Evidence Based Teaching: How can/do we use research and evidence in a manageable way to help each of us to become better teachers?

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Four Epochs of Education

Ascent to promised land, or back to bad old ways?

1968 Uninformed prescription
National prescription

1970s Uninformed Practice
Professional Judgement

2014
Informed prescription

Evidence rich

Why do teachers need research and evidence?

The complex nature of teaching requires that teachers have access to a broad range of strategies, skills and knowledge which can be adapted and fine-tuned to meet widely varying education contexts and pupil needs. This professional repertoire has to be informed by a body of rigorous, high-quality research and evidence rather than based on anecdotal, unproven assumptions, theories and beliefs. It is also vital that the teaching profession retains ownership of translating research findings into practice rather than allowing those outside the classroom to do so on their behalf.

#socialmedia

- Social media has changed the dissemination of research and discussion about research and use of evidence.
- Easiest way to tap into discussions.
- Don’t expect agreement.
- Rise of fake news and spin.

Comprehension is everything

Daniel Dennett: We’re entering a period of epistemological murk and uncertainty that we’ve not experienced since the middle ages...but we’re now on the verge of moving into the age of post-intelligent design and we don’t bother comprehending any more. That’s one of the most threatening thoughts to me. Because for better or for worse, I put comprehension as one of my highest ideals.

White paper: Education Excellence & EVIDENCE Everywhere

- P.13 Strong, evidence-informed profession
- We want to support teachers by fostering a world-leading, vibrant teaching profession... This will include the establishment of a new peer-reviewed British education journal, independent of government.
- We will continue to work in partnership with the Education Endowment Foundation to expand its role in improving and spreading the evidence on what works in education – including expanding its remit to support evidence-based teaching, character education, and preventing poor outcomes post-16
• P37 We will increase teachers’ access to and use of high quality evidence, ensure teachers are trained in understanding and applying evidence, and support the establishment of a new, peer-reviewed British education journal.

• 80+ mentions of evidence in 2016 WP
• 0 Mentions in 2010 WP
• 0 Research mentioned in 2010 WP
• 21 Research mentioned 2016 WP

1. Evidence informed Teaching
2. The problem with evidence
3. Evidence about the profession
4. Cognitive illusions
5. Consumer v Producer
6. Sources of evidence

Lets think about evidence?
- Teacher personality
- Class size
- Home visits
- Principal/headteacher qualities
- Computer assisted instruction
- Integrated curriculum
- Small groups
- Cooperative learning
- Questioning
- Parent involvement
- Challenging goals and showing what success looks like
- Socio-economic status
- Effective teacher strategies, teacher talk, student mentoring
- Peer achievement
- Teacher-student relationships
- Class behavior
- Formative evaluation
- Student’s own expectations for success

From...

Evidence based or informed?

To....
What Works Can Hurt: What are the side Effects in Education

- Medical research is required to investigate both the intended effects of any medical interventions and their unintended adverse effects, or side effects.
- In contrast, educational research tends to focus only on proving the effectiveness of practices and policies in pursuit of “what works.” It has generally ignored the potential harms that can result from what works.

Side Effects: Ethics?

- So what happens if you remove classroom assistants?
- What happens if you only teach using collaborative forms of learning?
- What are the negative effects of feedback, metacognition, etc.
- Therefore: “This program helps improve your students’ reading scores, but it may make them hate reading forever.” No such information is given to teachers or parents.
- “This practice can help your children become a better student, but it may make her less creative.” Parent/teachers not given information about effects and side effects of practices in schools.
- “School choice may improve test scores of some students, but it can lead to the collapse of certain schools in local areas” public has not received information about the side effects of sweeping education policies.

But what are the side effects?

Problem with evidence

- Silver bullets or rubber bullets?
- Can we apply evidence to my classroom?
- Can we apply this to Boys, Girls, different regions, different ethnicities, different SEN, different types of schools, different types of teacher, different times of day, different resource types, different ages?
- In the context of changing academies, free schools, new exams, new curricula, new assessments, new commissioners, and new grammars post brexit.

What is an evidence-informed education system?

The term evidence-informed education allows us to think about the ways in which you, the expert practitioners, use evidence, alongside your own ‘tacit’ professional knowledge, to make decisions that help to improve teaching and learning. Evidence can include research evidence as well as pupil performance and other management data. Thus research forms a key part of an ‘evidence-informed education’ system, but it is not the only part.

RCTs typically don’t tell us:

- What a good education is.
- What is right for you and your pupils.
- What is ‘best’.
- What the long term impact and negative and unintended consequences may be.

- But they are still worth considering!
What are we looking at impact on - using what?

