

Evidence into action – feedback and metacognition

Dr Tanya Vaughan, 16 October 2018



**EVIDENCE
FOR LEARNING**

Acknowledgement of Country

We acknowledge and pay respect to the past, present and future traditional custodians and elders of this country on which we meet.



Outline of workshop

- Feedback
- Teaching & Learning Toolkit
- AITSL feedback materials
- AITSL website walkthrough
- Metacognition and self-regulation
- Questions

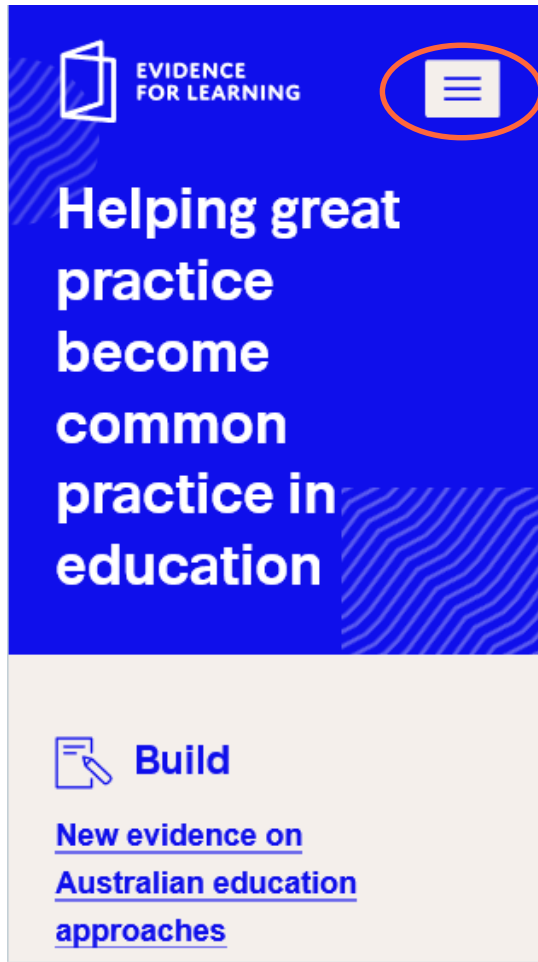


QUIZ



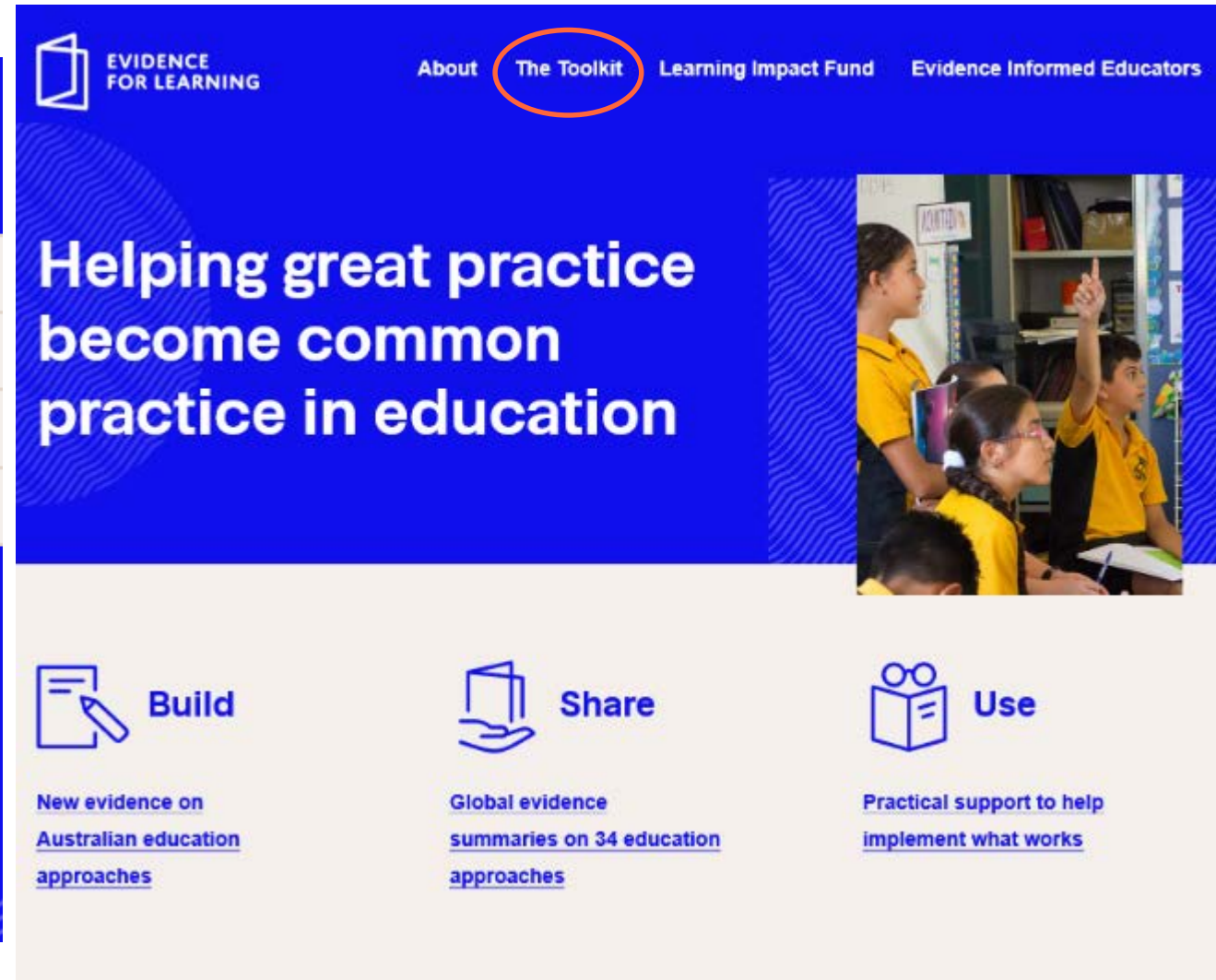
Accessing the Teaching & Learning Toolkit

Tablet or phone



The mobile app interface features a blue header with the 'EVIDENCE FOR LEARNING' logo and a hamburger menu icon circled in orange. The main content area has a blue background with white text: 'Helping great practice become common practice in education'. At the bottom, there is a light grey section with a document icon and the text 'Build New evidence on Australian education approaches'.

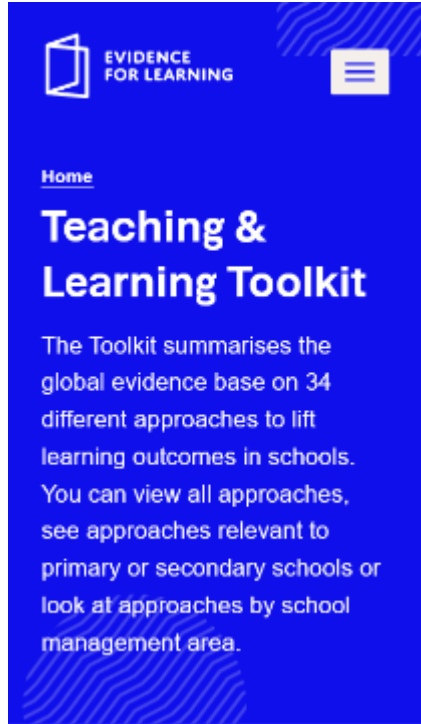
Laptop



The laptop website interface has a blue header with the 'EVIDENCE FOR LEARNING' logo and navigation links: 'About', 'The Toolkit' (circled in orange), 'Learning Impact Fund', and 'Evidence Informed Educators'. The main content area features a large blue section with the text 'Helping great practice become common practice in education' and a photo of students in a classroom. Below this, there are three columns of content: 'Build' (New evidence on Australian education approaches), 'Share' (Global evidence summaries on 34 education approaches), and 'Use' (Practical support to help implement what works).

The Teaching & Learning Toolkit

Tablet or phone

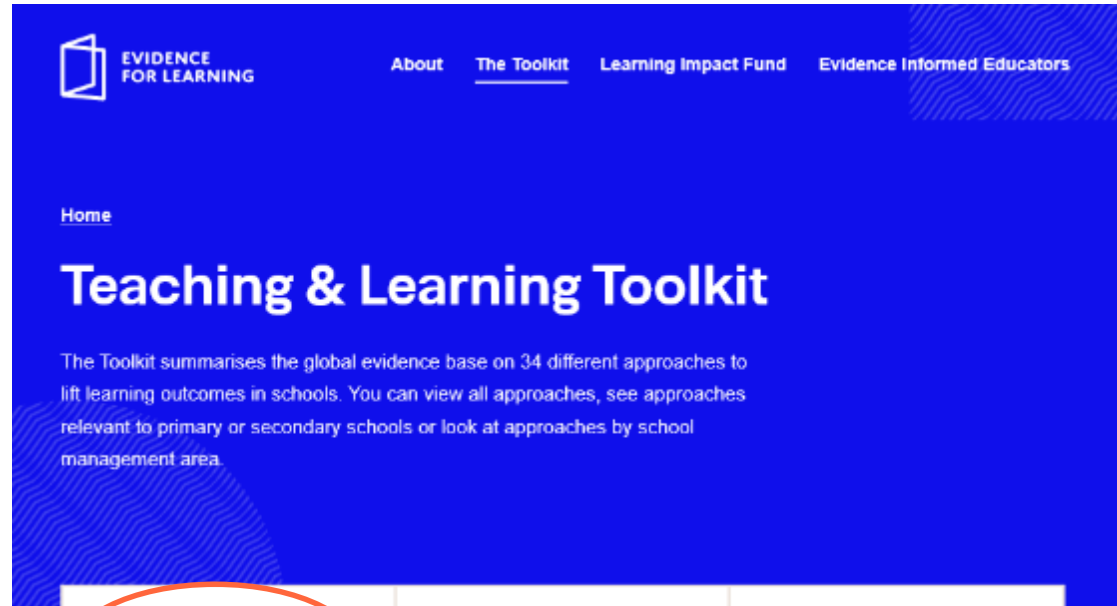


All Approaches - Full Toolkit

Approaches by school stage

Approaches by organisation

Laptop



All Approaches - Full Toolkit

Approaches by school stage

Approaches by organisation

Australasian Research Summaries

About the Toolkit

Using the Toolkit

Toolkit implementation materials

Sort by Name –

Average cost –

Evidence security –

Months' impact ▾

Feedback	\$ \$ \$ \$ \$	🔒 🔒 🔒 🔒 🔒	+8
Metacognition and self-regulation	\$ \$ \$ \$ \$	🔒 🔒 🔒 🔒 🔒	+7
Reading comprehension strategies	\$ \$ \$ \$ \$	🔒 🔒 🔒 🔒 🔒	+6
Collaborative learning	\$ \$ \$ \$ \$	🔒 🔒 🔒 🔒 🔒	+5
Early years interventions	\$ \$ \$ \$ \$	🔒 🔒 🔒 🔒 🔒	+5
Homework (Secondary)	\$ \$ \$ \$ \$	🔒 🔒 🔒 🔒 🔒	+5
Mastery learning	\$ \$ \$ \$ \$	🔒 🔒 🔒 🔒 🔒	+5

Average cost

The approximate cost of implementing an approach.

