Supporting teachers to use research evidence well in practice

Survey findings and practical guidance from an AERO and Monash Q Project collaboration

December 2022

This report describes ways that schools can build teachers' and leaders' confidence in using research evidence, and why this is important. It presents findings from independent surveys conducted by the Australian Education Research Organisation (AERO) and the Monash Q Project.

Australian Education Research Organisation

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Contents

Overall findings and guidance

Nearly 1,400 school teachers and leaders were surveyed across all Australian states and territories in 2020 and 2021.

AERO and the Q Project used the survey data to examine the relationship between support provided by schools, confidence in using research evidence and use of research evidence in practice. This report therefore uses empirical data to examine the importance of school support, and the role that confidence plays in the use of research evidence.

We found that when teachers and leaders are supported by their school to use research evidence, they are:

- more confident in using research evidence
- more likely to use research evidence in their practice.

The support can include being given dedicated time, professional learning, and access to a coach or school leader in a specialised research dissemination role or with specialised research expertise.

Additional findings include:

- Many teachers and leaders indicated that their school provides support to use research evidence.
- While teachers and leaders believed in the value of using research evidence, research evidence was not often used to help improve knowledge or practice or to make decisions.
- Teachers and leaders had some concerns about their abilities to assess or analyse research evidence. These confidence gaps represent important opportunities to target improvement initiatives in schools.

Want links to resources that will help you to follow this guidance? See Table 1.

Context

Increasingly, teachers, leaders, schools and school systems are becoming aware that using evidence generated from academic research (also referred to as research evidence) can improve their practice (Nelson and Campbell 2019). When school leaders and teachers engage with research evidence, their own teaching skills can improve (for example, Bell et al. 2010; Godfrey 2016), and learning and school

Guidance

Teachers and leaders are more confident in using research evidence and are more likely to use research evidence in their practice when supported to do so by their school.

To support use of research evidence in your school, consider:
- providing professional learning opportunities that help build confidence and skills to locate appropriate research evidence and assess relevance and rigour.
- scheduling time during school hours for colleagues to make sense of research evidence.
- using coaches, mentors and dedicated leaders to drive and guide improvement in the use of research evidence.

performance outcomes also improve (for example, Mincu 2014; Supovitz 2015; Rose et al. 2017). These findings provide powerful reasons to use research evidence to inform practice.

But using research evidence well and incorporating it into practice is complex and demanding work.

This 'expertise and professionalism' requires teachers and school leaders to value research evidence and to

> 'Evidence is important, but what is more important is [...] teacher expertise and professionalism [to] make better judgments about when, and how, to use research.'
>
> (Wiliam 2019)

want to use it to improve their practice. It also requires teachers and leaders to have confidence in their own skills and knowledge to engage with research evidence (Rickinson et al. 2021a). Recent Australian studies have made clear that teachers and leaders require support and resources to do this (for example, Parker et al. 2020; Prendergast and Rickinson, 2019; Rickinson et al. 2021b; Walsh et al. 2022).

Purpose of this report

This report offers guidance to build teachers' and leaders' confidence in using research evidence, and to increase the use of research evidence in schools.

The report does this by:

- explaining the importance of different individual and school characteristics that can enable the increased and improved use of research evidence
- demonstrating, with empirical findings, how support provided by a school to use research evidence increases teachers' and leaders' confidence in using, as well as actual use of, research evidence (Figure 1)
- guiding schools to focus on key supports that can help teachers and leaders to build their confidence and skills to use research evidence, and use it well.

The report draws on 2 independent surveys; one conducted by the Monash Q Project in 2020 and one conducted by AERO in 2021, with a total of 1,389 teachers and school leaders across all Australian states and territories. The methods used to collect and analyse survey responses are summarised in Appendices 1 and 2.

> 'If educators are more research engaged and connected… teaching and learning improvements are likely to follow'
>
> (Malin and Brown 2020)

AERO and the Monash Q Project

The Australian Education Research Organisation (AERO) and the Monash Q Project have similar aims to promote the use of quality research and evidence in Australian educational practice.

Both AERO and the Q Project are currently:

- working with teachers and school leaders across Australia to understand what is involved in using research and evidence well in practice
- developing resources and interventions to support increased and improved use of research evidence in practice.

