



From previous sessions

- ✓ Week one: bibliography settings
- ✓ Weeks 1 to 3: Theory and practice
- ✓ Transitioning material: John Hattie video
 - > Reflective practice role in effectiveness
- ✓ Today: Case studies for evidence-based judgement

Case Studies of Education Practice

- The potential of reflective practice is not being fulfilled
- Contexts of reflection – schools, education system, profession
- Professional learning needs to be understood in more coherent and robust ways
- Helen Timperley – evidence in the classroom
- Research evidence and theory important
- Conduct case study research



Case Study in Education

‘a case study approach is often used to build up a rich picture of an entity, using different kinds of data collection and gathering the views, perceptions, experiences and/or ideas of diverse individuals relating to the case’

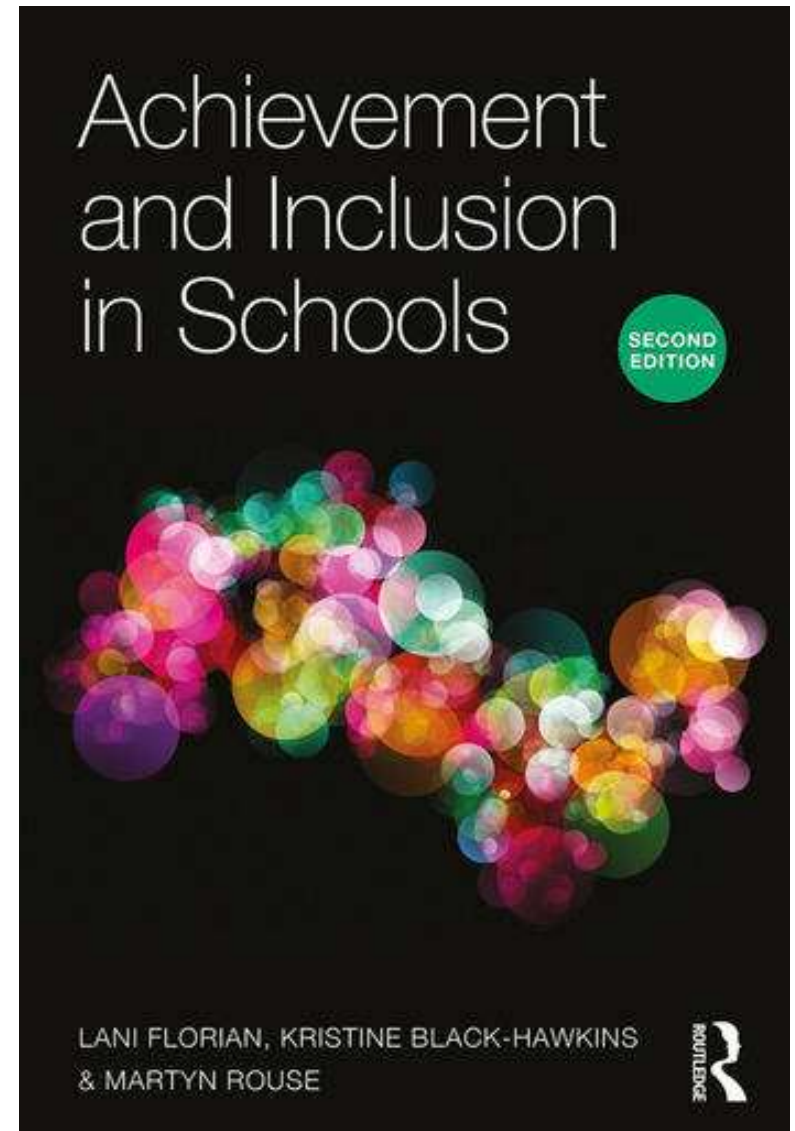


Hamilton, L. (2011) Case studies in educational research, British Educational Research Association online resource. Available online at <https://www.bera.ac.uk/publication/case-studies-in-educational-research>

Case studies

Effectiveness improves when teachers and school leaders develop themselves as **problem-solvers**

Florian, L., Black-Hawkins, K., & Rouse, M. (2016). *Achievement and inclusion in schools*. Routledge.



