Stepping stones and springboards: the nature and role of research based tools in closing the gap

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This session

- Some research headlines re tools
- A case study to surface what we know already
- Key findings from research about tools
- An example
- Key findings from research about CPDL and its interface with tools
- A metaphor
- Spotting where we might apply this

Robinson on leadership

- Best Evidence Synthesis (BES) of the research about leadership contributions linked with learner success
- No clear measures of leadership effectiveness – leadership research is always challenging
- Key things to remember about systematic reviews:
  - o The care taken to be comprehensive
  - o Process of selecting, analysing and filtering the most reliable studies – included studies not just any old studies
  - o Transparency
  - o Are accurate at scale; individual experiences may differ.
- So this is the best evidence we have

Effect sizes for leadership interventions

- Promoting and participating in teacher learning (0.84)
- Planning, coordinating and evaluating teaching and the curriculum (0.42)
- Establishing goals and expectations (0.35)
- Strategic resourcing- *alignment and tools* (0.34)
- Ensuring an orderly and supportive environment (.27)

http://www.curee.co.uk/resources/publications/robinson-summary

Tools

- Thinking and research about leadership often focuses on personal characteristics and human interactions.

- Robinson's also focuses on "the ways leaders shape the situations people work in". She says that:

  > "one of the most powerful means for doing this – observed in the studies that underpin this chapter – is to develop or introduce tools or routines that assist teacher learning"

- She uses Spillane's definition of tools as "externalised representations *of ideas* that people use in practice"

- So tools encompass schemes of work, an approach to phase/departmental meetings, a reading scheme, an approach to AFL, a homework or marking policy

- Here is an example

A case study
making algebra meaningful by changing classroom culture (Alf Coles)

Aim: deep engagement with algebra

Researched, with his class, what great algebraists had achieved and done e.g.

- think for themselves,
- notice and write about what they are doing,
- ask why things work,
- look for patterns etc.

- Alf designed learning tasks to generate/make visible these behaviours...
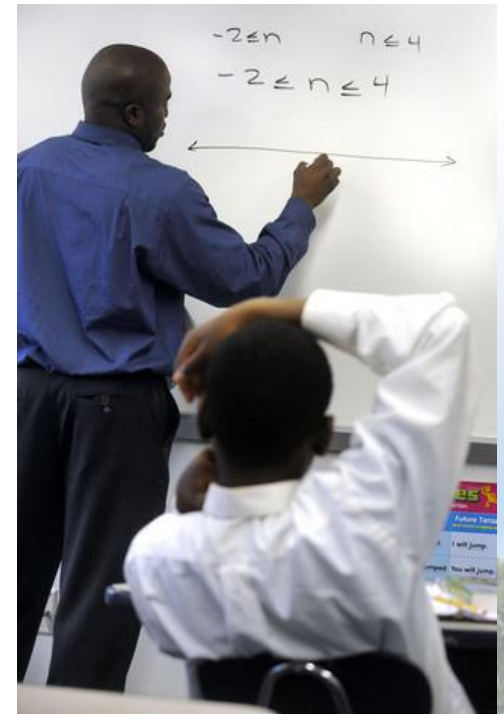
Classroom culture changes via:

Setting up *Common Boards* where students individually and collectively:

o Posted & picked up others' work to complete

o Posted work for peer marking against frameworks

o Recorded results and thinking for others to analyse/classify

o Identified patterns in working strategies and common mistakes.
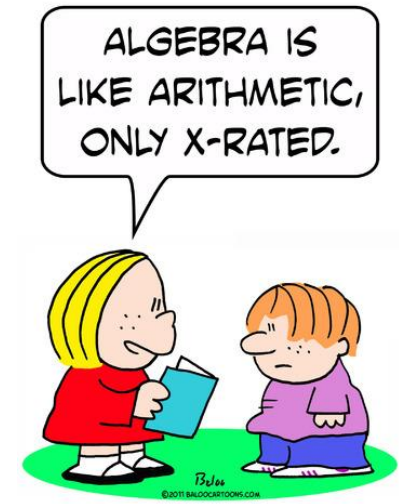
Results

After 15 weeks all the students were:

- o Recording and thinking about their mathematical thinking
- o Using symbols to express their own ideas
- o Asking "can we do this for 'n'" in problem solving
- o Understanding algebraic statements in different contexts and identifying what was useful and efficient
- o Equivalent of GCSE level in algebra in year 7.

  http://www.ntrp.org.uk/node/205

Some questions…

- What might this example of research and enquiry based tools tell us about the characteristics of effective tools?