Evidence security

Based on the quantity and the methodological quality of the available evidence, and the reliability or consistency of impact estimates.

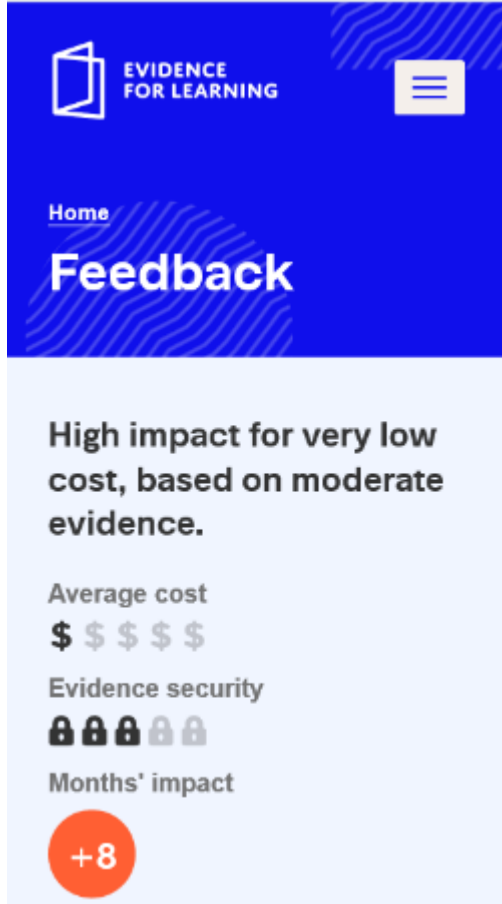
Months' impact

The additional months' progress you can expect students to make as a result of an approach being used.



Approach summary

Tablet or phone



What is it?

Feedback is information given to the learner and/or the teacher about the learner's performance

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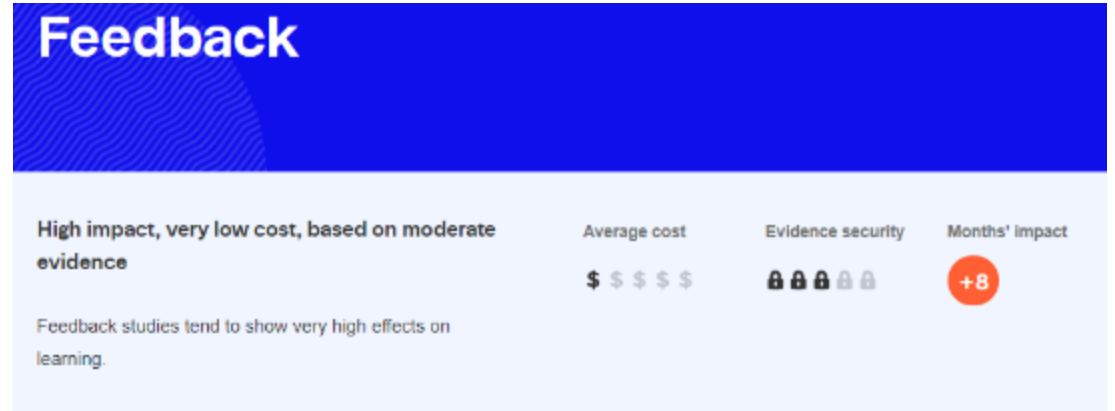
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Further reading

[Feedback - Australasian Research Summary](#)
[Feedback implementation materials](#)

Laptop



What is it?

Feedback is information given to the learner and/or the teacher about the learner's performance relative to learning goals. It should aim towards (and be capable of producing) improvement in students' learning. Feedback redirects or refocuses either the teacher's or the learner's actions to achieve a goal, by aligning effort and activity with an outcome. It can be about the learning activity itself, about the process of activity, about the student's management of their learning or self-regulation or (the least effective) about them as individuals. This feedback can be verbal, written, or can be given through tests or via digital technology. It can come from a teacher or someone taking a teaching role, or from peers.

How effective is it?

Feedback studies tend to show very high effects on learning. However, it also has

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Definition

Feedback is information given to the learner and/or teacher about the learner's performance relative to learning goals or outcomes. It should aim to (and be capable of) producing improvement in students' learning. Feedback redirects or refocuses either the teacher's or the learner's actions to achieve a goal, by aligning effort and activity with an outcome. It can be about the output of the activity, the process of the activity, the student's management of their learning or self-regulation, or them as individuals. This feedback can be verbal or written, or can be given through tests or via digital technology. It can come from a teacher or someone taking a teaching role, or from peers.

Search terms: feedback; formative evaluation; assessment for learning; feedback interventions. corrective feedback.

Evidence Rating

There are seven meta-analyses of feedback and feedback interventions which have consistently found high average effects of feedback on learning and academic performance. Only two of these have been conducted in the last 10 years. Many of the studies included are small scale studies from psychology which demonstrate theoretical principles, but which may be difficult to generalise to educational practice. Larger scale educational studies tend to have lower effects. The meta-analyses include a very wide range of effects. Overall the evidence is rated as moderate.

References

- Bangert-Drowns, R. L., Kulik, C. L. C., Kulik, J. A., & Morgan, M. (1991). [The instructional effect of feedback in test-like events](#). Review of Educational Research, 61(2), 213-238 (1991)
- Bennett, R.E. (2011). [Formative assessment: a critical review](#). Assessment in Education: Principles, Policy & Practice, 18: 1, 5-25 (2011)
- Black P. & William, D. (1998). [Assessment and classroom learning](#). Assessment in Education, 5, pp. 7-73 (1998)
- Black, P. & William, D. (2009). [Developing the theory of formative assessment](#). Educational Assessment, Evaluation and Accountability 21 1, pp 5-31 (2009)
- Bloom, B.S., Hastings, J.T. & Madaus, G.F. (eds.) (1971). [Handbook on the Formative and Summative Evaluation of Student Learning](#). McGraw-Hill, New York (1971)
- Fuchs, L.S. & Fuchs, D. (1986). [Effects of systematic formative evaluation A meta-analysis](#). Exceptional Children, 53.3 pp 199-208 (1986)
- Graham, S., Hebert, M., & Harris, K. R. (2015). [Formative Assessment and Writing](#). The Elementary School Journal, 115(4), 523-547 (2015)
- Hattie, J. and Timperley, H. (2011). [The Power of Feedback](#). (2011)
- Kingston, N. & Nash, B. (2011). [Formative Assessment: A Meta-Analysis and Call for Research](#). (2011)

Summary of effects

Meta-analyses	Effect size	FSM effect size	Measure*
Bangert-Drowns, R. L., Kulik, C. L. C., Kulik, J. A., & Morgan, M. (1991)	0.26	-	
Fuchs, L.S. & Fuchs, D. (1986)	0.72	-	
Graham, S., Hebert, M., & Harris, K. R. (2015)	0.61	-	Writing
Kingston, N. & Nash, B. (2011)	0.20	-	(AFL)
Kluger, A. N., & DeNisi, A. (1996)	0.41	-	
Lysakowski, R.S., & Walberg, H.J. (1982)	0.97	-	
Tenenbaum, G., & Goldring, E. (1989)	0.72	-	
Effect size (weighted mean)	0.63		

* The right hand column provides detail on the specific outcome measures or, if in brackets, details of the intervention or control group.

For more information about the effect sizes in the Toolkit, click [here](#).

Meta-analyses abstracts

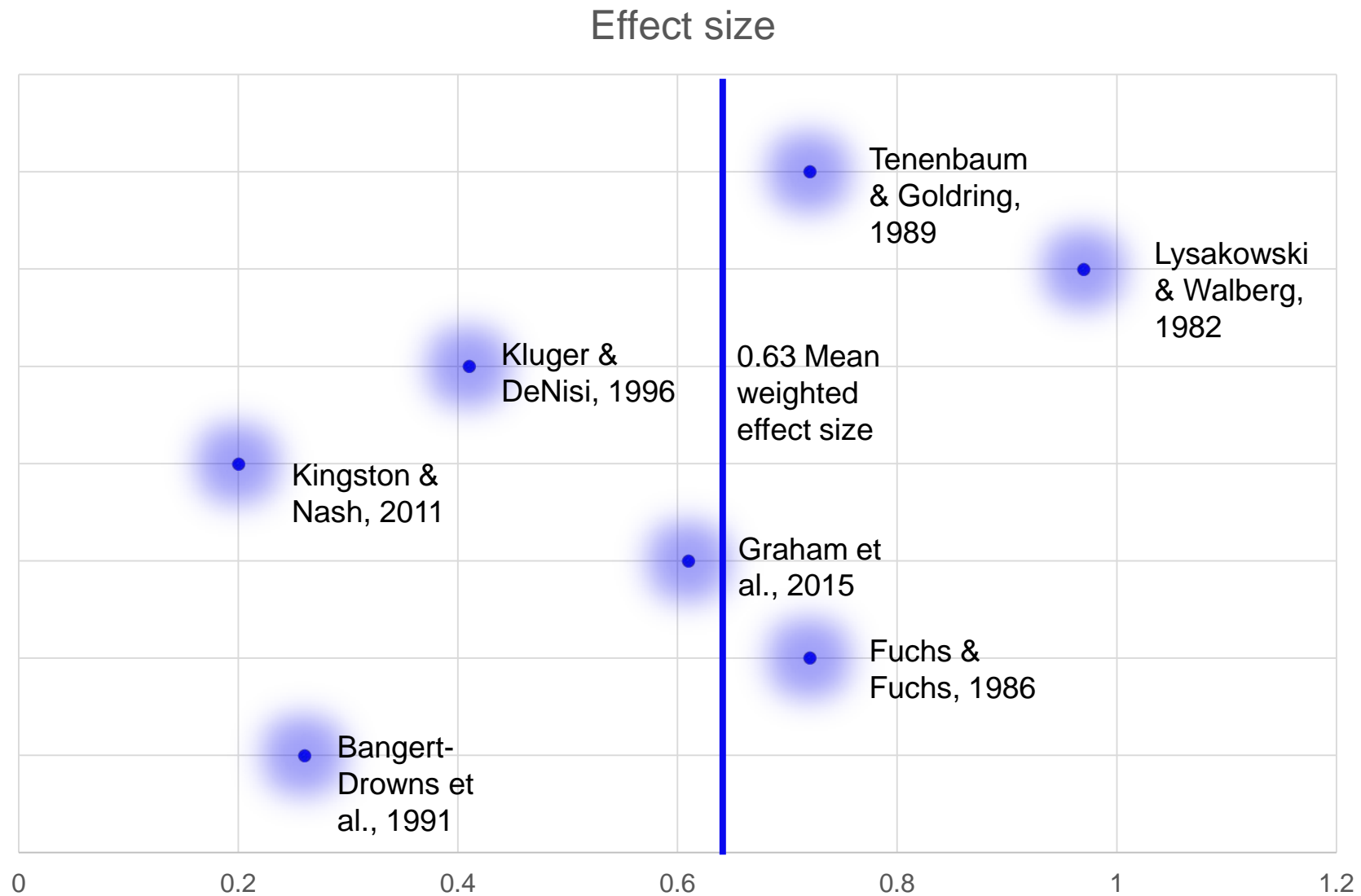
1. Bangert-Drowns, R. L., Kulik, C. L. C., Kulik, J. A., & Morgan, M. (1991)

Feedback is an essential construct for many theories of learning and instruction and an understanding of the conditions for effective feedback should facilitate both theoretical development and instructional practice. In an early review of feedback effects in written instruction Kulhavy (1977) proposed that feedback's chief instructional significance is to correct errors. This error-correcting action was thought to be a function of presentation timing, response certainty and whether students could merely copy answers from feedback without having to generate their own. The present meta-analysis reviewed 58 effect sizes from 40 reports. Feedback effects were found to vary with for control for pre-search availability, type of feedback, use of pre-tests and type of instruction and could be quite large under optimal conditions. Mediated intentional feedback for retrieval and application of specific knowledge appears to stimulate the correction of erroneous responses in situations where its mindful (Solomon & Globerson, 1987) reception is encouraged.