‘Research
shows
that.....’

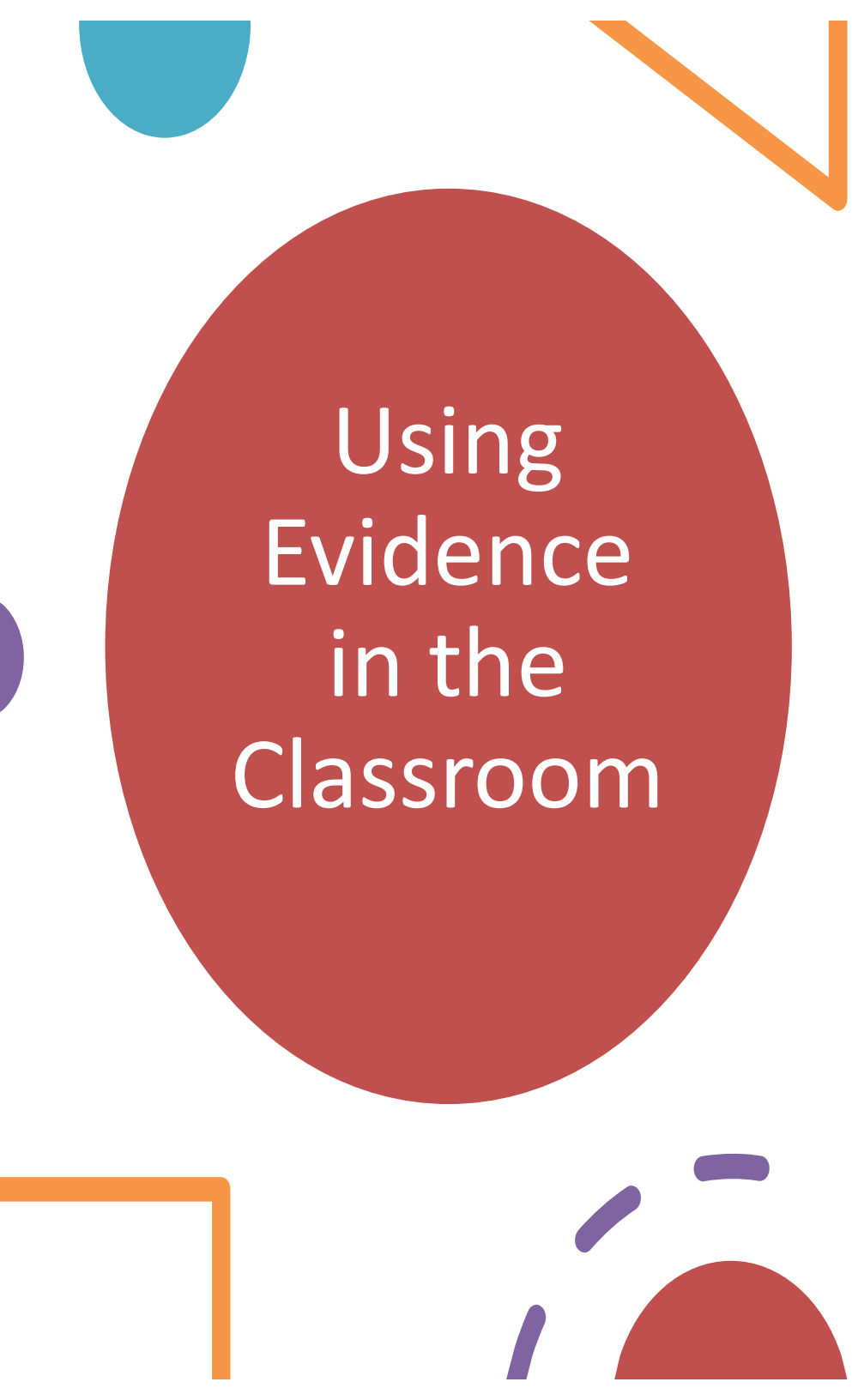
Education Endowment Foundation

<https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/flipped-learning/>

- Programmes
- Research
- Randomised Control Trials
- Evidence base in education...