- What tools do you notice Alf using? With what effect?

  - What were the underpinning ideas he wanted to operationalise?

  - What routines or protocols do you notice?

The nature of Robinson's "smart" tools

- The benefit of tools *is their capacity to embody knowledge and ideas* in ways that shape/scaffold actions for coherence
- She explores tools with evidence of success showing they are:
  - Underpinned by evidence/research based knowledge
  - Designed around sound theories re both goals and process
  - Define what good practice looks like
  - Take account of/manage the cognitive load
  - Scaffold navigation of complexity to focus effort on depth e.g. by incorporating ways of surfacing changes in understanding, actions and skills.

An example of an evaluation of a syllabus against these criteria

Design criteria	Rationale for criteria	Application to 1997 social studies curriculum[339]
Clearly explains the rationale for change.	Draws attention to the underlying purposes to counteract the tendency to attend only to surface features of	The national curriculum includes 44 separate statements with no integrative discussion, leaving it up to implementing
Incorporates misconception alerts.	Counters possible over-assimilation by indicating how the new policy differs from prior or taken-for-granted understandings; indicates what the policy both is and is not.	The difference between the previous focus on people and the new focus on society was neither made explicit nor explained.
Abstract principles are clearly connected to spatially contiguous detail and examples.	Embeds principles in details that teachers are most likely to attend to.	Examples illustrating how the achievement objectives might be met were removed from document in its draft stage due to political pressures.

Eight key CPDL processes to enable research to make a difference in classrooms

CPDL is a core tool. Systematic reviews tell us that effective CPDL involves sustained, iterative, aligned combinations of evidence-rich:

- o Access to specialist expertise e.g. via research/evaluation

- o Peer supported dialogue re learner responses to changes

- o Exploration of disruptions, assumptions & beliefs

- o Developing practice and theory side by side.

Eight key CPDL processes to enable research to make a difference in classrooms

Sustained, iterative, aligned combinations of evidence rich:

- o Focus on aspirations for learners/students

- o AFL for teachers

- o Support via professional learning tools.

http://www.curee.co.uk/news/2015/06/developing-great-teaching-new-report-effective-teachers-professional-development

Stepping stones – tools for moving from knowing to doing – for pulling the learning through from research

CUREE's approach to closing the gap via research based tools

- One key focus for CUREE is supporting this systematically at whole school level by creating research route maps:
  - Making the research underpinning priorities accessible; and
  - Contextualising review and research findings.

- Curated, cumulative suites of tools:
  - Organised around systematic review findings
  - Providing a differentiated pathway through relevant research
  - Around a chosen topic
  - To help teachers understand and test the research for their context.

From simple beginnings in 2013…

Challenge

On this line you will find a range of useful resources to support you in promoting challenge for all your students.

Zone 1 - Gain an overview of the evidence

Zone 2 - Explore the research evidence in more detail and collect evidence from your pupils

