobilise the knowledge and use the findings to inform the work of the school to grow or stop the intervention.

Step 2: Identifying possible solutions

External evidence summarised in the Toolkit can be used to inform choices.

Step 4: Did it work?

Evaluate the impact of your decisions and identify potential improvements for the future.

Step 3: Giving the idea the best chance of success

Applying the **ingredients of effective implementation**.

Research Schools Network

Education Endowment Foundation

Institute for **Effective Education**
Empowering educators with evidence

What have we done?

- Evaluated CPD programme – aligned with evidence-based principles. Made this explicit to staff

- Evaluated & refined SCITT curriculum – aligned with evidence-based principles. This is made explicit to trainees. They are accessing EEF Toolkit etc – forming good habits from the start.

Research Schools Network

Education Endowment Foundation

Institute for Effective Education
Empowering educators with evidence

The need for Research Schools

Uptake of research is based on trust and people as much as practical usefulness:

- Change is a social process
- The expertise on how to apply evidence in schools and classrooms lies with teachers
- Schools listen to other schools
- Research needs practical application: peer coaching and training is key to producing substantive changes in teachers' practice
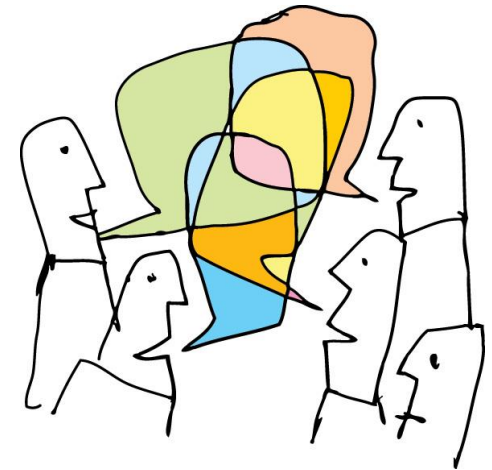
Research Schools

Research Schools work with the other schools in their network to support them to make better use of evidence to inform their teaching and learning.

They do this through:
- Communication
- Training and Modelling
- Innovation

Communication

- Newsletter
- Social media
- Blogs
- Conferences e.g. Schools NE Summit
- Teachmeets

Training

- Programmes for leaders and teachers
  - Leading Learning
  - Leading Literacy
  - Memory and Metacognition

Innovation

- Support with developing innovations and evaluation models
- Applications for IEE Innovation Evaluation Grants
- Invitations to participate in new and developing evaluations
- Running an RCT in testing and retrieval

www.shottonhall.researchschool.org.uk

SHOTTON HALL
RESEARCH SCHOOL

Research Schools Network

Education Endowment Foundation

Institute for Effective Education
Empowering educators with evidence

What do we mean by 'evidence'?

Levels of evidence

Level 5
You have manuals, systems and procedures to ensure consistent replication and positive impact

Most schools not here

Level 4
You have one + independent replication evaluations that confirms these conclusions

Some schools here

Level 3
You can demonstrate causality using a control or comparison group

Level 2
You capture data that shows positive change, but you cannot confirm you caused this

Most schools here

Level 1
You can describe what you do and why it matters, logically, coherently and convincingly

Types of evidence

Indicative strength	Type of evidence
🟢	• **Meta-analysis or systematic review** - analysis and summary across many individual evaluations
🟢	• **Matched-comparison design or a randomised controlled trial** – tests intervention against a comparison grp
🟢	• **Sound theory backed by a growing body of empirical research** & may cite DfE policy / White paper
🟡	• **Independent research / evaluation** – uses surveys, data analysis, monitoring, interviews, observations, focus groups, etc
🟧	• **Interna/ / in-house evaluation.** Not independently evaluated • - inc. case studies, observation, interviews,MI
🟧	• **Expert opinion / advice** from consultants, academics or sector grp
🔻	• **Media articles / anecdotal reports** and interest groups

EEF evidence

There's evidence and research to justify almost every decision …

But is it good evidence?

How specific is the evidence to what you want to achieve?

Research Schools Network

Education Endowment Foundation

Institute for Effective Education
Empowering educators with evidence

The Teaching and Learning Toolkit

- 34 syntheses of the research findings from meta-analyses and systematic reviews, grouped by type.

- Each strand shows:
  - Average impact expressed as additional months' learning progress over a year
  - Average costs
  - Evidence security ratings

- The Toolkit gives **'best bets'** based on what *has* worked, and *what hasn't worked,* through others' experiences.