Martin Hammersley (2001): Some Questions About Evidence Based Practice in Education

- Single studies....erroneous conclusions
- How to weigh contradictory evidence
- What works....chosen indicators....



Using Evidence in the Classroom

Helen Timperley:
Using Evidence in the
Classroom for
Professional Learning

What are the key
ideas which Timperley
identifies?

Using Evidence

- Formal and informal, curriculum-relevant
- Teachers reflect on own skills and knowledge
- Awareness of theory and evidence

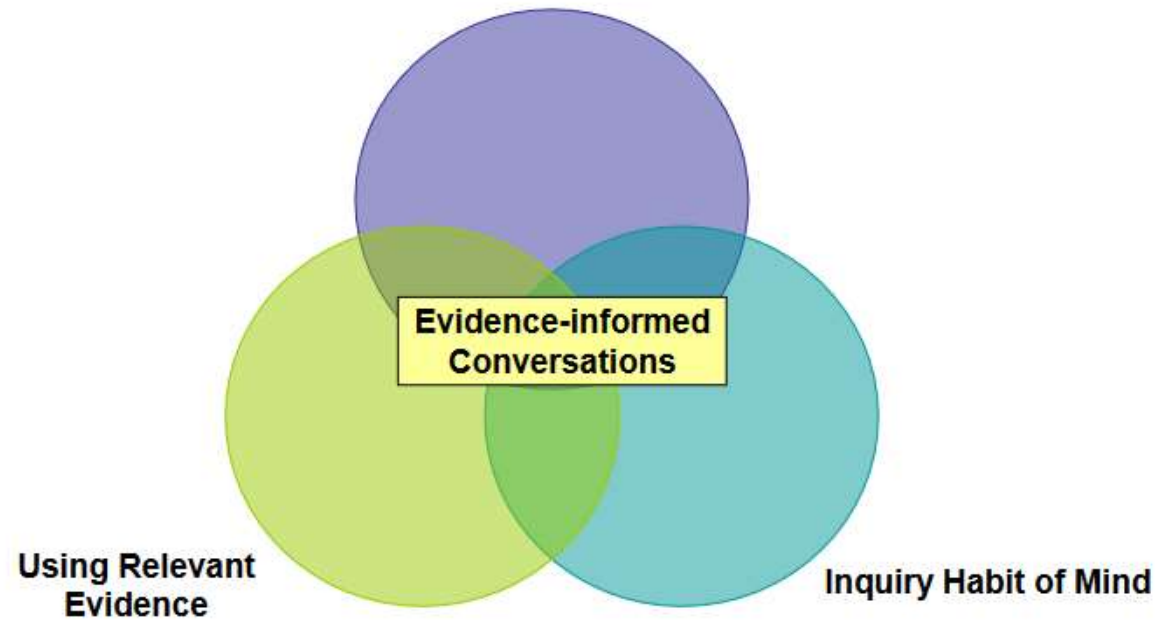
Evidence: 'None of this evidence provides absolute answers but rather potential insights in how to improve' (p. 2)

Implications

- Inquiry habit of mind – seeking out and using evidence
- All decision-making includes a certain amount of guessing
- Informs teaching and learning... 'rather than being seen as a reflection of the capability of individual students....sorting, labelling and credentialing' (p.2)

Evidence-informed conversation

Relationships of Respect and Challenge



Adpated from Earl and
Timperley (2008)



Identifying knowledge and skills learners need



Evidence – rigorous process of research/scrutiny



Contextualise understanding within schools/classrooms



Understanding of theoretical ideas underpinning practice



Multiple opportunities to learn and apply new information

Knowledge Building Cycles

Organisation, Leadership, Development

- Teachers have the greatest system influence on student outcomes
- Organisational adaptive expertise
- Changing mind sets – leaders to see school as their classroom
- ‘Teachers cannot be expected to do this alone, but require organisational conditions that provide and support these learning opportunities in ways that are just as responsive to how teachers learn as they are to how students learn’ (p. 10).