Figure 1: Factors that increase use of research evidence

Increase teachers' and leaders' confidence to use research evidence

School-based supports for research evidence use

Increase teachers' actual use of research evidence in practice
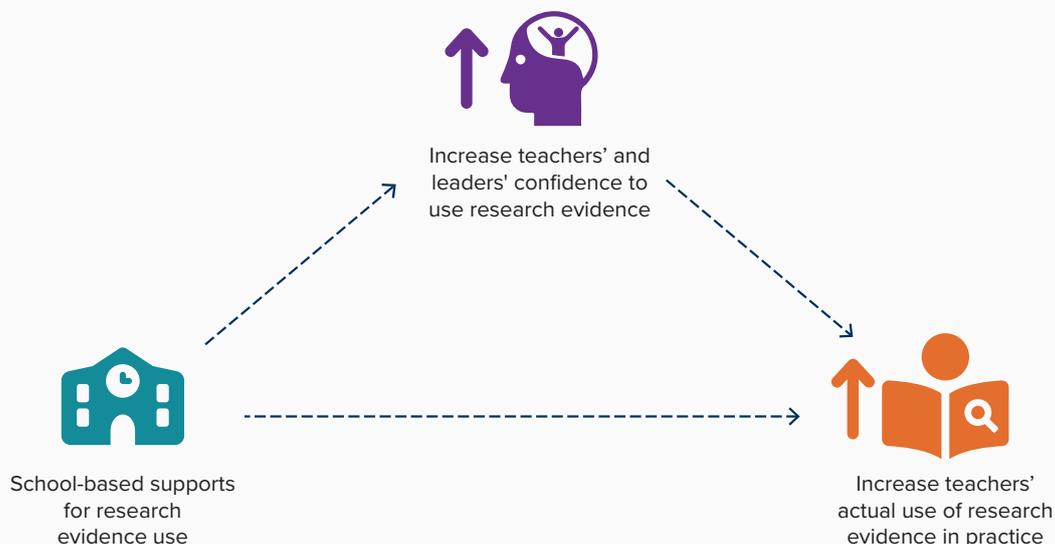
Factors that enable the use of research evidence

The use of research evidence in schools is influenced by a range of factors (Dagenais et al. 2012; van Schaik et al. 2018). Some of these factors include the characteristics of individual teachers and school leaders themselves. Several previous studies have found that individuals' beliefs, motivations and confidence regarding the use of research evidence are important influences on their use of research evidence in practice (for example, Judkins et al. 2014; Lysenko et al. 2014; Penuel et al. 2017; Williams and Coles 2007). Other influencing factors are contextual and include school-based supports, such as scheduled time, professional learning opportunities, effective leadership, and a school culture that encourages and facilitates research evidence use (Cain 2019; Cooper and Levin 2013; Godfrey and Brown 2019).

Quality Use of Research Evidence (QURE) Framework

One way to imagine how these different enablers of research evidence use can come together in a school context is through the Monash Q Project's Quality Use of Research Evidence (QURE) Framework (Rickinson et al. 2020). As depicted in Figure 2, this framework sees the quality use of research evidence as 'thoughtful

Types of evidence

AERO identifies 2 main types of evidence:

- **teacher-generated evidence** (such as evidence gained from using student learning data)
- **research evidence** is interpreted in this report as evidence generated through academic research, which uses rigorous methods to provide insights into educational practice.

This report focuses on research evidence. Using research evidence means the process of engaging with and drawing on research evidence to inform, change and improve decision-making and practice.

engagement with and implementation of appropriate research evidence'. Quality use of research evidence is supported by a blend of 3 individual enabling components – skillsets, mindsets and relationships – and 3 organisational enabling components – culture, leadership and infrastructure. Together, these individual and organisational factors have the potential to increase and improve the use of research evidence in practice.

Figure 2: Quality Use of Research Evidence (QURE) Framework

Quality use of research evidence in education is defined as… the thoughtful engagement with and implementation of appropriate research evidence, supported by a blend of individual and organisational enabling components within a complex system.

SYSTEM-LEVEL INFLUENCES

The complex interactions and inter-dependencies across the education sector to support thoughtful engagement with and implementation of appropriate research evidence.