- It **doesn't tell you what *will* work – but is a good starting point for the evidence**.
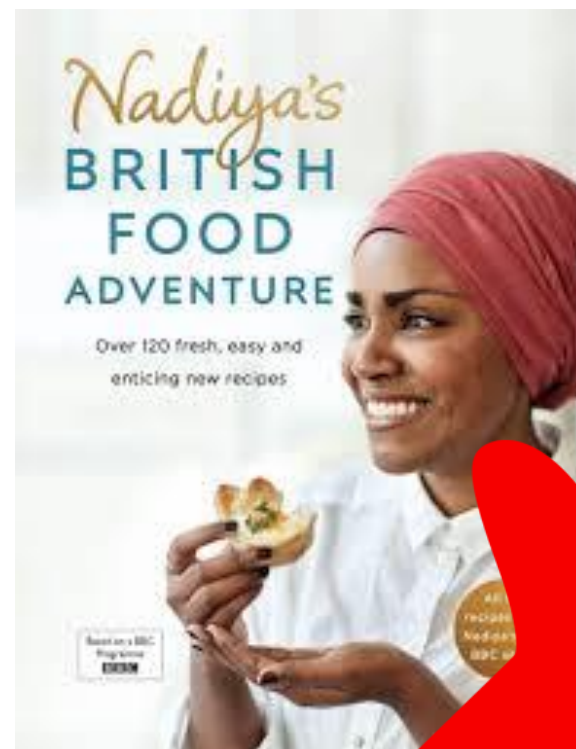
BEWARE!
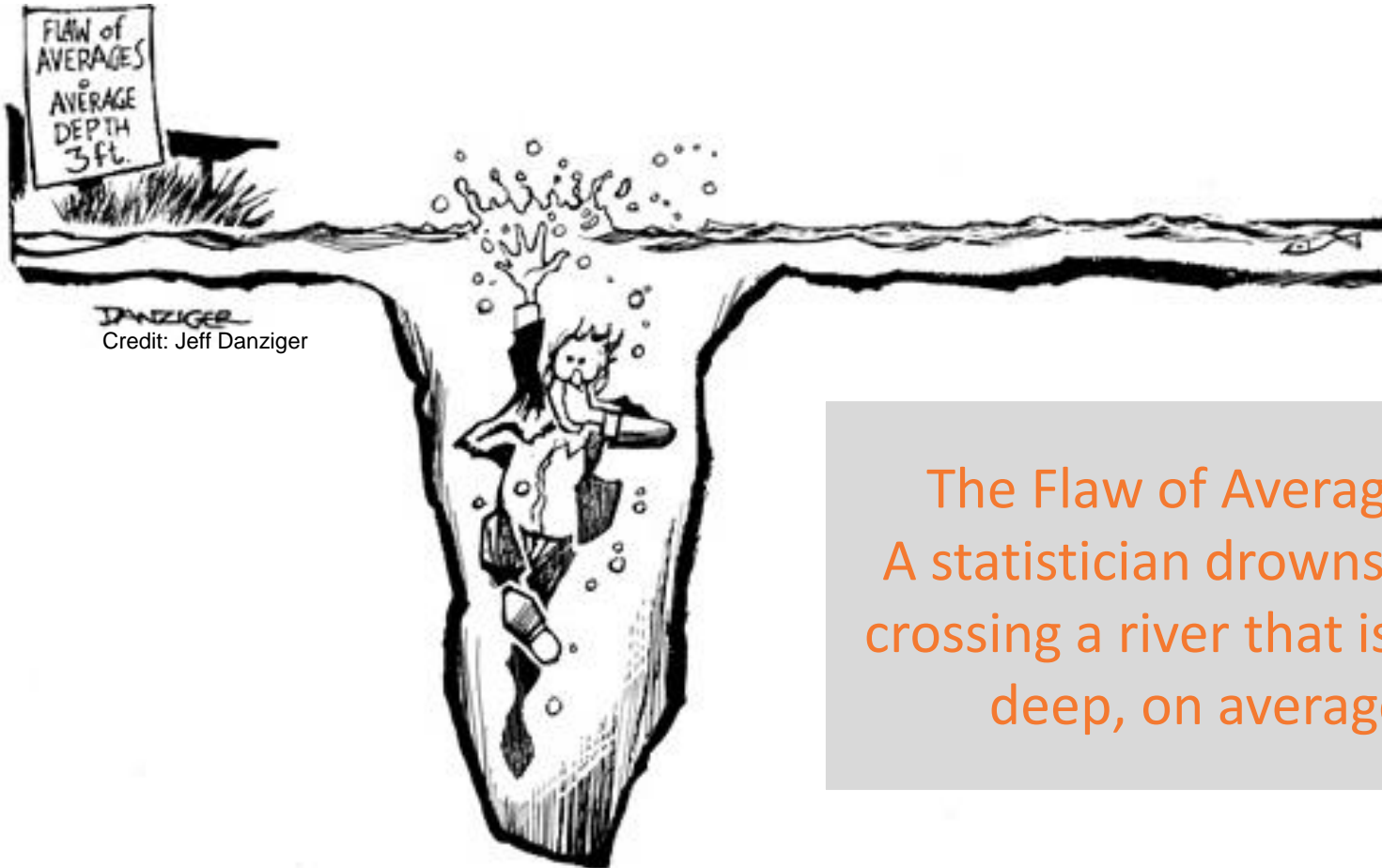
Credit: Jeff Danziger

The Flaw of Averages...
A statistician drowns whilst crossing a river that is 3 feet deep, on average.