Communication and Relationships

Teachers develop collaboratively

‘An ongoing process of inquiry in which they con-construct their understandings about effective practice.’


Open-mindedness – listen, different perspectives, alternative possibilities.

Responsibility – personal, academic and social consequences of actions

Wholeheartedness – critically examine assumptions with the intention of learning something new



Interactive Professionalism

- Discretionary judgement
 - Collaborative work cultures
 - Continuous improvement
 - Reflection in, on and about practice
 - Mastery, efficacy and satisfaction
 - ‘Real’ collaboration – includes risk of conflict
 - Critical friend
 - Coach
 - External partner
- 



Emotional Intelligence

- Self-awareness
- Self-management
- Social awareness
- Relationship management

Models of Professional Learning

Model I—what we do

Guiding principles [governing variables]

- Achieve the purpose as the actor defines it
- Win, do not lose
- Suppress negative feelings/ Emphasis rationality

Action strategies

- Control environment and task unilaterally
- Protect self and others unilaterally

Consequences

- Defensive relationships
- Low freedom of choice
- Little public testing of ideas
- Reduced production of valid information
- Single-loop learning

Model II – what we want to do

Guiding principles [governing variables]

- Valid information
- Free and informed choice
- Internal commitment to the choice and
- constant monitoring of its implementation

Action strategies

- Control environment and task bilaterally
- Protect self and others bilaterally

Consequences

- Minimally defensive relationships
- High freedom of choice
- Public testing of ideas
- Increased production of valid information
- Increased likelihood of double-loop learning



Problem Based Methodology

Evaluation of:

- Accuracy of any claims
- Effectiveness of practice
- Coherence in solution and creation of problems
- Improvability – openness to feedback and change

Discussion

What do the two texts suggest about what reflective practice *is* and *how* it can be best developed to support developments of practice?

Early Careers Framework(ECF) and 'Official Research'

- Adesope, O. O., Trevisan, D. A., & Sundararajan, N. (2017) Rethinking the Use of Tests: A Meta-Analysis of Practice Testing. *Review of Educational Research*, 87(3), 659–701. <https://doi.org/10.3102/0034654316689306>.
- Agarwal, P. K., Finley, J. R., Rose, N. S., & Roediger, H. L. (2017) Benefits from retrieval practice are greater for students with lower working memory capacity. *Memory*, 25(6), 764–771. <https://doi.org/10.1080/09658211.2016.1220579>.
- Allen, B. and Sims, S. (2018) *The Teacher Gap*. Abingdon: Routledge.
- Baddeley, A. (2003) Working memory: looking back and looking forward. *Nature reviews neuroscience*, 4(10), 829-839.
- Chi, M. T. (2009) Three types of conceptual change: Belief revision, mental model transformation, and categorical shift. In *International handbook of research on conceptual change* (pp. 89-110). Routledge.
- Clark, R., Nguyen, F. & Sweller, J. (2006) *Efficiency in Learning: Evidence-Based Guidelines to Manage Cognitive Load*. John Wiley & Sons.
- Cowan, N. (2008) What are the differences between long-term, short-term, and working memory? *Progress in brain research*, 169, 323-338.
- Deans for Impact (2015) *The Science of Learning* [Online] Accessible from: <https://deansforimpact.org/resources/the-science-of-learning/>. [retrieved 10 October 2018].
- Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2013) Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psychological Science in the Public Interest*, Supplement, 14(1), 4–58. <https://doi.org/10.1177/1529100612453266>.
- Education Endowment Foundation (2018) *Improving Secondary Science Guidance Report*. [Online] Accessible from: <https://educationendowmentfoundation.org.uk/tools/guidance-reports/> [retrieved 10 October 2018].
- Gathercole, S., Lamont, E., & Alloway, T. (2006) Working memory in the classroom. *Working memory and education*, 219-240.
- Kirschner, P., Sweller, J., Kirschner, F. & Zambrano, J. (2018) From cognitive load theory to collaborative cognitive load theory. In *International Journal of Computer-Supported Collaborative Learning*, 13(2), 213-233.
- Pachler, H., Bain, P. M., Bottge, B. A., Graesser, A., Koedinger, K., McDaniel, M., & Metcalfe, J. (2007) *Organizing Instruction and Study to Improve Student Learning*. US Department of Education.
- Pan, S. C., & Rickard, T. C. (2018) Transfer of test-enhanced learning: Meta-analytic review and synthesis. *Psychological Bulletin*, 144(7), 710–756. <https://doi.org/10.1037/bul0000151>.
- Roediger, H. L., & Butler, A. C. (2011) The critical role of retrieval practice in long-term retention. *Trends in Cognitive Sciences*, 15(1), 20–27. <https://doi.org/10.1016/j.tics.2010.09.003>.
- *Rosenshine, B. (2012) Principles of Instruction: Research-based strategies that all teachers should know. *American Educator*, 12–20. <https://doi.org/10.1111/j.1467-8535.2005.00507.x>.
- Simonsmeier, B. A., Flaig, M., Deiglmayr, A., Schalk, L., & Well-being, S. (2018) Domain-Specific Prior Knowledge and Learning: A Meta-Analysis Prior Knowledge and Learning. Accessible from: <https://www.psycharchives.org/handle/20.500.12034/642>
- Sweller, J. (2016). Working Memory, Long-term Memory, and Instructional Design. *Journal of Applied Research in Memory and Cognition*, 5(4), 360–367. <http://doi.org/10.1016/j.jarmac.2015.12.002>.
- Willingham, D. T. (2009) *Why don't students like school?* San Francisco, CA: JosseyBass.
- Wittwer, J., & Renkl, A. (2010) How Effective are Instructional Explanations in Example-Based Learning? A Meta-Analytic Review. *Educational Psychology Review*, 22(4), 393–409. <https://doi.org/10.1007/s10648-010-9136-5>.