CORE COMPONENTS

- **Appropriate research evidence -** The need for research evidence to be not only methodologically rigorous, but also appropriate for the educational issue, the context and intended use.
- **Thoughtful engagement and implementation -** Critical engagement with the research evidence, shared deliberation about its meaning and effective integration of aspects of the evidence within practice.

ENABLING COMPONENTS

INDIVIDUAL LEVEL

- **Skillsets** - The knowledge and capabilities that are required to thoughtfully engage with and implement appropriate research evidence.
- **Mindsets** - The dispositions, attitudes and values that are required to thoughtfully engage with and implement appropriate research evidence.
- **Relationships** - The interpersonal processes and connections that are required to thoughtfully engage with and implement appropriate research evidence.

ENABLING COMPONENTS

ORGANISATIONAL LEVEL

- **Leadership** - The organisational vision, commitments and role models that support thoughtful engagement with and implementation of appropriate research evidence.
- **Culture** - The organisational ethos, values and norms that support thoughtful engagement with and implementation of appropriate research evidence.
- **Infrastructure** - The organisational structures, resources and processes that support thoughtful engagement with and implementation of appropriate research evidence.

Teachers' and leaders' perspectives

Teachers' and leaders' perspectives play an important role in moving discussions about research evidence use beyond the theoretical (for example, Boaz and Nutley 2019). They also shed light on what is involved in using research evidence well in practice and how it can be supported.

Supports to use research evidence are available

Overall, teachers and school leaders generally agree that supports to use research evidence are available at their school (see Box 1 for types of supports). For instance, 80% of respondents in AERO's survey agreed/strongly agreed that their leaders share and discuss evidence to improve practice (Figure 3). In the Q Project survey, 87% of respondents agreed/strongly agreed that their school facilitates a professional learning community that supported their evidence use (Figure 4).

Some types of support, however, were not as common as others, such as the availability of coaching within schools (in AERO's sample) or the provision of time by schools (in the Q Project's sample). Overall, though, supports reported by teachers and school leaders provide a good opportunity for enabling greater and improved research evidence use.

Schools value research evidence more than they use it

Previous research from the Q Project has highlighted that teachers and school leaders believe in the value of using research to inform their practice (Rickinson et al. 2021b; Walsh et al. 2022). The Q Project's survey in this study showed that 83% of respondents agreed or strongly agreed that using research will help improve student outcomes.

Despite these strong beliefs in the value of research evidence, just under half of teachers and school leaders use research evidence often in practice (Figure 5). For instance, 43% of respondents in the Q Project survey said they consulted university-based research articles always/often to help inform their decisions. The same percentage (43%) of respondents in the AERO survey said they consulted academic research often/very often for their own knowledge.

Box 1: Types of supports we included in our analyses

AERO survey

- ✓ School leaders share and discuss evidence to improve our practice
- ✓ School sets aside regular times or meetings to discuss evidence that could improve practice
- ✓ School uses evidence when deciding on school policies and programs
- ✓ School has coaching available to help staff use evidence to change their practice

Q Project survey

- ✓ School leaders foster professional learning communities or support collaborative learning opportunities
- ✓ Schools refer to evidence of 'what works' when deciding on initiatives to implement
- ✓ Schools consult a variety of information sources when making decisions
- ✓ School leaders encourage informed risk-taking in teaching practice
- ✓ Schools implement formal processes to help staff engage with evidence
- ✓ Schools make time available for staff to engage with research
- ✓ Schools implement informal processes to help staff engage with evidence

'We make sure that all the staff have an understanding [of the research] ... and [we] support them to get them along the way. ... We develop an essential agreement; how it will be taught, what's expected. ... From there, we support them in the classroom ... and it's a continual process of supporting the teachers.'

Senior Leader, Government Primary School, Q Project

Figure 3: Teacher and leader perceptions of supports provided by schools (AERO survey).