2. Fuchs, L.S. & Fuchs, D. (1986)

While the aptitude treatment interaction (ATI) approach to educational measurement emphasizes establishing salient learner characteristics, systematic formative evaluation provides ongoing evaluation for instructional program modification. Systematic formative evaluation appears more tenable than ATI for developing individualized instructional programs. This meta-analysis investigates the effects of educational programs on student achievement. Twenty-one controlled studies generated 95 relevant effect sizes, with an average effect size of .72. The magnitude of effect size was associated with publication type, data evaluation methods, and use of behaviour modification. Findings indicate that unlike reported ATI approaches to individualization, systematic formative evaluation procedures reliably increase academic achievement. This suggests that, given an adequate measurement methodology, practitioners can inductively formulate successful individualized educational programs.

Feedback



Approach summary

Tablet or phone

EVIDENCE FOR LEARNING

Home

Feedback

High impact for very low cost, based on moderate evidence.

Average cost
\$ \$ \$ \$ \$

Evidence security
🔒 🔒 🔒 🔒 🔒

Months' impact
+8

What is it?

Feedback is information given to the learner and/or the teacher about the learner's performance

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Laptop

Feedback

High impact, very low cost, based on moderate evidence

Average cost
\$ \$ \$ \$ \$

Evidence security
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+8

Feedback studies tend to show very high effects on learning.

What is it?

Feedback is information given to the learner and/or the teacher about the learner's performance relative to learning goals. It should aim towards (and be capable of producing) improvement in students' learning. Feedback redirects or refocuses either the teacher's or the learner's actions to achieve a goal, by aligning effort and activity with an outcome. It can be about the learning activity itself, about the process of activity, about the student's management of their learning or self-regulation or (the least effective) about them as individuals. This feedback can be verbal, written, or can be given through tests or via digital technology. It can come from a teacher or someone taking a teaching role, or from peers.

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Australasian Research Summary

Summary of Australian and New Zealand Research

References

Databases searched

Search terms

Feedback

Australasian Research Summary



The summary below presents the research evidence on feedback in the Australasian context.

The Teaching & Learning Toolkit focuses on impact; it presents an estimate of the average impact of feedback on learning progress, based on the synthesis of a large number of quantitative studies from around the world.

This page offers a summary and analysis of individual Australasian studies on feedback. In contrast to the Toolkit it includes studies which do not estimate impact, but instead investigate the implementation of interventions and how they are perceived by school leaders, teachers and students. This information is valuable for school leaders and teachers interested in finding out more about particular examples of feedback interventions that have been delivered in Australia and New Zealand.

Melbourne Graduate School of Education (MGSE) generated this summary and it is current for June 2016.

Summary of Australasian Research

No studies yet have examined the application of feedback models in Australian schools, despite the emergence of more general Australian research on feedback. One expert review discusses new ways of conceptualising feedback, with an emphasis on how it influences learning (Boud, 2015).

Most studies on feedback have examined the adaptation of the Black and Williams (1998) or Hattie and Timperley (2007) models of feedback in higher education, business, or computer science. These studies, however, are not relevant to feedback as a school-based intervention.

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Feedback

High impact for very low cost, based on moderate evidence.

Feedback studies tend to show very high effects on learning.

Average cost

\$ \$ \$ \$ \$

Evidence security



Months' impact

+8

5.2

Provide feedback to students on their learning

Demonstrate an understanding of the purpose of providing timely and appropriate feedback to students about their learning.

1.2

Understand how students learn

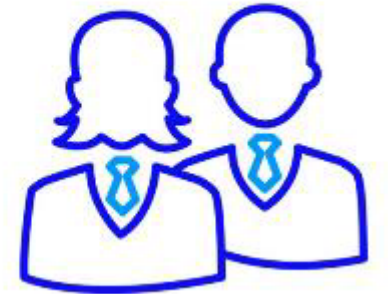
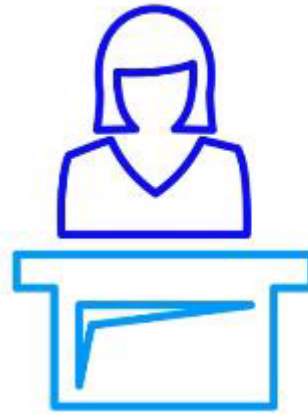
Demonstrate knowledge and understanding of research into how students learn and the implications for teaching.

Feedback

How would you define feedback?

What are the different categories of feedback you can give to students (e.g. what are the different areas feedback can focus on?)

Enter your answer into the chat box.



A trusting relationship for feedback

In the end, it all comes down to the relationship between the teacher and the student. To give effective feedback, the teacher needs to know the student - to understand what feedback the student needs right now. And to receive feedback in a meaningful way, the student needs to trust the teacher - to believe that the teacher knows what he or she is talking about and has the student's best interests at heart. Without this trust, the student is unlikely to invest the time and effort needed to absorb and use the feedback.

The only thing that matters is what the student does with the feedback. If the feedback you're giving your students is producing more of what you want, it's probably good feedback. But if your feedback is getting you less of what you want, it probably needs to change.

Feedback –What is it?

- Feedback is information given to the learner and/or the teacher about the learner's performance relative to learning goals.
- It should aim to producing improvement in students' learning.
- Feedback redirects or refocuses either the teacher's or the learner's actions to achieve a goal.
- It can be about the learning activity, the process, the student's management of their learning or self-regulation or about them as individuals. It can come from a teacher or someone taking a teaching role, or from peers.

Feedback – What should I consider?

Research suggests that it should be:

- specific, accurate and clear (e.g. “It was good because you...” rather than just “correct”);
- compare what a learner is doing right now with what they have done wrong before (e.g. “I can see you were focused on improving X as it is much better than last time’s Y...”);
- encourage and support further effort and be given sparingly so that it is meaningful; provide specific guidance on how to improve and not just tell students when they are wrong;
- and be supported with effective professional development for teachers.

Praise for intelligence can hinder learning

- Students who are praised for intelligence, ‘You did a brilliant job, you are very smart’ – can develop a fixed mindset, seeing their intelligence as fixed. These students can become:
 - less confident
 - less resilient
 - less motivated
 - decrease effort in response to set backs.
- “I say praise the effort that led to the outcome or learning progress: tie the praise to it. It’s not just effort but strategy. Students need to know that if they’re stuck, they don’t need just effort. You don’t want them redoubling their efforts with the same ineffective strategies.” (Dweck, 2016).



Feedback and praise about the learning do not go together –but we like praise!

Care is needed, however, to not over-praise as it can give the message that the student is not capable (the perception being that the teacher gives more praise to lower achievers in the class to boost their confidence), and that the teacher has low expectations for the work of the over-praised student. Praise, also, can undermine resilience, as it send messages that it is the student rather than their involvement and persistence in learning that determine success.

Some students become praise junkies as their view of themselves is confirmed, independent of their performance an learning. They seek the praise, often independent of the quality of their learning. Typically, these praise junkies seek positive commendations to confirm their self-esteem and look acceptable in front of their peers. They risk not getting praise if they tackle challenging tasks where they might make errors.

(Hattie & Clarke, 2018, p. 43)

Models of feedback

	Hattie & Timperley <i>Feedback model</i>	Black & William <i>Formative assessment model</i>
Q.1	Where am I going? <i>"To be able to plan and draft a narrative."</i>	Where the learner is going
Q.2	How am I going? <i>"Your plan includes most of the narrative stages we identified."</i>	Where the learner is right now
Q.3	Where to next? <i>"Add the missing stages to the plan, then start your draft using our interesting sentence tip sheet."</i>	How to get there

Hattie and Timperley outline four levels at which feedback is directed, in order of least to greatest impact

1. **Self** – personal evaluation and affect (usually positive) about the student
"Overall you did a good job."
2. **Task** – feedback on how well tasks are performed
"You need to include appropriate scientific language."
3. **Process** – feedback on the learning processes underlining or relating and extending tasks
"How did you evaluate your research sources?"
4. **Self-regulated** – feedback on how students monitor, direct and regulate their own learning
"Can you think of another strategy to try?"

Black and William detail five strategies to put feedback into practice

1. Clarifying, sharing and understanding learning intentions and criteria for success
2. Engineering classroom activities that elicit evidence of learning
3. Providing feedback that moves learners forward
4. Activating students as instructional resources for one another
5. Activating students as the owners of their own learning.

Recent results from Embedding Formative Assessment

- Students in the Embedding Formative Assessment schools made the equivalent of two additional months' progress in their learning.
- This Randomised Controlled Trial (RCT) in the UK involved 25 000 students.
- It showed the importance of providing feedback that moves learning forward.

Examples of feedback

Black and Wiliam emphasise student self-regulation which is consistent with the most powerful level of feedback identified by Hattie and Timperley.

Level	Description	Example	Impact
Self level	personal evaluations and affect (usually positive) about the learner	Overall you did a good job	Ineffective
Task	how well tasks are understood and performed	You need to include appropriate, scientific language	Useful
Process	the main process needed to understand/perform tasks	How did you evaluate your research sources	Powerful
Self-regulation	self-monitoring, directing and regulating actions	Can you think of a different strategy to try?	Powerful

Feedback

HOME > TEACH > IMPROVE PRACTICE > FEEDBACK

The research is clear: effective feedback practices can greatly improve student learning and teaching quality. Use these evidence-based, practical tools to introduce or enhance feedback in your setting.

Effective feedback animation

Watch 4min video

Spotlight

Reframing feedback to improve teaching and learning

Feedback

Effective feedback leads to positive changes in teaching and learning practices and significant improvements in student outcomes.