Derbyshire pupils wear slippers at school to get 'better grades'

Sign in

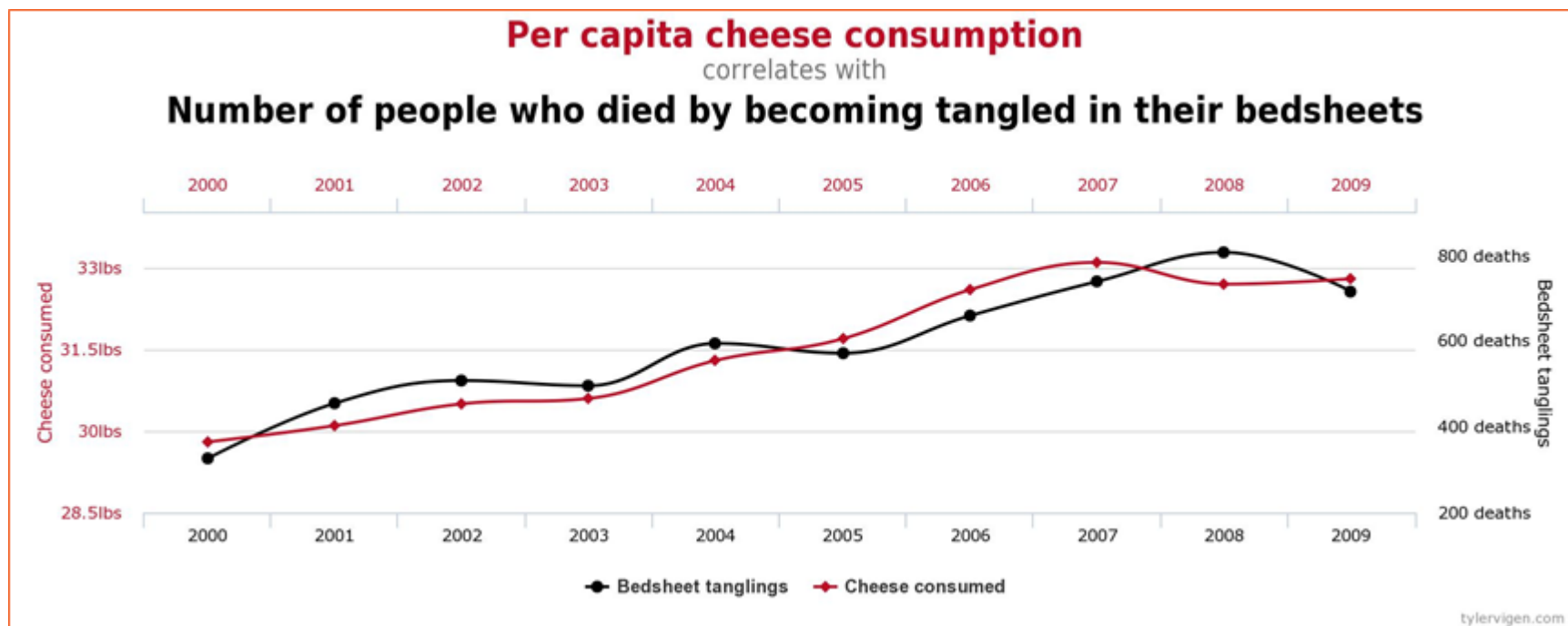31 January 2017 | Derby

Share

A primary school has allowed its pupils to wear slippers in class after research suggested it helps them get better grades.

Findern Primary School in Derbyshire has been trialing the idea there are benefits to children's learning when in a "shoeless" environment. Head teacher Emma Tichener said the pupils have been "more relaxed and calmer than usual."

Professor Stephen Heppell from Bournemouth University said **he found children behaved better** without shoes. Prof Heppell researched the topic for more than 10 years in 25 countries. Shoeless learning has been carried out in schools in Scandinavia and New Zealand and learning centres in other countries.

Mrs. Tichener said: "We hope that in time we can measure their progress and see if it has made a difference in their achievements. We are looking for different ideas to improve the experience for our students so if this works then it might become a more permanent."

How might the language used here persuade a school to take the research at face value?
What questions would you want to ask about this research?

Per capita cheese consumption
correlates with
Number of people who died by becoming tangled in their bedsheets

Correlation does NOT imply causation!

www.shottonhall.researchschool.org.uk

What is the current evidence telling us?

- There is no doubt that evidence has come of age within the teaching profession …

- But how do we ensure it has rigour and is therefore reliable?