Legend: Strongly agree | Agree | Neutral | Disagree | Strongly disagree

Categories: Leaders share and discuss evidence to improve our practice | Sets aside regular times to discuss evidence | Uses evidence when deciding on policies and programs | Has coaching available to help staff use evidence
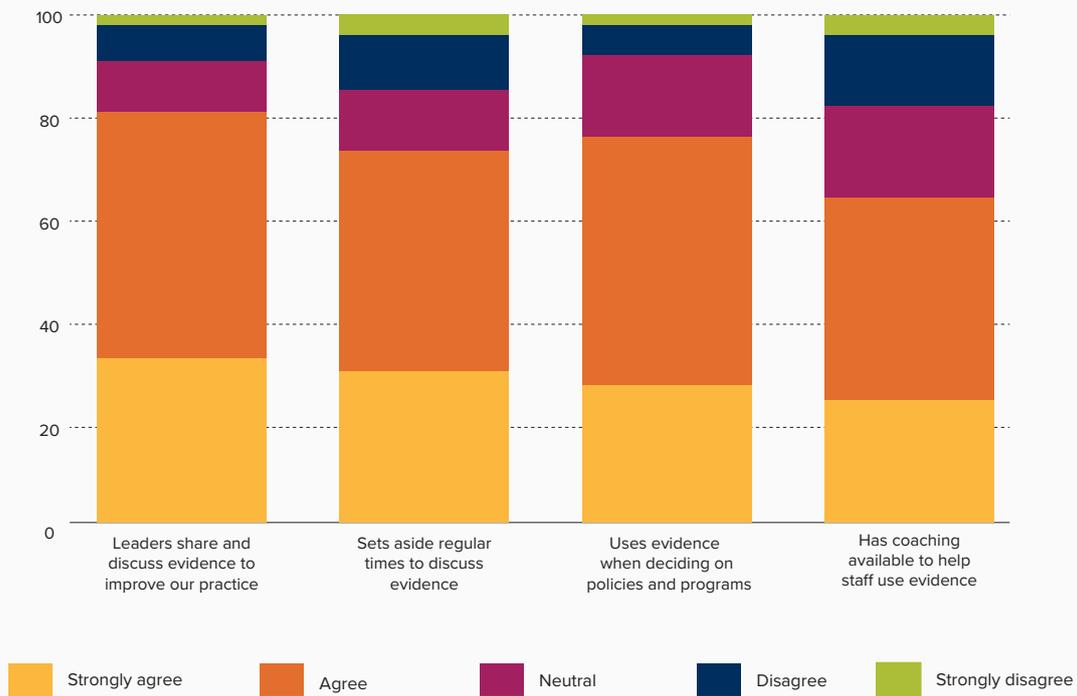
Figure 4: Teacher and leader perceptions of supports provided by schools (Q Project survey).

Categories: Facilitates collaborative learning | Refers to evidence of what works | Seeks information from a variety of sources | Encourages informed risk taking | Has formal processes for evidence use | Makes time available | Has informal processes for evidence use