WHAT IS FEEDBACK?

Feedback is:

- information for the student and/or teacher about the learner's performance
- relative to learning goals and based on evidence
- designed to close the gap between current and desired performance by informing teacher and student behaviour.

+ 8 MONTHS

Global evidence shows students who receive high quality feedback can make an additional eight months' progress over a year.

To find out more visit <http://evidenceforlearning.org.au/toolkit/feedback/>

WHAT DOES EFFECTIVE FEEDBACK LOOK LIKE?

Two evidence based models for thinking about feedback are Hattie & Timperley (2007) and Black & Wiliam (2006). Both models address three important questions.

Hattie & Timperley
Feedback model



Q.1 Where am I going?

Black & Wiliam
Formative assessment model

Where the learner is going

"To be able to plan and draft a narrative."

Q.2 How am I going?



Where the learner is right now

"Your plan includes most of the narrative stages we identified."

Q.3 Where to next?



How to get there

"Add the missing stages to the plan, then start your draft using our interesting sentence tip sheet."

Hattie and Timperley outline four levels at which feedback is directed, in order of least to greatest impact

1. **Self** – personal evaluation and affect (usually positive) about the student
"You always do great work!"
2. **Task** – feedback on how well tasks are performed
"You need to include appropriate scientific language."
3. **Process** – feedback on the learning processes underlying or leading to working tasks
"You need to take steps to ensure you use credible sources."
4. **Self-regulated** – feedback on how a student monitors, directs and regulates their own learning
"You sought feedback from a peer and I can see that helped with clarifying your argument."

Black and Wiliam detail five strategies to put feedback into practice

1. Clarifying, sharing and understanding learning intentions and criteria for success
2. Engineering classroom activities that elicit evidence of learning
3. Providing feedback that moves learners forward
4. Activating students as instructional resources for one another
5. Activating students as the owners of their own learning.

WHAT CAN EFFECTIVE FEEDBACK ACHIEVE?

- Students increase effort particularly when there is a clear goal that is appropriately challenging.
- Students develop and use more effective learning strategies such as error detection and self-assessment.
- Students increase autonomy, ownership and self-regulation of their learning.
- Teachers provide feedback aligned to specific goals and criteria for performance.
- Teachers understand the effectiveness of their teaching, and select and adapt strategies to meet students' needs.



Adapted from AITSL Spotlight on Feedback

Feedback case studies



Feedback Case Study



COLLABORATING TO SUPPORT IMPROVED PRACTICE



ROSNY COLLEGE
ROSNY PARK, TAS

- INNER REGIONAL
- GOVERNMENT
- SECONDARY 11 – 12
- 107 TEACHERS
- 1037 STUDENTS
- LBOTE 4%
- INDIGENOUS STUDENTS 8%

(Accessed from MySchool - May 2017)

Identifying a need

Prior to the arrival of a new principal in January 2015, Rosny College conducted a teaching and learning audit. One of the key recommendations of the audit was to develop a common language for teaching and learning, an approach supported by research showing the high impact of quality teaching on student outcomes.

Several senior teachers learnt about a range of pedagogical approaches from Dylan William. Afterwards, they presented their learnings to their colleagues, and the full leadership team agreed to pursue formative assessment practices based on William's work.

“The non-negotiable area is developing a common language of teaching and learning. We’re going to be driving that for three years and then we’ll re-evaluate where we’re up to after that.”

Deb Day, Principal

Implementation resources

Get all the tools and resources you need to implement feedback in your school.

User guide

Readiness check

Planning

Implementation

Evaluation

Readiness check

Are you ready to introduce a change in practice across your context?

The screenshot shows the 'Readiness Check' document interface. It features a navigation bar with tabs for 'Overview', 'Planning', 'Implementation', and 'Evaluation'. The 'Readiness Check' section includes a 'Your role is to:' section with a wrench icon and a list of tasks: 'select how embedding feedback practices aligns with school and priority action plans', 'identify the school resources and structures in place that can support implementation of effective feedback practices', and 'determine where each may need to be undertaken prior to planning'. Below this is a table titled 'School implementation priorities and assessment' with columns for 'School Implementation', 'High', 'Medium', 'Low', and 'None'. The table lists five implementation priorities with corresponding assessment ratings. At the bottom, there is a 'Readiness score' section with a target icon and a list of questions: 'No - 10: There is high alignment between feedback and the current school activities and practices? More on the next section', '2 - 11: There is medium alignment between feedback and the current school activities and practices. What areas do you need to address before or being planning? Record your decisions below', and '3 - 12: There is low alignment between feedback and the current school activities and practices. Consider whether a focus on feedback is right for your school at this time. If moving ahead, consider what school you need to take to create, shape, deliver activities and practices before progressing with planning and implementing feedback practices. Record your decisions below.'

Readiness check

Use with the leadership team, a small group overseeing implementation or all staff to identify structures, systems and processes already in place that can be used to support the implementation of feedback practices.

Readiness check (docx, 180KB)

Implementing feedback at the primary school level

Technique	Meaning	Practical Example	Further reading
Learning intentions and success criteria	Learning intention – what learners should know, understand and be able to do by the end of a learning period or unit. In addition to learning intentions students may also have individual learning goals they address in their learning.	Learning intentions are the basis for tracking student progress, providing feedback and assessing achievement. Teachers need evidence of where students are in their learning to set appropriately challenging learning intentions.	Learning intentions and success criteria
Success criteria	Success criteria are the measures used to determine whether, and how well, learners have met the learning intentions.	They need to be clear and specific to avoid ambiguity.	Learning intentions and success criteria

Implementing feedback

Technique	Meaning	Practical Example	Further reading
Collaborative planning	<p>A professional learning community (PLC) in schools involves collaboration, sharing and ongoing critical interrogation of teaching practices in line with professional standards. PLCs should be learning-oriented and promote the growth of teachers and students.</p> <p>Collaborative planning – teachers may themselves set learning intentions, they may negotiate these with students in a facilitated conversation or they may plan learning intentions and success criteria in teams.</p>	<p>Stacey Quince – Action Learning Questions 1) What was the impact of your project on teacher professional learning? How do you know? What was the impact of the project on student learning?</p> <p>See feedback case studies – <i>Trialling feedback practices</i> from Rosny college (00:00 – 01:47), and <i>Explicit teaching and feedback</i> from South Halls Head Primary School (06:00 – 06:52).</p>	<p>Professional Learning communities</p> <p>Impact Evaluation Cycle</p> <p>Beyond PD</p>

Implementing feedback

Technique	Meaning	Practical Example	Further reading
Bump it up wall	Annotated work samples at different levels of quality on the wall in the classroom. The works samples are often rated against rubrics and annotated.	Students are asked to review their work against the work samples to self-assess their performance and to determine how they might improve the quality of their work before sharing it with the teacher	Learning intentions and success criteria Video case study
Rubric	Guidelines for measuring achievement that state the learning intentions with clear performance criteria, a rating scale and a checklist.		Learning intentions and success criteria

Metacognition and self-regulation

High impact, very low cost, based on extensive evidence

Metacognition and self-regulation approaches have consistently high levels of impact.

Average cost

\$ \$ \$ \$ \$

Evidence security

🔒 🔒 🔒 🔒 🔒

Months' impact

+7

1.2

Understand how students learn

Demonstrate knowledge and understanding of research into how students learn and the implications for teaching.

1.5

Differentiate teaching to meet the specific learning needs of students across the full range of abilities

Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.

Metacognition and self-regulation

How would you define metacognition and self-regulation?

Do you think that they are helpful skills for students to have?

Enter your answer in the chat box.

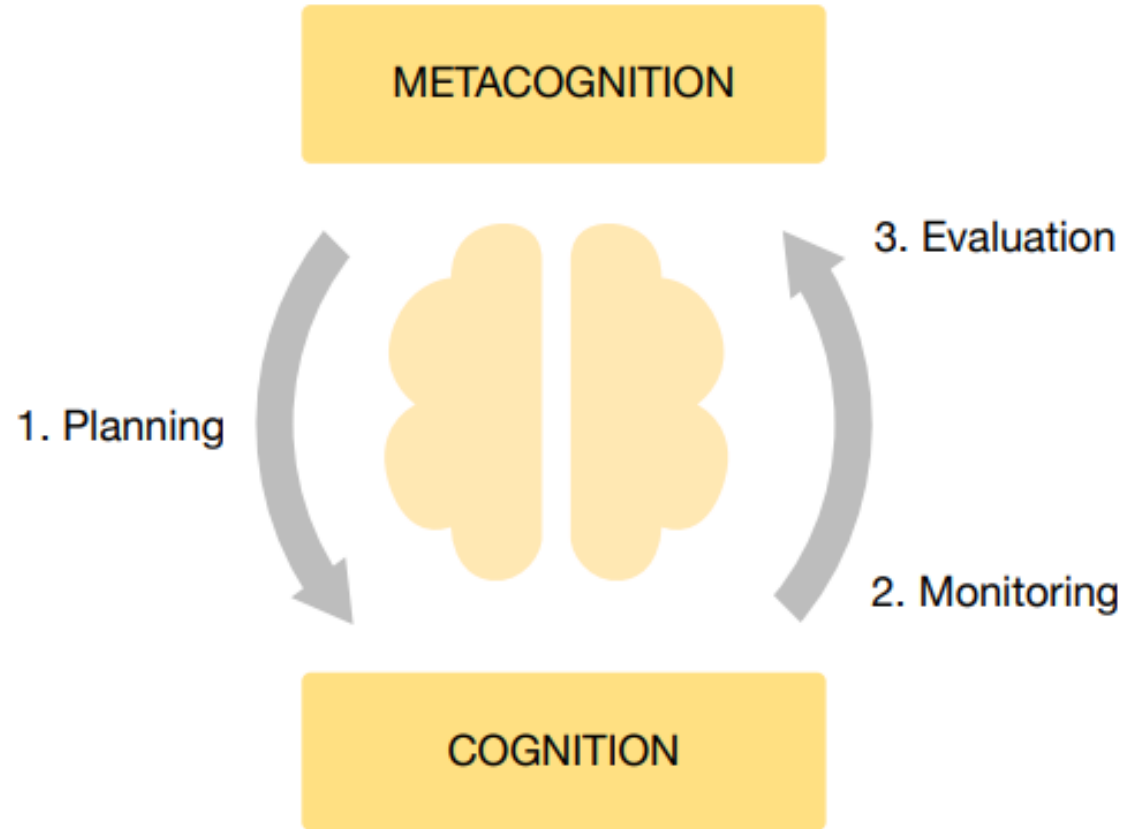


Metacognition and self regulation

- Metacognition and self-regulation approaches aim to help students think about their own learning more explicitly, often by teaching them specific strategies for planning, monitoring and evaluating their learning.
- Self-regulated learning can be broken into three essential components:
 - **cognition** - the mental process involved in knowing, understanding, and learning e.g. subject specific - making different marks with a brush or using different methods to solve equations in maths;
 - **metacognition** – learners monitor and purposely direct their learning e.g. checking our memorisation technique was accurate or selecting the most appropriate cognitive strategy for the task we are undertaking;
 - **motivation** - willingness to engage our metacognitive and cognitive skills e.g. undertake a tricky revision task now – affecting current well-being – as a way of improving our future well-being.