A traditional school approach to intervention impact

Teachers introduce an oral feedback intervention to improve attainment

Year 9 class

Data indicates low rates of attainment

Conclusion?
Oral feedback was responsible for the rise in attainment

Year 9 class

Data indicates 32% of them increased their levels

Research Schools Network

Education Endowment Foundation

Institute for **Effective Education**
Empowering educators with evidence

Control vs. Treatment

Figure 1: evaluation with a comparison group.
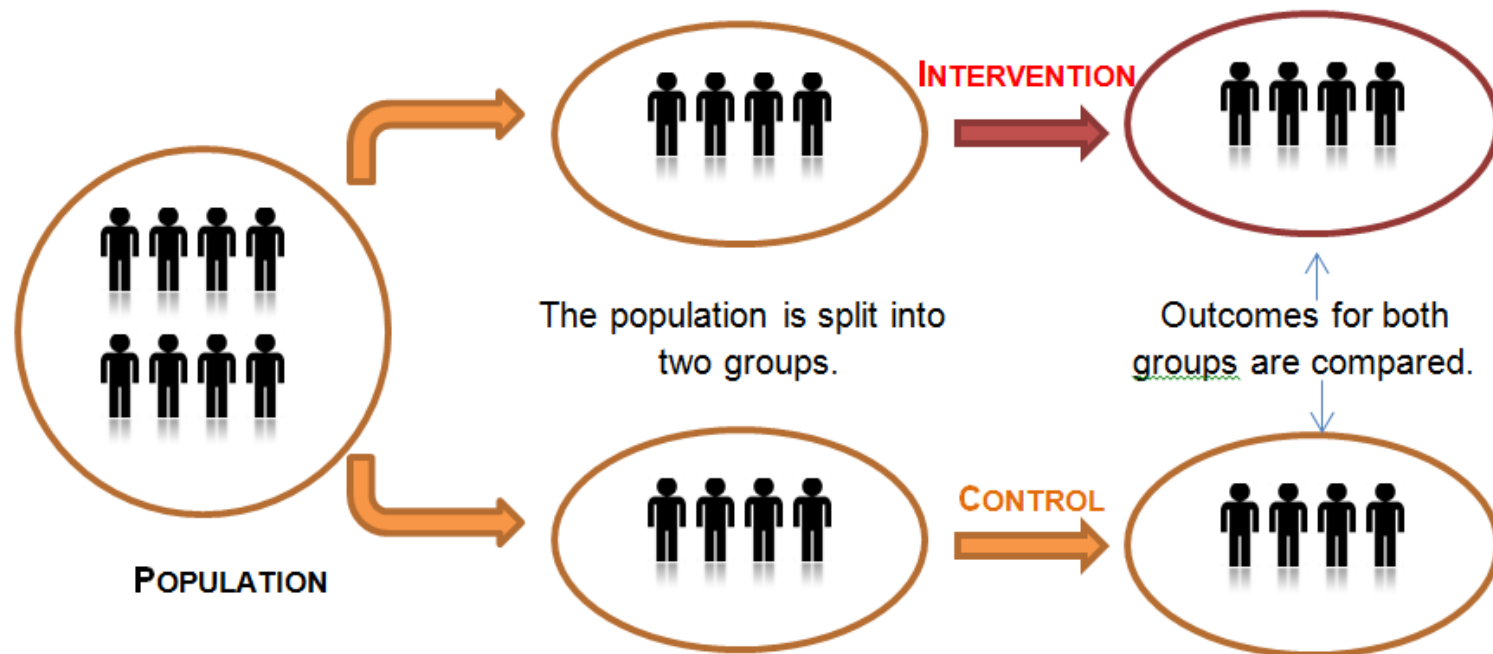
The population is split into two groups.

INTERVENTION

CONTROL

Outcomes for both groups are compared.

POPULATION

Promising projects

- Based on the EEF's trials of 140+ projects, the programmes we believe have promise and to which we have made further grants.

- NB Limited to those programmes the EEF has directly tested, but a good starting point.

- *What evidence does the programme you choose have behind it?*

1 Develop pupils' language capability to support their reading and writing

Purposeful speaking and listening activities support the development of pupils' language capability and provides a foundation for thinking and communication.

Purposeful activities include:

- reading books aloud and discussing them;
- activities that extend pupils' expressive and receptive vocabulary;
- collaborative learning activities where pupils can share their thought processes;
- structured questioning to develop reading comprehension;
- teachers modelling inference-making by thinking aloud; and
- pupils articulating their ideas verbally before they start writing.

EVIDENCE STRENGTH

VERY EXTENSIVE
EXTENSIVE
MODERATE
LIMITED
VERY LIMITED

see page 10

2 Support pupils to develop fluent reading capabilities

Fluent readers can read quickly, accurately, and with appropriate stress and intonation.

Fluent reading supports comprehension because pupils' cognitive resources are freed from focusing on word recognition and can be redirected towards comprehending the text.

This can be developed through:

- guided oral reading instruction—teachers model fluent reading of a text, then pupils read the same text aloud with appropriate feedback; and
- repeated reading—pupils re-read a short and meaningful passage a set number of times or until they reach a suitable level of fluency.
- It is important to understand pupils' current capabilities and teach accordingly. Most pupils will need an emphasis on developing reading fluency, but some pupils may need a focus on more basic skills, such as decoding and phonological awareness.