Legend: Strongly agree | Agree | Neutral | Disagree | Strongly disagree
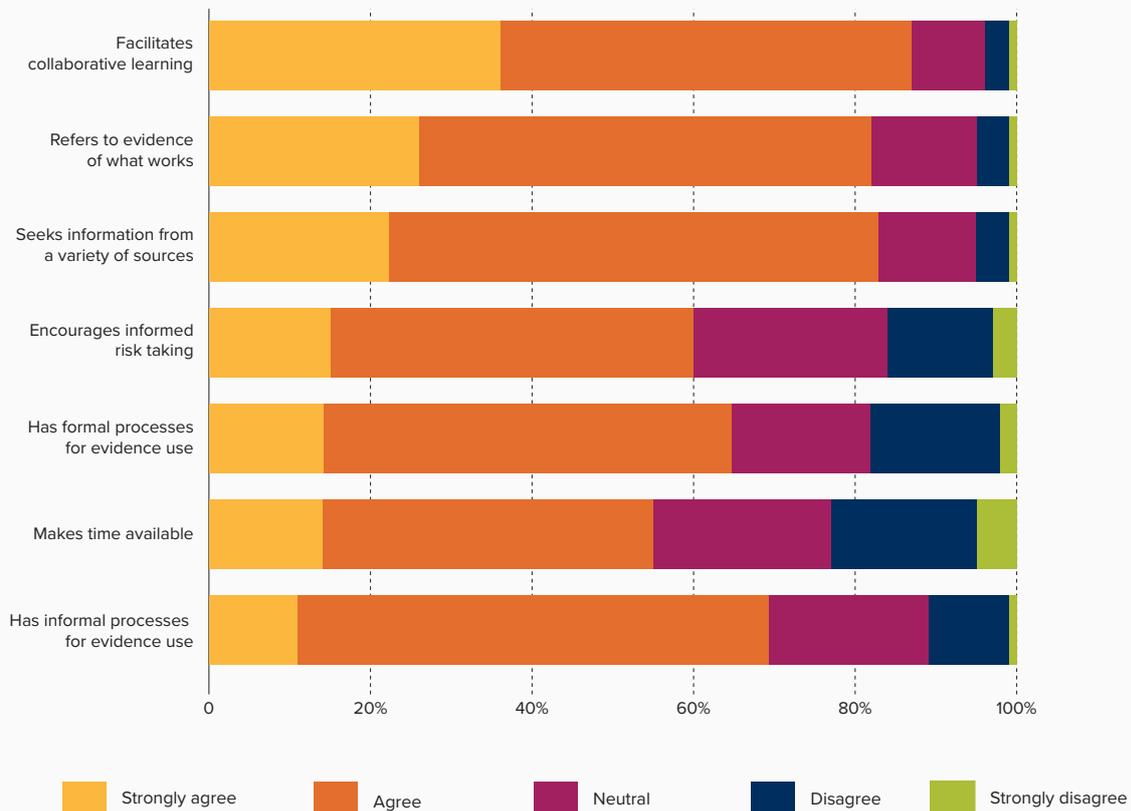
Figure 5: Use of research-based sources across Q Project and AERO samples

Q Project items
- University-based research articles
- University-based guidance or advice
- Professional publications

AERO items
- Consulted academic research for my own knowledge
- Referred to academic research in meetings
- Trialled a research-informed practice
- Consulted a document that summarises effective practices

Legend: Always / very often, Often, Sometimes, Rarely, Never

Figure 6: Teacher and leader perceptions of confidence (AERO survey)

Categories:
- To determine whether research is relevant or applicable to my context
- Changing my practice based on research
- To determine the rigour and quality of research

Legend: Very confident, Mostly confident, Somewhat confident, Slightly confident, Not at all confident
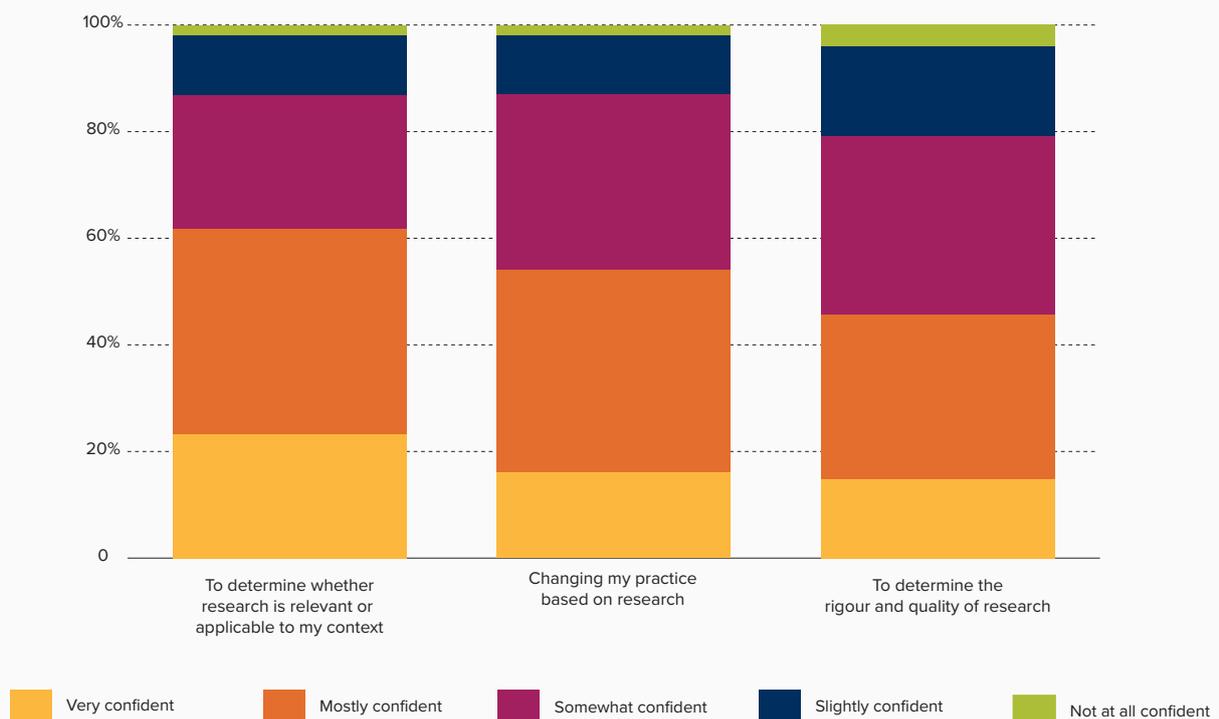
'There's almost barriers to entry with [research use], because when people don't feel that they're particularly confident with it…[then they don't use it]'