Metacognition and self-regulation

- We approach any learning task or opportunity with some metacognitive knowledge about:
- Knowledge of *ourselves* as learners – our own abilities and attitudes
- Knowledge of *strategies* – what strategies are effective and available
- Knowledge of the *task* the particular type of activity.
- Metacognitive regulation – planning how to undertake a task, working on it while monitoring the strategy and evaluating the overall success.



Metacognition and self-regulation in painting

Planning:

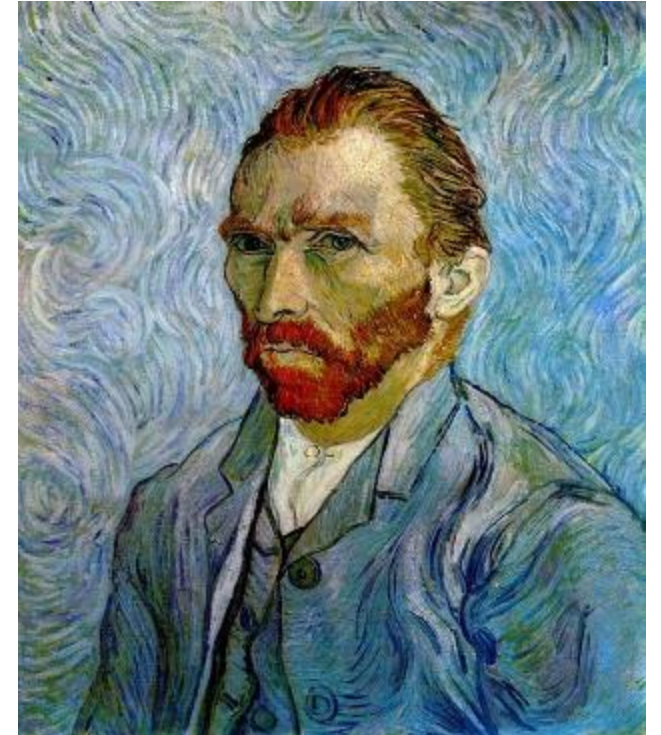
- What resources do I need to carry out a self-portrait?
- Have I done a self-portrait before and was it successful?
- What have I learned from examples we looked at earlier?
- Do I need a line guide to keep my features in proportion?

Monitoring

- Am I doing well?
- Do I need any different techniques to improve my self-portrait?
- Is there anything I need to stop and change to improve my self-portrait?

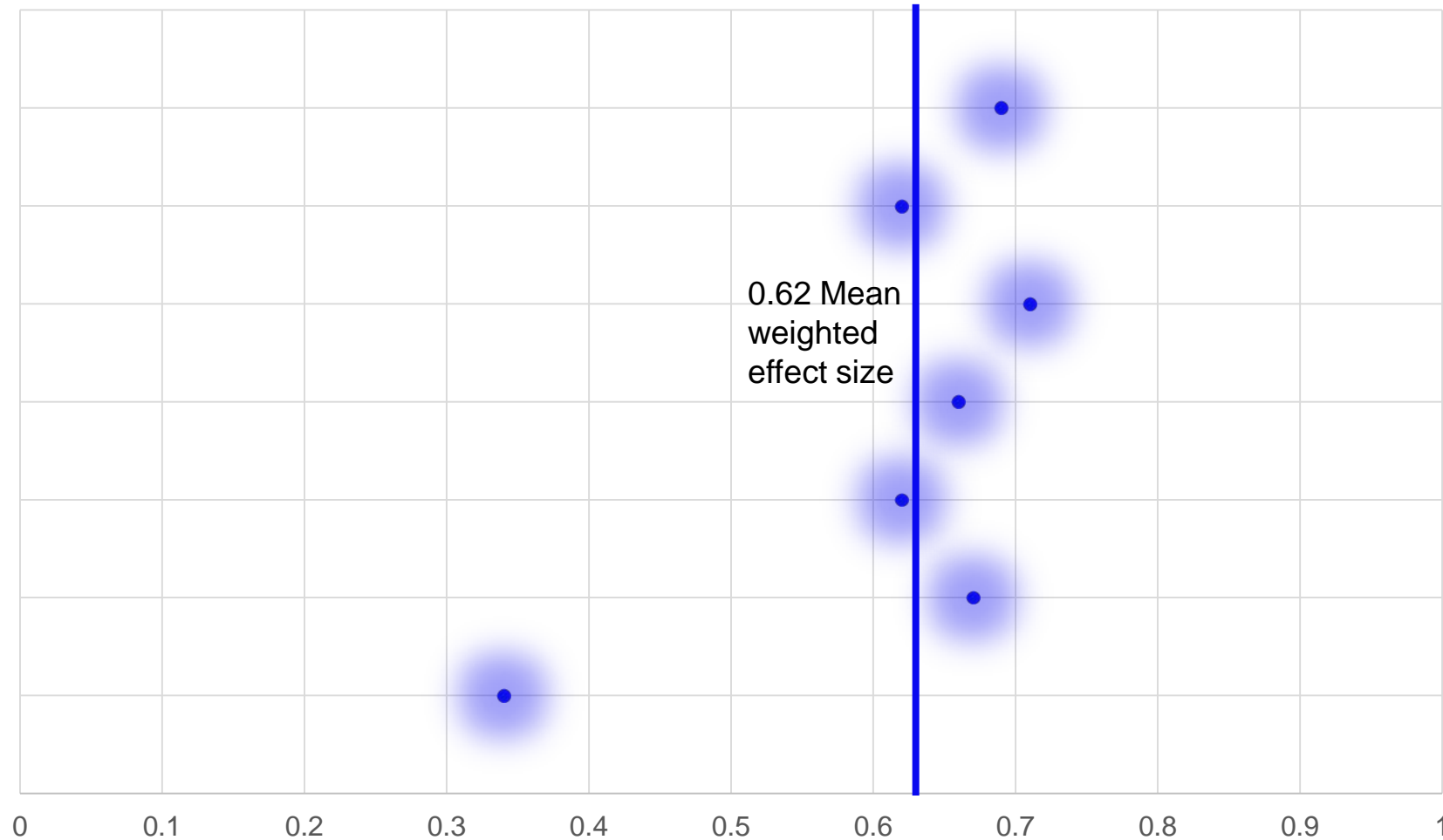
Evaluation

- How did I do?
- Did my line guide strategy work?
- Was it the right viewpoint to choose?