Education 'Science'

Psychology

Neuro-psychology

Ideological: 'hard'
'evidence'

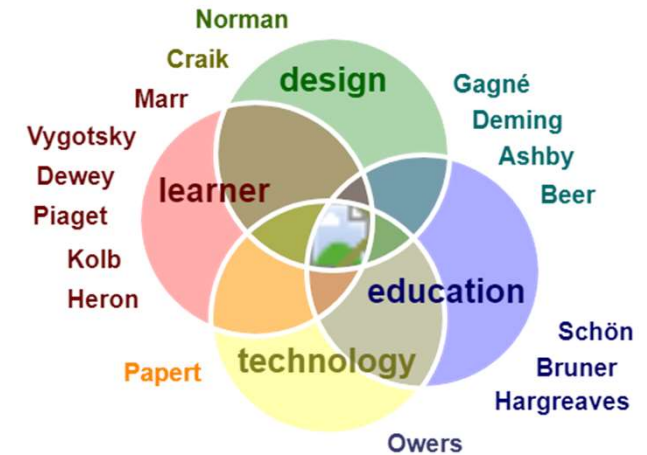
OFSTED and
expectations of
'research'

Teacher Education
and Teacher
Professionalism

'Capacity to
evaluate research
evidence and
methodologies'

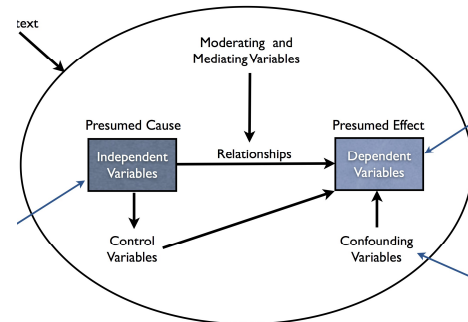
Seminar Group Discussion

- Introduce the conceptual framework of reflective practice for effective teaching, learning and assessment.



Conceptual Framework Fundamental

Note 1: Two Benefits are Focusing and Bounding the Study



Note 2: Variables and Relationships are Identified from Theory and Experience