EVIDENCE STRENGTH

VERY EXTENSIVE
EXTENSIVE
MODERATE
LIMITED
VERY LIMITED

see page 12

3 Teach reading comprehension strategies through modelling and supported practice

Reading comprehension can be improved by teaching specific strategies that they can apply both to monitor and overcome barriers to comprehension. These include:

- prediction;
- questioning;
- clarifying;
- summarising;
- inference; and
- activating prior knowledge.

The potential impact of these strategies is very high, but can be hard to achieve, since pupils are required to take g reater responsibility for their own learning.

The strategies should be described and modelled before pupils practice the strategies with feedback. Support should then be gradually reduced as pupils take increasing responsibility.

Texts should be carefully selected to support the teaching of these strategies.

EVIDENCE STRENGTH

VERY EXTENSIVE
EXTENSIVE
MODERATE
LIMITED
VERY LIMITED

see page 14

4 Teach writing composition strategies through modelling and supported practice

Purpose and audience are central to effective writing. Pupils need to have a reason to write and someone to write for.

Writing can be thought of as a process made up of seven components:

- planning;
- drafting;
- sharing;
- evaluating;
- revising;
- editing; and
- publishing.

Effective writers use a number of strategies in the different stages of the writing process. Pupils' writing can be improved by explicitly teaching these strategies. For example, pupils' planning could be improved by teaching the strategies of goal-setting and activating prior knowledge.

The strategies should be described and modelled before pupils practice them with feedback. Support should then be gradually reduced as pupils take increasing responsibility.

EVIDENCE STRENGTH

VERY EXTENSIVE
EXTENSIVE
MODERATE
LIMITED
VERY LIMITED

see page 16

5 Develop pupils' transcription and sentence construction skills through extensive practice

A fluent writing style supports composition because pupils' cognitive resources are freed from focusing on handwriting, spelling, and sentence construction and can be redirected towards writing composition.

Extensive practice, supported by effective feedback, is required to develop fluent transcription skills.

Spelling should be explicitly taught and diagnostic assessment should be used to focus effort on the spellings that pupils are finding difficult.

Pupils should practice sentence-combining and other sentence construction techniques.

EVIDENCE STRENGTH

VERY EXTENSIVE
EXTENSIVE
MODERATE
LIMITED
VERY LIMITED

see page 18

6 Target teaching and support by accurately assessing pupil needs

High-quality assessment and diagnosis should be used to target teaching and adapt teaching to pupils' needs.

Rapid provision of support is important, but it is critical to ensure it is the right support. Diagnostic assessment can be used to inform professional judgement about the best next steps. Diagnostic assessment makes teaching more efficient by ensuring that effort is not wasted on rehearsing skills or content that a pupil already knows well.

A range of diagnostic assessments are available and staff should be trained to use and interpret these effectively.

This approach can be used for high- and low-attaining pupils and for whole-class and targeted interventions.

EVIDENCE STRENGTH

VERY EXTENSIVE
EXTENSIVE
MODERATE
LIMITED
VERY LIMITED

see page 20

7 Use high-quality structured interventions to help pupils who are struggling with their literacy

Schools should focus first on developing core classroom teaching strategies that improve the literacy capabilities of the whole class. With this in place, the need for additional support should decrease. Nevertheless, it is likely that a small number of pupils will require additional support.

There is a strong and consistent body of evidence demonstrating the benefit of structured interventions for pupils who are struggling with their literacy. The first step should be to use accurate diagnosis of capabilities and difficulties to match pupils to appropriate interventions.

EVIDENCE STRENGTH

VERY EXTENSIVE
EXTENSIVE
MODERATE
LIMITED
VERY LIMITED

see page 22

Current and forthcoming guidance reports

Improving Literacy in Key Stage One

Published: 30th September, 2016

Key Stage 1

Improving Literacy in Key Stage Two

Published: 28th April, 2017

Key Stage 2

Preparing for literacy

Coming Soon: Autumn 2017

Early Years

Intermediate maths

Coming Soon: Autumn 2017

Key Stage 2

Digital Technology

Coming Soon: Autumn 2017

Developing independent learning

Coming Soon: Spring 2018

Literacy at the transition

Coming Soon: Spring 2018

Key Stage 2/3

Science

Coming Soon: 2018

www.shottonhall.researchschool.org.uk

School Themes

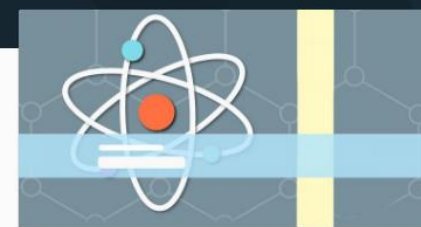Summaries of the evidence from the Teaching and Learning Toolkit and EEF projects on a selection of themes chosen in collaboration with teachers

≡ School Themes

Introducing Themes

The School Themes pull together evidence from the Teaching & Learning Toolkit and published EEF projects, focusing on ten high priority issues for schools. They provide greater depth to the evidence on common school challenges by linking together evidence in the Toolkit with key messages emerging from EEF projects and other resources. Taken together, they provide a rich picture of the developing evidence base on how to improve pupil attainment.