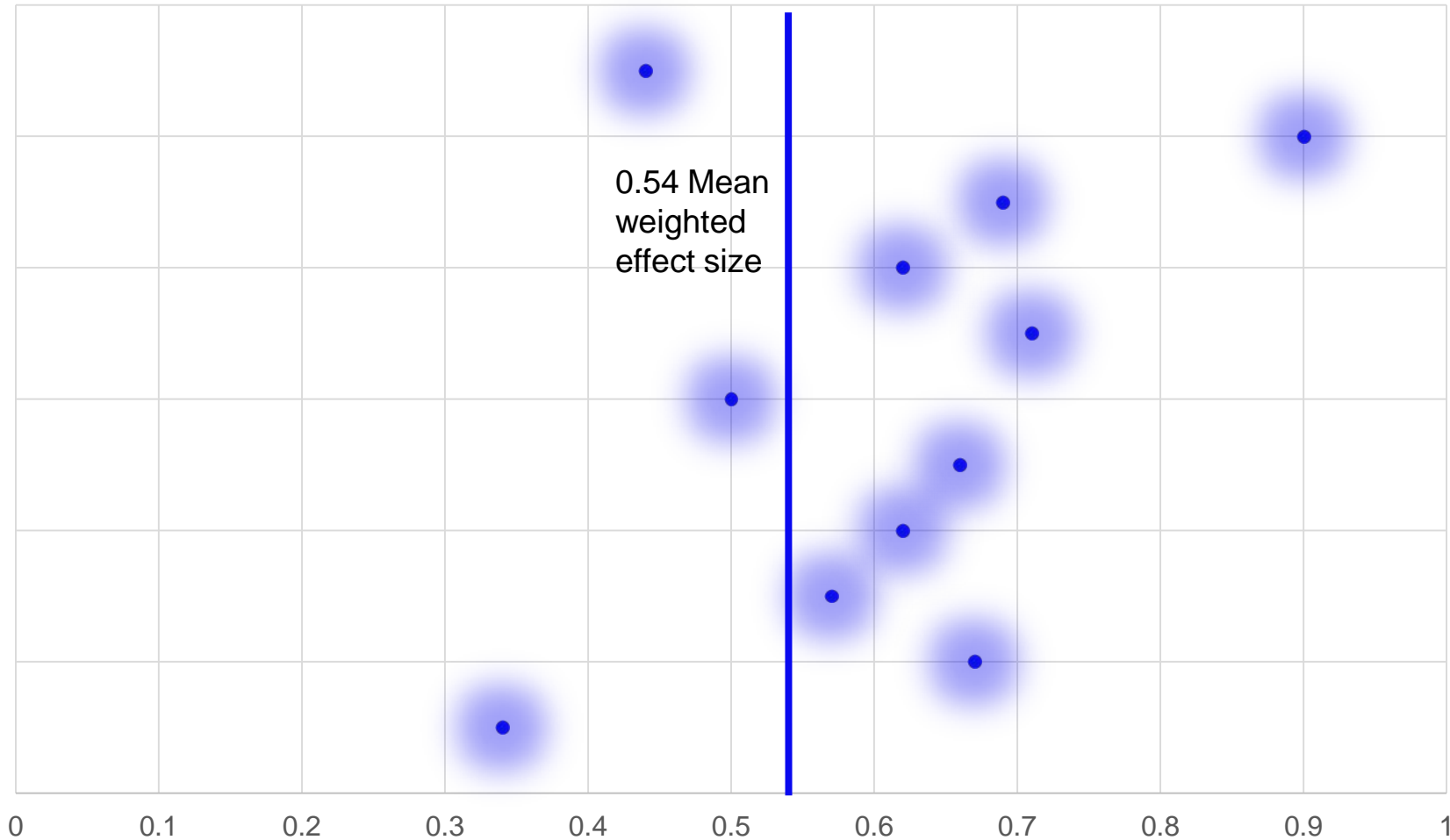
Metacognition 2017

Effect sizes for studies of metacognition and self-regulation
2017

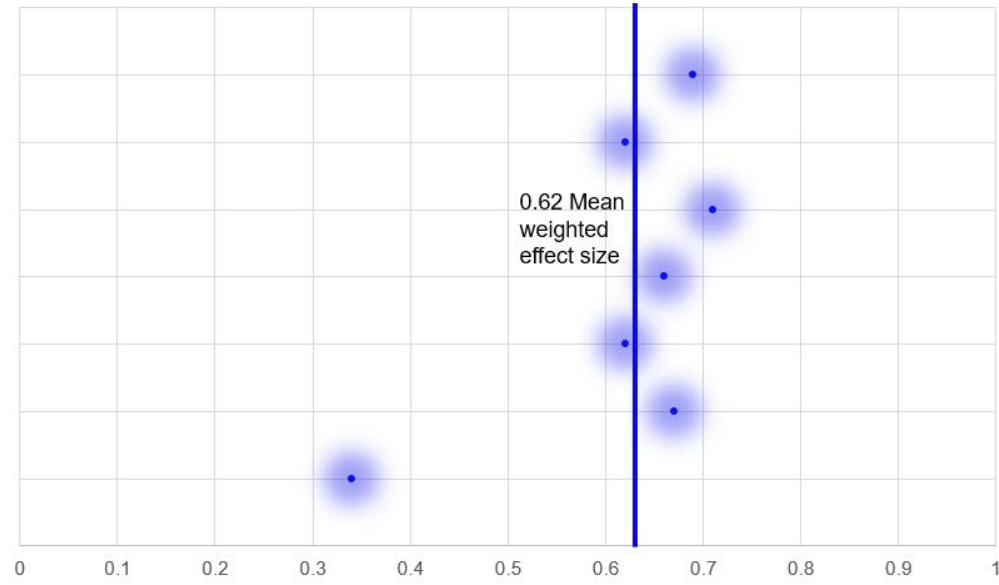


Metacognition 2018

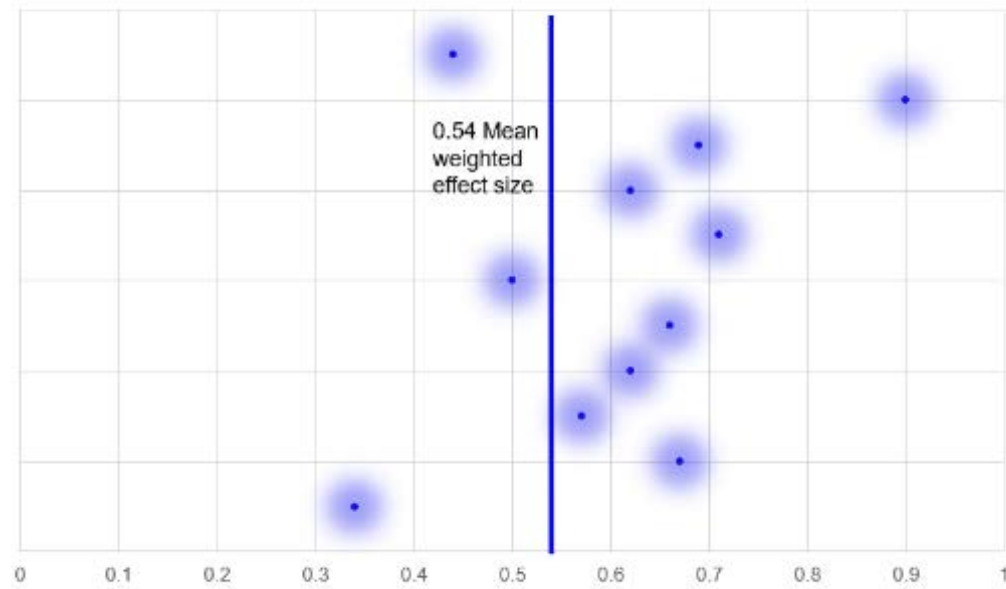
Effect sizes for studies of metacognition and self-regulation 2018



Effect sizes for studies of metacognition and self-regulation
2017



2018



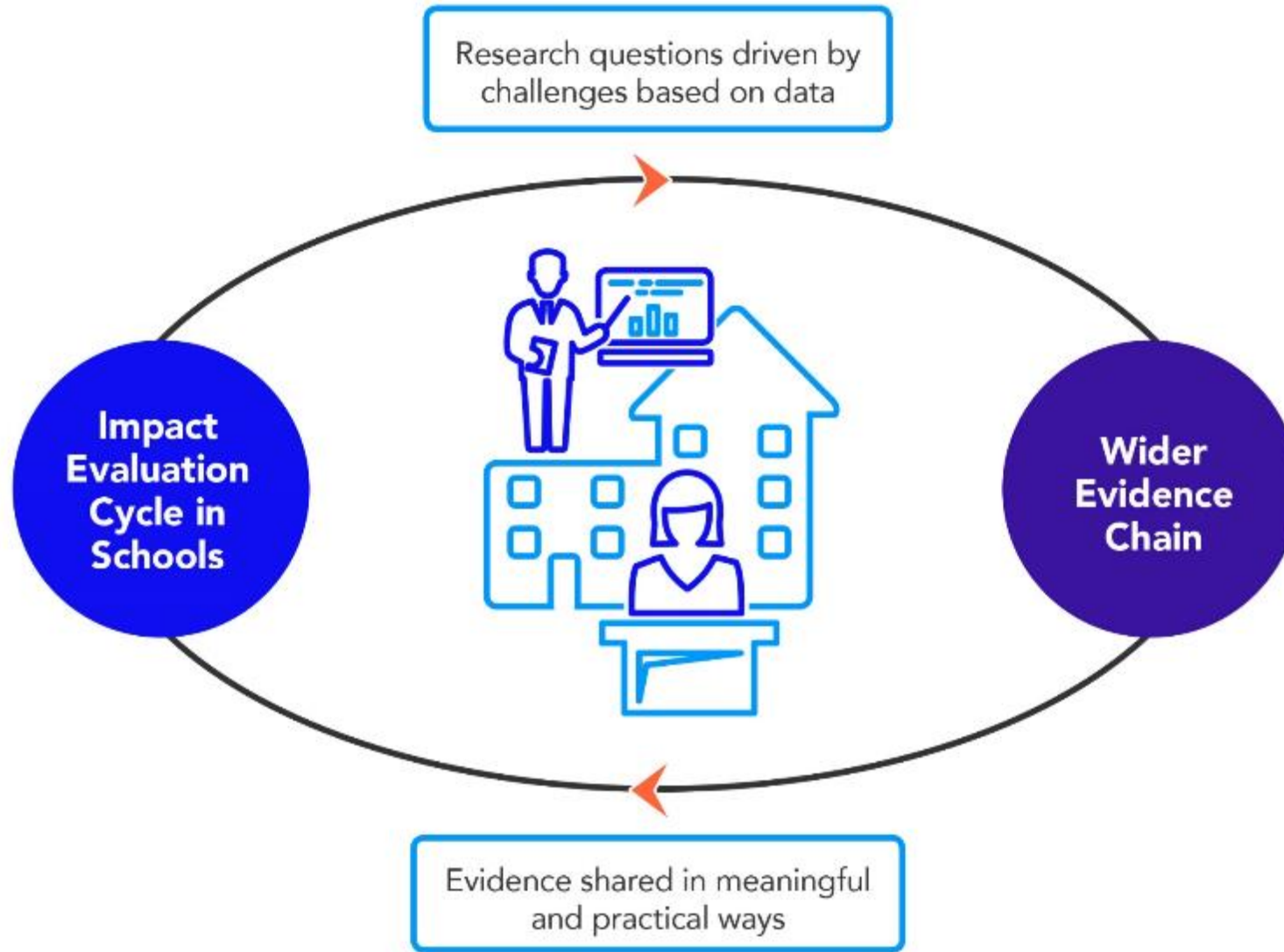
Meta-cognition and self regulation

Strategy	Effect size	Definition	Description
Concept mapping	0.64	Rearrangement of instructional materials, analogies, cognitive organisers.	Making a concept map
Self-consequences	0.70	Student arrangement or imagination of rewards or punishment for success or failure.	Putting off pleasurable events until work is completed.
Self-instruction	0.55	Self verbalising the steps to complete a given task.	Verbalising the steps in solving a mathematics problem
Self-evaluating	0.62	Setting standards and using them for self-judgement.	Check quality of own work prior to handing in to teacher

Meta-cognition and self regulation

Strategy	Effect size	Definition	Description
Help-seeking: peers, teachers, adults	0.60	Explaining to someone else, asking questions, answering questions	Using a study partner.
Keeping records, monitoring	0.59	Recording of information related to study tasks.	Note taking, summarising.
Rehearsing, memorising	0.57	Memorization of material by overt or covert strategies	Writing a mathematics formula down until it is remembered.
Goal setting / planning	0.49	Goals, sub-goals, timeline	Making lists to accomplish during studying.
Self monitoring	0.45	Observing and tracking one' own performance and outcomes, often recording the,	Keeping records of study outputs.

Evidence ecosystem

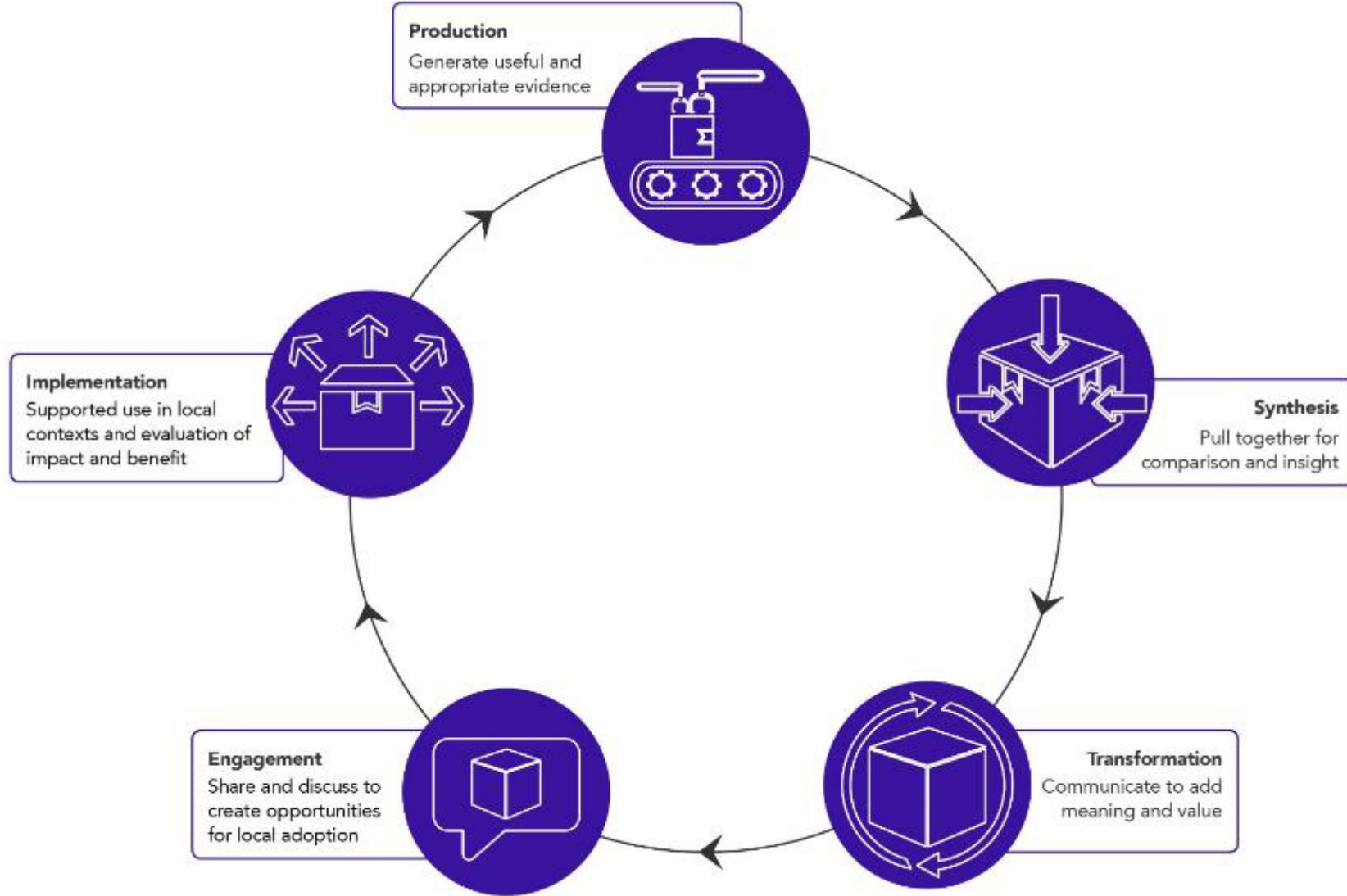


Barriers to engaging with the wider evidence chain?