- Knowledge?
- Understanding?
- Creativity?
- Character
- Skills?
- Attitudes?
- Wellbeing?
- Results?
- Attendance or truancy?
- Transformation?
- Retention and recall?
- Synthesis?
- (Neo)Traditional or (Neo)Progressive?
- Compliance?
- Critical thinking?
- Religion?
- Drugs?
- Philosophy

It’s NOT your fault!

Teachers are regularly expected to adopt and deliver new interventions within the classroom. However, although many of these interventions are evidence-based and have been demonstrated to be effective when piloted, they often fail to achieve the expected outcomes when implemented in the real-life context of the classroom. Implementation science has identified multiple factors that may challenge effective implementation, including barriers relating to characteristics of the intervention, the implementers, and the school environment (Durlak and Du Pre, 2008).

EVERYBODY HAS A UNTIL THEY GET PUNCHED IN THE MOUTH

A changing profession
What the evidence telling us (or not)?

Trust?

Changing teacher demographic
When?: Life Phases of Teachers (Day)

- **Professional life phase 0-3**: commitment, support and challenge
- **Professional life phase 4-7**: Identity and efficacy in classroom sub-groups
- **Professional life phase 8-15**: Managing changes in role and identity: growing tensions and transitions
- **Professional life phase 16-23**: Work life tension, challenges to motivation and commitment
- **Professional life phase 24-30**: Challenges to sustaining motivation
- **Professional life phase 31+**: Sustaining/declining motivation, ability to cope with change, looking to retire

So the evidence suggests:

- We are becoming a progressively younger profession occupied by younger teachers potentially at developing expertise of existing teachers?
- Who have accelerated pay early in career?
- With increasing professional expectations?
- Where we are generally trusted and considered underpaid by the public?
- But heavily scrutinized within schools?
- Where increasingly we are meant to be evidence informed? But where there is generally less autonomy?
- Within an emerging local and global recruitment crisis that requires solutions?

How: Being an effective teacher?

- Isn’t applying an algorithm to teaching...
- Isn’t indiscriminately applying an evidence based approach...
- Isn’t being submissive to clinical and randomized trials...
- Isn’t using limited limited scrutiny of data...

How: Being an effective teacher may involve: ‘Clinical’ Professional Reasoning

... the analytical and intuitive cognitive processes that professionals use to arrive at a best judged ethical response in a specific practice-based context. (Krievaldt and Turnidge, 2013: 106)
Cognitive illusions and bias
How we see, receive, interpret, apply evidence needs to be scrutinized

<table>
<thead>
<tr>
<th>Phenomenon &amp; Definition</th>
<th>Description</th>
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<tbody>
<tr>
<td>Formation of Illusions</td>
<td>The tendency of a person to believe erroneous beliefs or misperceptions</td>
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<tr>
<td>Formulations in Perception</td>
<td>The way in which information is perceived, often leading to false conclusions</td>
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<tr>
<td>Rationing</td>
<td>The tendency to apply certain standards or rules when interpreting evidence</td>
</tr>
<tr>
<td>Interpreting</td>
<td>The process of understanding and making sense of evidence</td>
</tr>
<tr>
<td>Reasoning</td>
<td>The process of using evidence to support arguments or claims</td>
</tr>
<tr>
<td>Categorization</td>
<td>The process of organizing information into categories for easier understanding</td>
</tr>
<tr>
<td>Attribution</td>
<td>The process of assigning causes or reasons for events</td>
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</tbody>
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Research led, evidence based or data informed does not mean picking the research evidence to confirms your preferred position.

Critiquing of all positions is essential

Conclusion
And ways forward...

Consumer, Producer or Distributor of evidence?

- **Consumer:** Teachers accessing evidence produced and synthesized by research organizations, and using the findings to inform their practice (teachers as ‘consumers’ of research).
- **Producer:** Teachers undertaking their own research, either in the form of small-scale action research, or as participants in larger projects coordinated with other schools (teachers as ‘producers’ of research).
- **Distributor:** Consumes, produces and disseminates: Professional Publications, Blogs, Twitter, Facebook, Newsletter, Journals.
- **Time?**

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Critiquing of all positions is essential
Becoming a better teaching?

i  The effective teacher – skills, content, performativity, measurement

ii  The reflective teacher – skills, content, knowledge about learners, values, purposes

iii The enquiring teacher – systematic enquiry into all of the above; research and evaluation methods and techniques

iv The transformative teacher – critical enquiry, looking beyond the classroom, social context, moral and ethical, alliances (‘stance’)

Menter, 2011; Menter et al, 2010

• Teacher agency…What, When, How?

It is Teachers who in the end, will change the world of school by understanding it.
Lawrence Stenhouse 1985