The themes were developed in collaboration with schools in response to demand from teachers and school leaders about providing evidence around specific school challenges. Each section is not an exhaustive list of all the relevant EEF material, but a drawing together of the most relevant. They will be updated as new EEF and other evidence becomes available.

School Theme ^	No. of Projects ⌄
L Literacy — Evidence on literacy from the Teaching and Learning Toolkit alongside the findings from recent EEF projects.	26
St Staff deployment & development — Evidence on the effective development and deployment of staff from the Teaching and Learning Toolkit alongside the results from recent relevant EEF projects.	21
Di Developing independent learning — Evidence on developing independent learning from the Teaching and Learning Toolkit alongside the results from recent relevant EEF projects.	11
Pe Pupil engagement & behaviour — Evidence on improving attainment through engagement and behaviour from the Teaching and Learning Toolkit alongside results from recent relevant EEF projects.	8
N Numeracy — Evidence on numeracy from the Teaching and Learning Toolkit alongside the findings from recent EEF projects.	6
F Feedback & monitoring pupil progress — Evidence on feedback and monitoring pupil progress from the Teaching and Learning Toolkit alongside the results from recent relevant EEF projects.	5
P Parental engagement — Evidence on parental engagement from the Teaching and Learning Toolkit alongside the results from recent relevant EEF projects.	4
C Character — Evidence on character from the Teaching and Learning Toolkit alongside the results from recent relevant EEF projects.	3
So School organisation — Evidence from the Teaching and Learning Toolkit and Projects on the structure of the school day, summer schools, the size and make-up of individual classes.	3
S Science — Evidence on science from the Teaching and Learning Toolkit alongside the findings from recent EEF projects.	2

SHOTTON HALL RESEARCH SCHOOL

Bringing it all together: 'School themes' focus on 10 high priority issues for schools.

www.shottonhall.researchschool.org.uk

Research Schools Network

Education Endowment Foundation

Institute for **Effective Education**
Empowering educators with evidence

Plus other EEF evidence reviews…
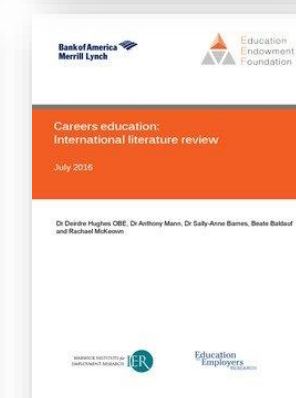
www.shottonhall.researchschool.org.uk

Institute for effective Education

SHOTTON HALL RESEARCH SCHOOL

The Institute for Effective Education (IEE) is an independent charity working with schools to promote the use of evidence-based practice.

Better
Evidence-based Education
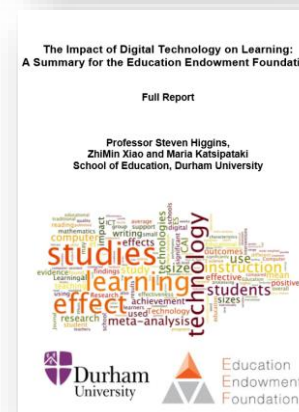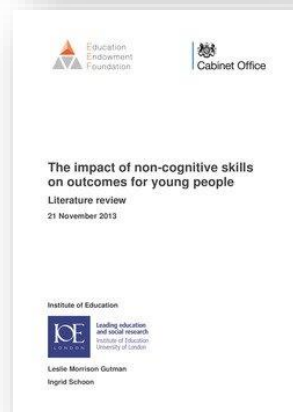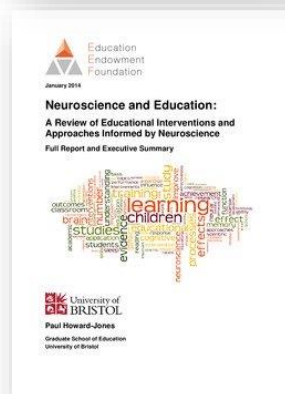PARENTS AND SCHOOLS