Zone 3 - Find out how other teachers have developed their practice

Creating a safe to fail ethos

Encouraging persistence through effective use of praise

Accelerating pupils' thinking skills

Teaching and learning mathematics using an enquiry approach

Improving boys' independent learning skills in English

Developing independent problem solving

Introduction to the challenge line

Key strategies for constructing challenge for all pupils

Encouraging pupils to persevere with learning challenges

Helping pupils to think for and challenge themselves

Key strategies for planning for challenge

Promoting learner persistence

Challenging underachieving gifted and talented pupils through peer coaching

Supporting pupils in challenging each other

Uncovering pupils' misconceptions

Strategies for challenging gifted and talented

Silence and presence

Holy Rosary case studies

Transforming teaching to promote independent learning

Enquiry-based science teaching

Zone 1 | **Zone 2** | **Zone 3**

Key

○ Bites - short and engaging PowerPoints

⬠ Teacher research summaries

△ TRIPS - practitioner friendly summaries

● Extract from a research report

☐ Tasters - micro enquiry tools to try with your students

▽ Research article

★ Overviews and links to longer research reports with case studies

✪ Introduction to the line

...to more complex achievements in 2016

Holy Rosary Route Map - 2016

http://www.curee.co.uk/block-content/route-maps-sample
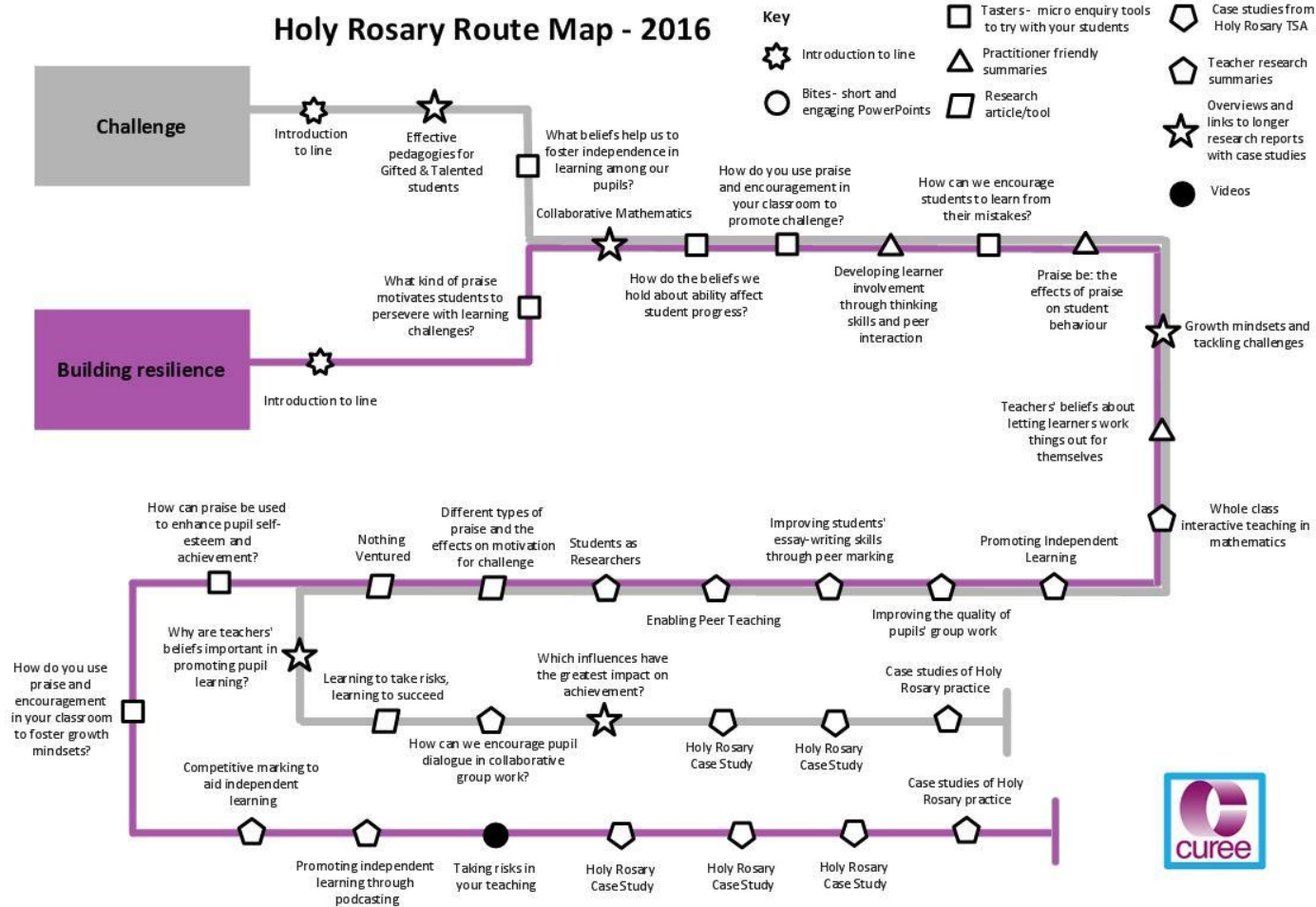
What are the different tools?

- There are five major types of resource which CUREE typically uses in the creation of Research Route Maps:

  - Micro-enquiry tools
  - Research summaries of 3 different lengths/ depths – Bites, Digests, illustrated summaries of findings plus theory
  - Supported theory illustrated by case studies for teachers
  - Quality assured, teacher or school leader-researched case studies
  - Videos

- … supplemented with action planning frameworks, reporting frameworks focused on a particular topic.