Middle Leader, Government Secondary School, Q Project

Opportunities to build confidence in using research evidence

One reason for research evidence not being used often may be a lack of confidence. Teachers and school leaders in both AERO's survey (Figure 6) and the Q Project's survey (Figure 7) expressed some concerns about their own abilities to use research evidence in practice. In particular, just under half (46%) of the respondents in the AERO survey were mostly/ very confident about determining the rigour and quality of research, while 45% of respondents in the Q Project survey agreed/strongly agreed that they felt confident to initiate discussions about research with their colleagues.

These confidence gaps represent important opportunities to target improvement initiatives within schools. Work conducted by the Q Project (Walsh et al. 2022) found that these initiatives should focus on (in rank order):

1. identifying issues where consulting research evidence would be appropriate

2. assessing the usability of research evidence

3. assessing research evidence for contextual relevance and fit.

Figure 7: Teacher and leader perceptions of confidence (Q Project survey)
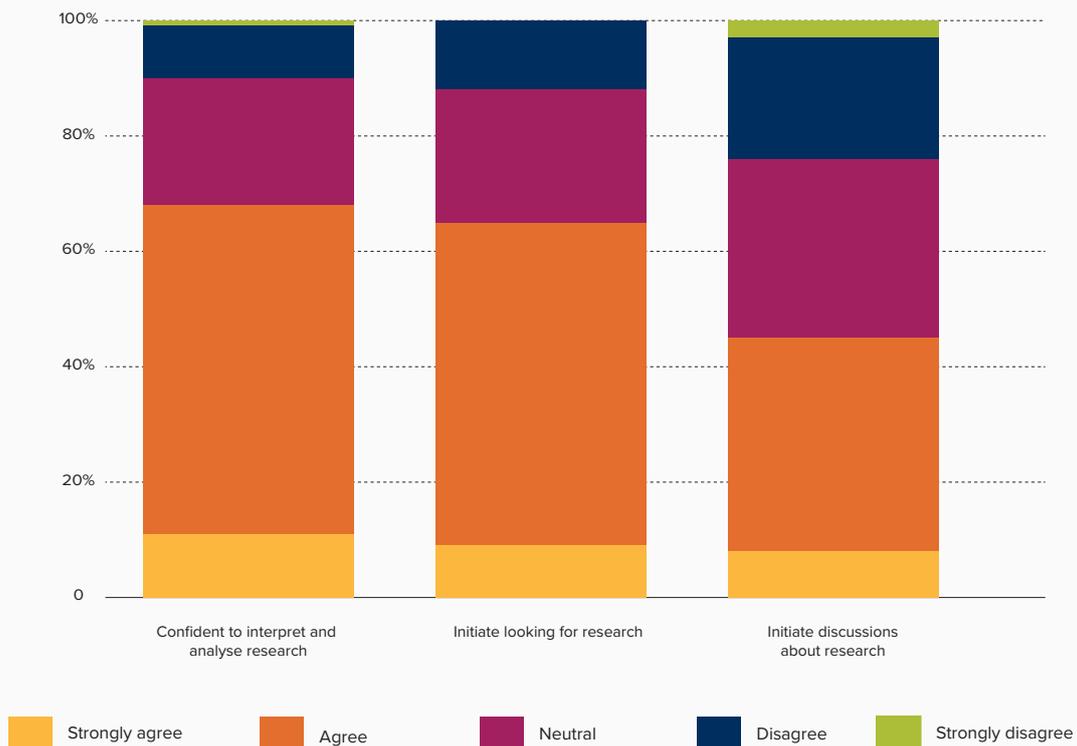
Building confidence through support improves research evidence use