Evidence FOR THE Frontline

E4I

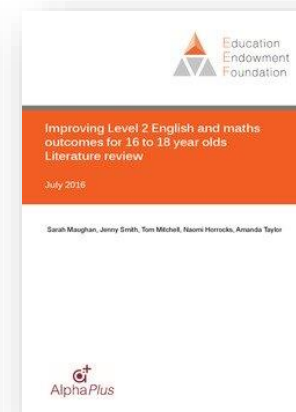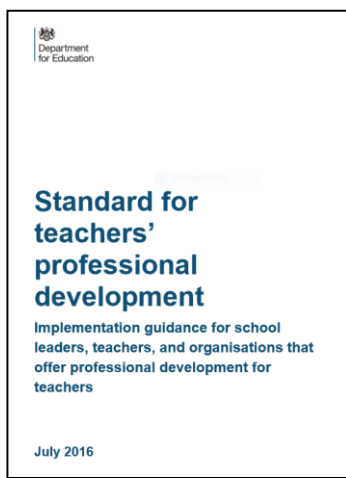Research Schools Network

Education Endowment Foundation

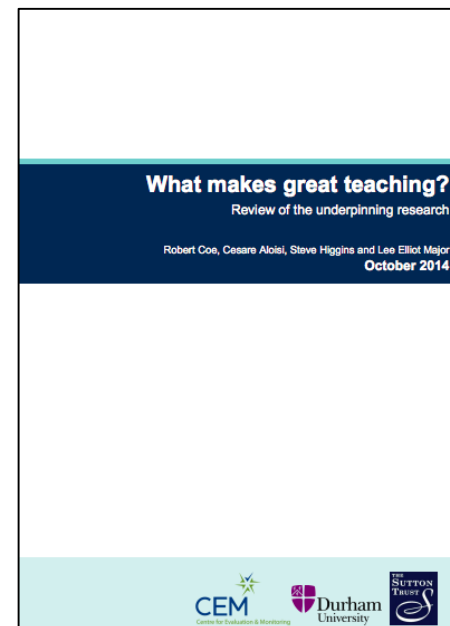Institute for Effective Education
Empowering educators with evidence

Other resources

The Teacher Development Trust's review summarises what constitutes effective professional development for teachers. http://tdtrust.org/about/dgt

Standard for teachers' professional development

Implementation guidance for school leaders, teachers, and organisations that offer professional development for teachers
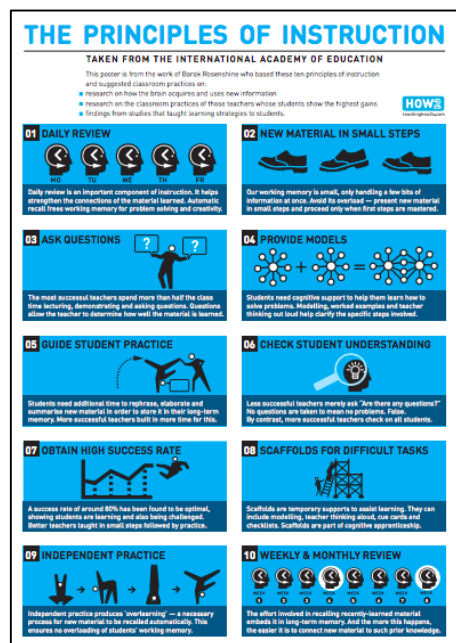
July 2016

The DfE Standards sets out a number of expectations about professional development.
https://www.gov.uk/government/publications/standard-for-teachers-professional-development

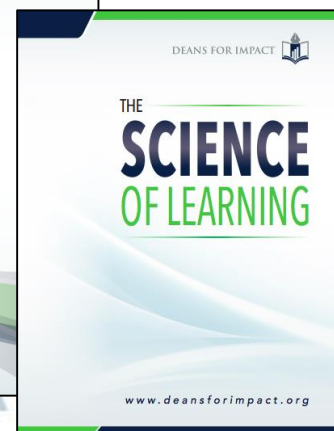## SHOTTON HALL RESEARCH SCHOOL

What makes great teaching?
Review of the underpinning research

Robert Coe, Cesare Aloisi, Steve Higgins and Lee Elliot Major
October 2014

The Sutton Trust's report into What makes great teaching:
https://www.suttontrust.com/wp-content/uploads/2014/10/What-Makes-Great-Teaching-REPORT.pdf

CEM · Durham University · THE SUTTON TRUST

The Principles of Instruction:
Original document:
http://www.ibe.unesco.org/fileadmin/user_upload/Publications/Educational_Practices/EdPractices_21.pdf

Graphical document:
https://teachinghow2s.com/docs/HOW2_Poster_Principles_of_Instruction.pdf

rchschool.org.uk
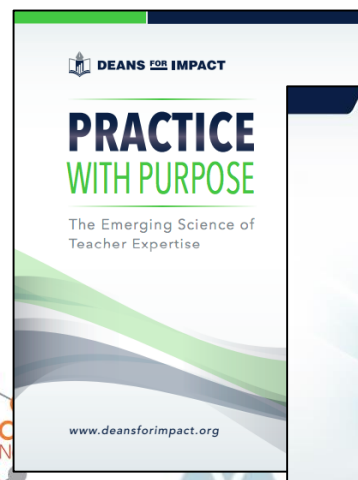
DEANS FOR IMPACT
PRACTICE WITH PURPOSE
The Emerging Science of Teacher Expertise
www.deansforimpact.org

DEANS FOR IMPACT
THE SCIENCE OF LEARNING
www.deansforimpact.org

Deans for Impact

https://deansforimpact.org/resources/the-science-of-learning/

Institute for Effective Education
owering educators with evidence

Resea Schools N

Quick quiz: How well do you know your evidence?