Three common barriers to accessing and using research:

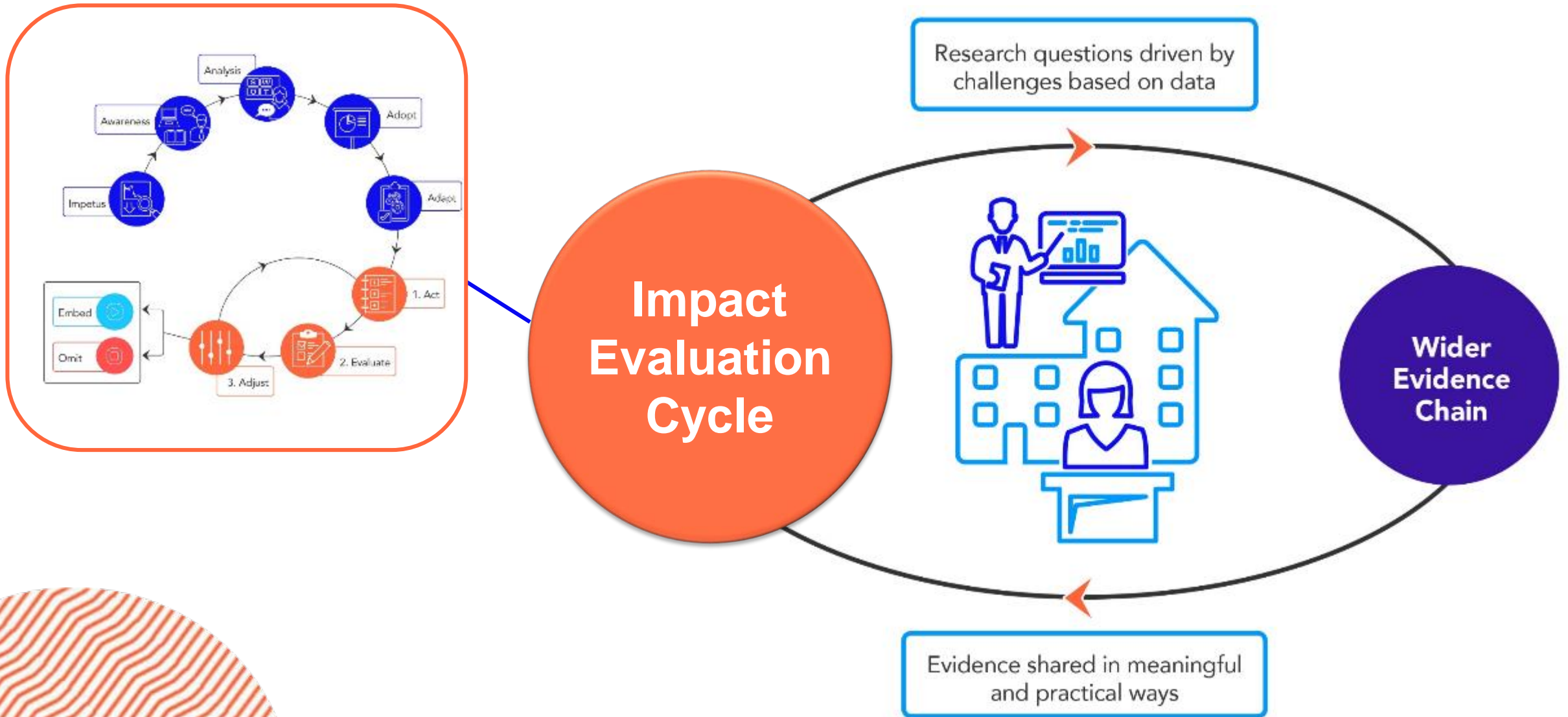
- Shortage of time to engage with research
- Overload of information to process
- Insufficient contextualised information for practice.

Wider Evidence Chain - external

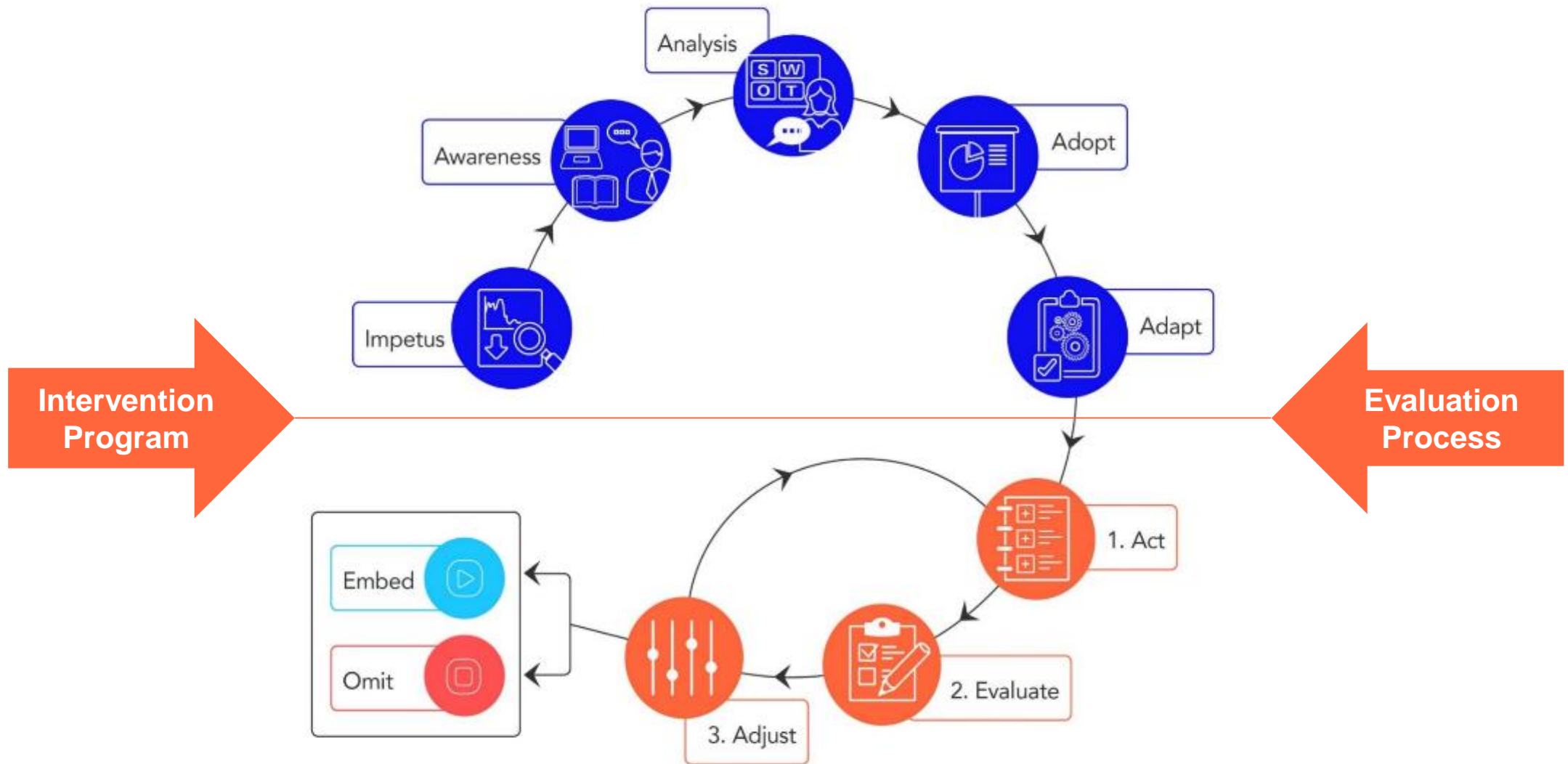


Adapted from Sharples J Evidence Chain for the Frontline (2013).
evidenceforlearning.org.au/evidence-informed-educators/evidence-ecosystem