Across both studies there was a clear relationship between schools' support of research evidence use, teachers' and leaders' confidence, and the frequency of their research evidence use[1].

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Defining school-based supports of research evidence use

The Monash Q Project conceptualises infrastructure as the school-based structures, resources and processes that support quality research use (Rickinson et al., 2020). These may include:

- the allocation of time, space, facilities (for example, a research library or centre) and budget
- access to research
- the creation of school-based coaches or research leaders
- professional learning opportunities
- research use being linked to key planning, inquiry and performance cycles
- research use being incorporated into meetings and formal discussions.

Effective leadership is required for supporting infrastructure to be developed and embedded within the school culture (Cutler et al., 2022).

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When teachers and leaders are supported by their school to use research evidence, they are:

- more confident in using research evidence
- more likely to use research evidence in their practice.

Confidence in using research evidence is important because it explains some of the relationship between support provided by a school and use of research evidence in practice. Specifically, provision of support can improve confidence, which in turn can foster greater use of research evidence in practice (Figure 8).

These findings emphasise the importance of providing support to improve use of research evidence in practice. Therefore, focusing on improving a school's culture and infrastructure around using research evidence can help to support teachers' confidence to use research evidence, as well as their use of this evidence in practice.

Conclusion

This collaborative report between AERO and the Monash Q Project outlines ways to increase and improve use of research evidence in a school's practices and decision-making.

The report shows that teachers and leaders are more confident in using research evidence and are more likely to use research evidence in their practice when supported to do so by their school.

Figure 8: Factors that increase use of research evidence

Increase teachers' and leaders' confidence to use research evidence

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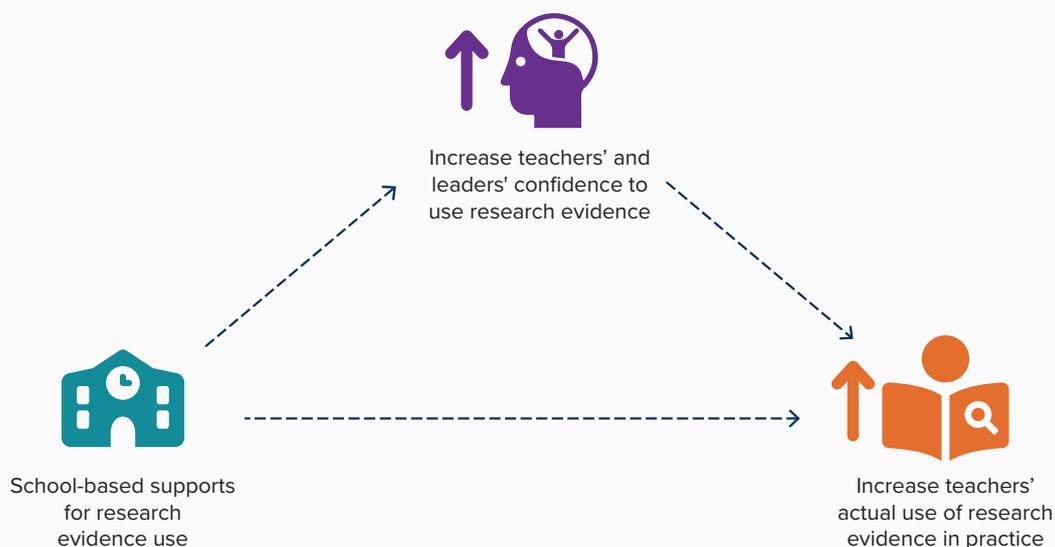
[1] See Appendix 2 for full model.