CPDL's contribution
to school improvement

- Where might using tools to close the gap between practice and research make most difference to you?

- Here's a crude starter for ten to take away.

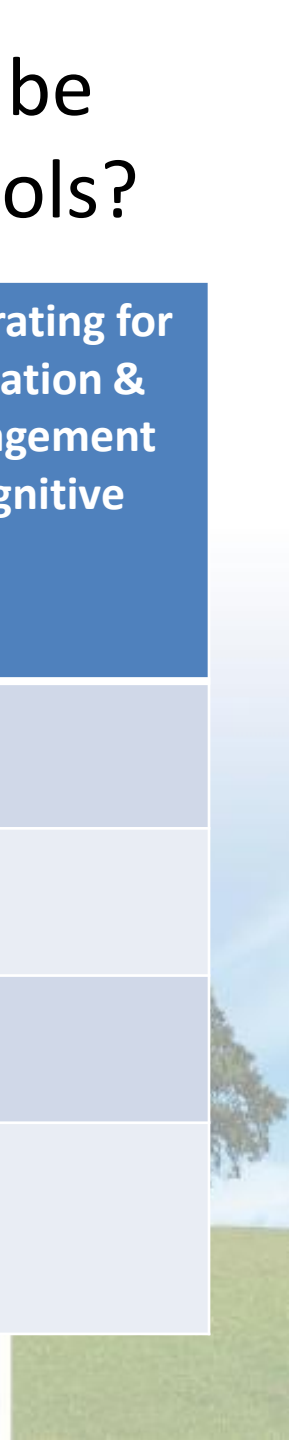# What structures do we use that might be strengthened through research based tools?

| Informal CPDL activities	Rag rating for clarity of goals/ explicitness of the tools to scaffold use	Red, amber, green for clarity re underpinning theory &/ or evidence	Red, amber, green for how far engagement with evidence is embedded	RAG rating for evaluation & management of cognitive load
School model of pedagogy				
Departmental/phase meetings				
Schemes of learning				
Curriculum resources				
Supplementary interventions				

What structures do we have that might be strengthened through research based tools?

Informal CPDL activities	Rag rating for clarity of goals/ explicitness of the tools to scaffold use	Rag rating for clarity re underpinning theory &/ or evidence	RAG rating for embedding evidence collection	RAG rating for evaluation & management of cognitive load
Whole school CPD sessions				
Performance review				
Coaching sessions				
Learning walks/ monitoring systems				

What do we know about CPDL that helps us focus tools for closing the gap?
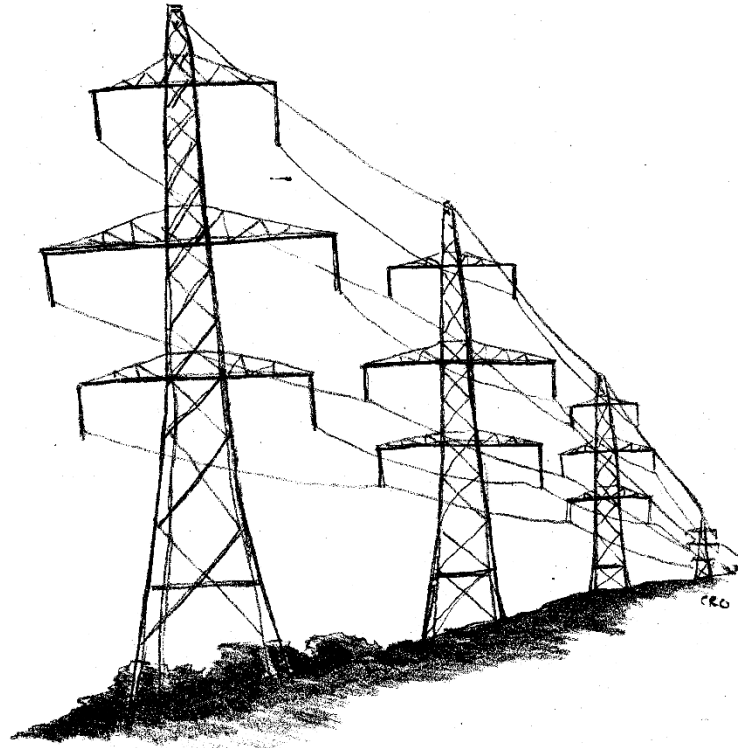
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