Evidence ecosystem



Evidence for Learning Impact Evaluation Cycle



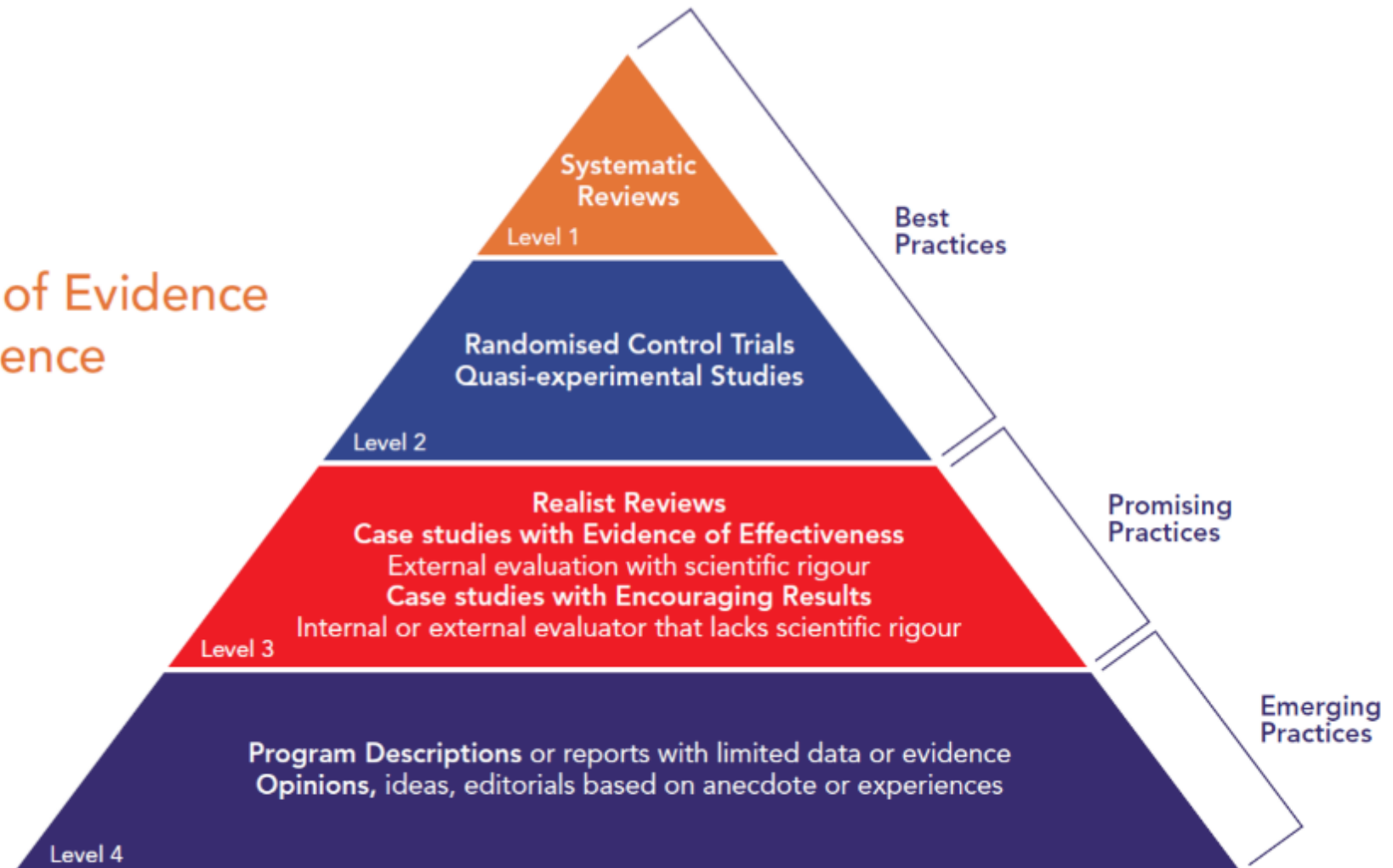
What is evidence-informed decision making?

Evidence informed decisions are about *'integrating professional expertise with the best external evidence from research to improve the quality of practice'* (Sharples, 2013, p. 7). This is not about *'prescribing what goes on from a position of unchallenged authority'* (Sharples, 2013, p. 7).



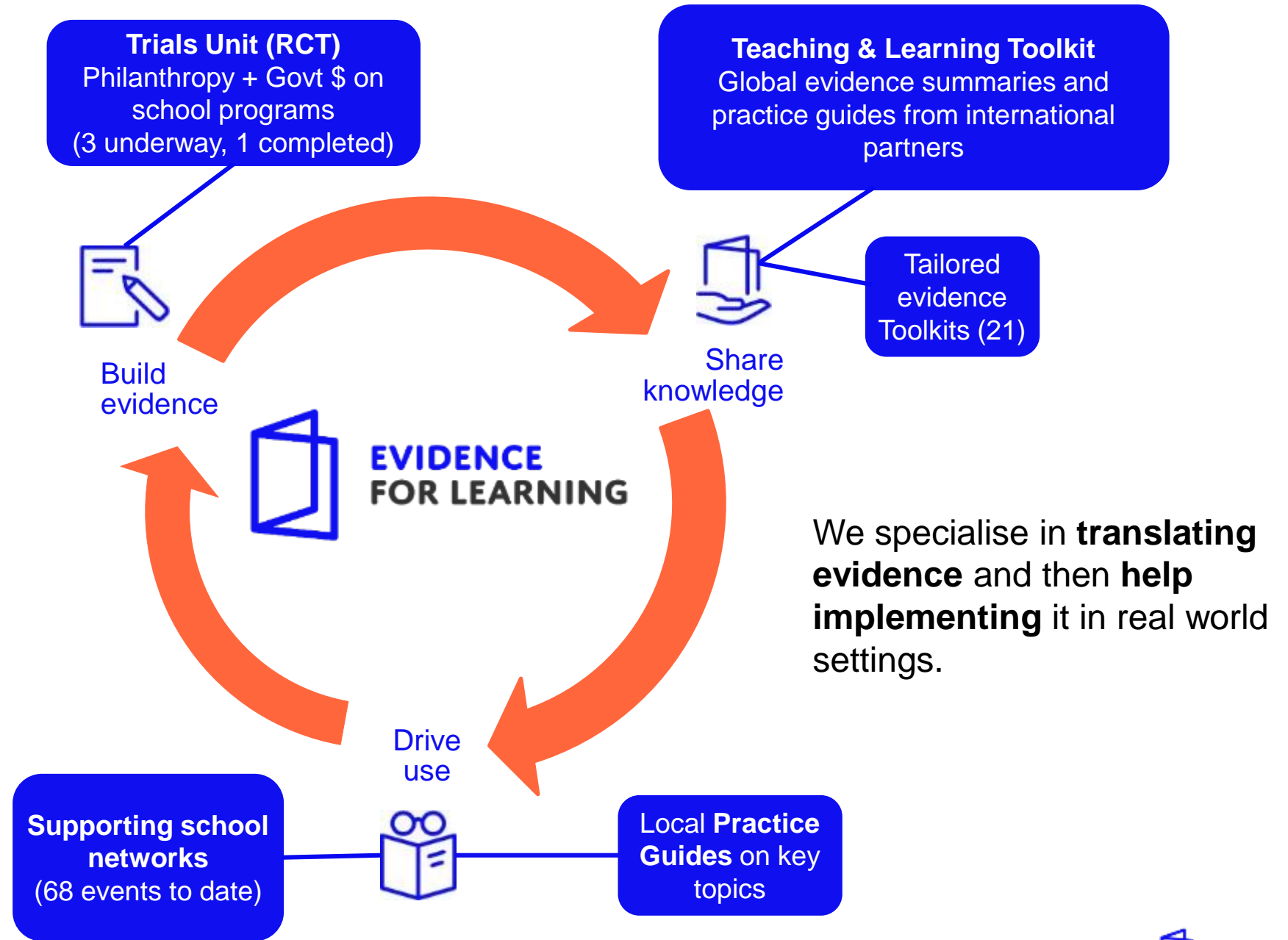
Hierarchy of evidence

Levels of Evidence Confidence



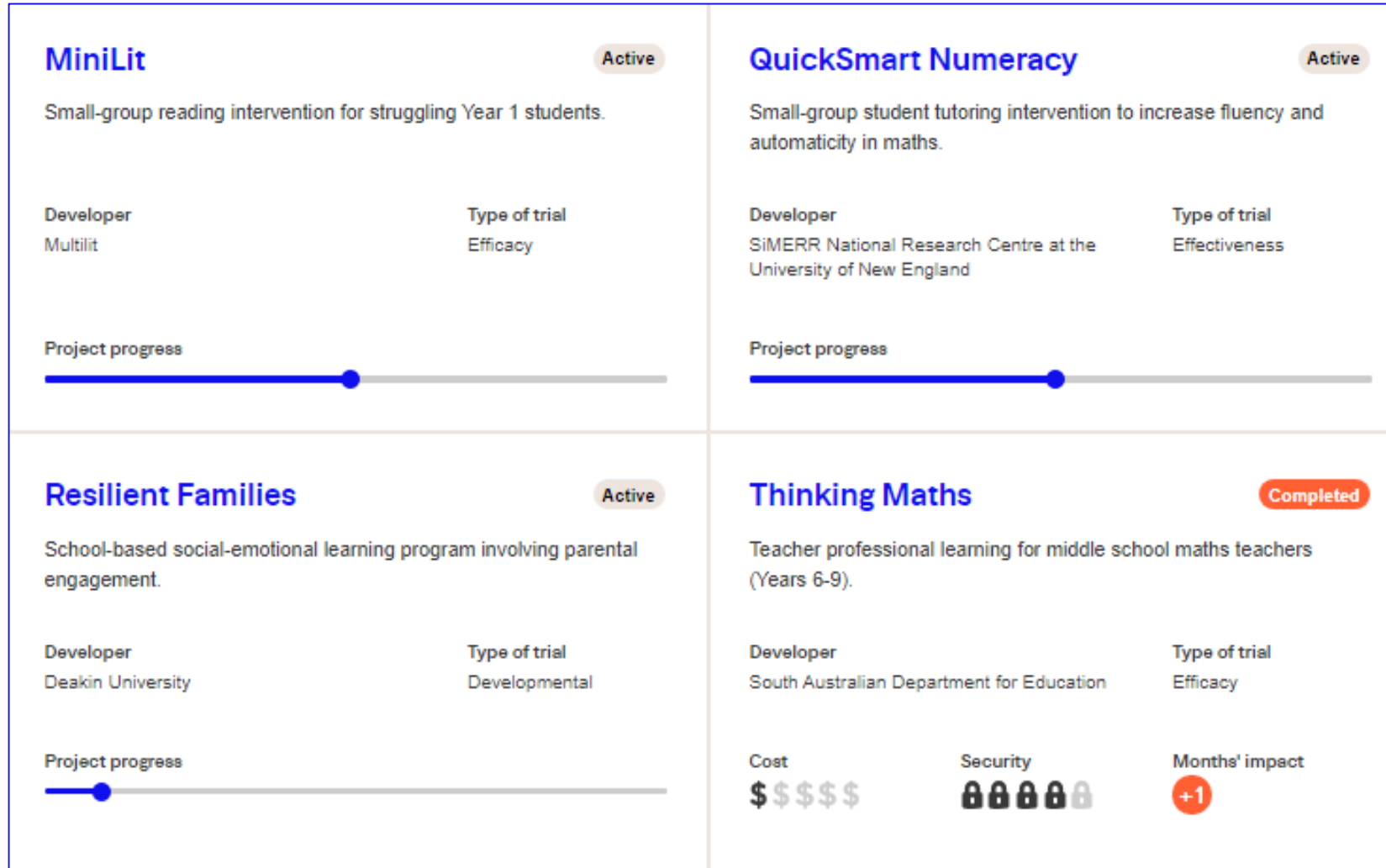
Better school decisions informed by evidence

We are an **Evidence Intermediary**; we play a brokering role between research and practice



We specialise in **translating evidence** and then **help implementing** it in real world settings.

Current progress in Learning Impact Fund



Questions?



Where to now?

- Join our Evidence Informed Educator Network
evidenceforlearning.org.au/evidence-informed-educators/join/
- Subscribe to our newsletter for updates evidenceforlearning.org.au/
- Follow us on Twitter [@E4Ltweets](https://twitter.com/E4Ltweets) and Facebook [Evidence for Learning](https://www.facebook.com/EvidenceforLearning)
- Comments and feedback please tvaughan@evidenceforlearning.org.au





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common practice in education



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