Technology

1. ICT enhances learning if it
   1. motivates and engages students
   2. reduces teacher workload
   3. promotes activities that are aligned with subject content
   4. provides new ways of thinking about problems
2. 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

What the evidence tells us about digital technology:

"More effective schools and teachers are more likely to use digital technology effectively"

EEF Review: The Impact of Digital Technologies on Learning.

"It is not whether technology is used or not which makes a difference but how well it is used to support effective teaching and learning"

www.shottonhall.researchschool.org.uk

Testing

2. Which of these are good times to test students' understanding of a topic?

    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

3. After studying and learning a topic, students remember most if they then spend an equivalent amount of time

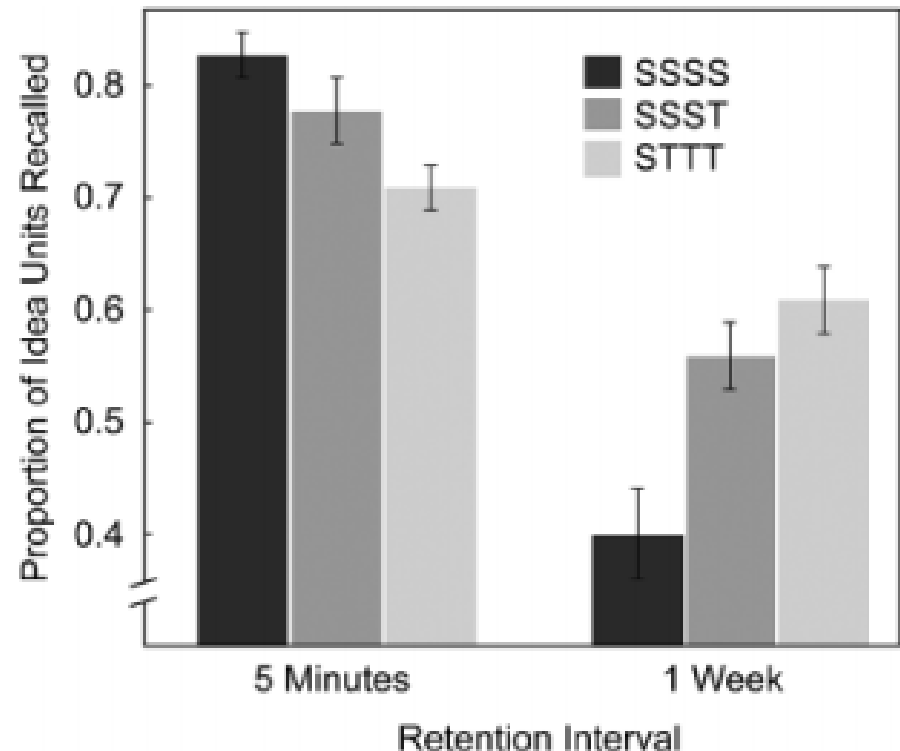   a) Studying it again in a single session

    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

What the evidence tells us about testing:

"Testing is a powerful means of improving learning, not just assessing it".

Roediger, H. L., &
Karpicke, J. D. (2006):
Test-enhanced learning

Learning styles

4. 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, kinaesthetic)
   c) nothing about their performance on learning tasks

5. 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

From Cerbin, 2010

What the evidence tells us about learning styles:

"The contrast between the enormous popularity of the Learning Styles approach within education and the lack of credible evidence for its utility is both striking and disturbing".

Cerbin: Ill conceived ideas about learning.

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

Research Schools Network

Education Endowment Foundation

Institute for Effective Education
Empowering educators with evidence

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

Research Schools Network

Education Endowment Foundation

Institute for Effective Education
Empowering educators with evidence

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

www.shottonhall.researchschool.org.uk

The #1 fact about 'what works':

It doesn't always work

Summary

- Understanding the research helps
  - Inform better decisions
  - Develop better theory of teaching and learning
- But whilst research can inform your decisions, it can't give you all the answers
- Professional learning needs support, time, expertise, etc (just like other learning)
- 'What works' may not work, so monitor and evaluate
- How can we support you?

How can we help you?

- Signpost you in right direction towards reliable evidence to inform your own bids (SSIF and TLIF).

- Offer high-quality reliable training based on the latest evidence.

- Advise and support with the design and implementation teacher-led research, including RCTs.

- Offer support in grant applications to the IEE's 'Innovation Evaluation' grants.

- Signpost to relevant research which will help support you in your school-improvement planning.

Contact details

www.shottonhall.researchschool.org.uk

Twitter: @ShottonResearch

Facebook: Shotton Hall Research School