In summary, focusing on providing supports to use research evidence though a school's culture and infrastructure can improve research evidence use. The findings of this study can also provide a frame for school leaders and teachers to reflect on the use of research evidence in their context and the supports provided by their schools. Table 1 provides guidance to help to do this. By drawing on the guidance provided in this report, school leaders and teachers can work together to harness the potential of research evidence use for their own professional improvement, as well as to drive school-wide improvements in teaching and learning.

Guidance for providing support at your school

Insights from both AERO's and the Q Project's work suggest several supports can help improve a school's culture and infrastructure around using research evidence, which can then lead to increased and improved use of research evidence in practice (Table 1).

More information

If this report has sparked your interest about the quality use of research evidence, you might like to explore:

- the resources produced by the Monash Q Project
- further findings from the AERO evidence use survey.

You can also join the conversation with us on Twitter at @MonashQProject and @EdResearchAU.

Table 1: Ways to support use of research evidence in your school

Guidance	Benefits/supports	Resources
Schedule time during school hours, particularly in collaborative learning or discussion sessions.	This supports: • more frequent engagement with research evidence • more collaboration to make sense of evidence.	• The Q Project resource suites focus on schools providing time for research evidence use or facilitating collaborative research evidence use. • AERO's evidence decision-making tool for practitioners can be used for collaborative decision-making based on evidence.
Seek support from coaches, mentors and dedicated research use leaders.	Having someone to drive and guide research evidence use within schools is highly valued by teachers and leaders, helping them to develop their skills and confidence.	• A report from Melbourne Archdiocese Catholic Schools about their research lead trial (PDF).
Seek out opportunities to learn about using research evidence and to discuss evidence with peers.	These can help teachers and leaders build their confidence and skills to locate appropriate research and assess its relevance and rigour.	• AERO's Standards of evidence are helpful for making consistent and transparent judgements when assessing evidence. • AERO's Research reflection guide can be used for reflecting on a piece of research evidence. • The Q Project has a resource suite focused on finding and using research as well as sharing evidence. • The Q Project self-assessment tool provides teachers, leaders and schools with an immediate report of their research use capacities and access to tailored support resources.

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Appendix 1: Sample and data collection methods

Q Project data collection

Between March and September, 2020, 492 teachers and leaders from 414 schools completed the Monash Q Project's first survey (see Table 2). The survey included 8 quantitative questions and 8 qualitative questions about teachers' and leaders' perceptions and use of research in practice. The survey design was informed by a number of large-scale international studies of research evidence use in education and was piloted across three waves of cognitive testing prior to being administered (see Rickinson et al. 2021a for more details).

AERO data collection

Between February and December, 2021, 897 school teachers and leaders (with teaching responsibilities) completed AERO's evidence use survey (see Table 2). The survey included 6 quantitative questions about their:

- confidence and attitudes towards evidence
- use of evidence and evidence-based practice
- school's workplace supports and culture regarding evidence use.

The survey was informed by questions asked in similar surveys in Australia, UK and the USA.

Table 2. Demographic information for Q Project and AERO survey samples

	Q Project Sample n (%)	AERO Sample n (%)
School sector		
Government	325 (66.1)	601 (67.0)
Catholic	90 (18.3)	146 (16.7)
Independent	77 (15.7)	150 (16.7)
School type		
Primary	205 (41.7)	476 (53.0)
Secondary	156 (31.7)	283 (31.5)
Combined	117 (23.8)	101 (11.3)
Special	14 (2.8)	37 (4.2)
Years in profession*		
0-5 years	74 (15.1)	277 (30.9)
5-10 years	76 (15.5)	242 (27.0)
10-15 years	74 (15.1)	134 (14.9)
15+ years	267 (54.4)	223 (24.9)
Total N	**492**	**897**

* One survey respondent did not share their years in the profession in the Q Sample, while 21 did not in the AERO sample. N.B. years in profession was used as a continuous variable in regression models.

Appendix 2: Statistical model

Constructing the measures

Table 3 shows the items contained in each of the Monash Q Project's and AERO's surveys that captured the 3 domains of interest in this report:

1. support provided by a school to use research evidence

2. teacher and leader confidence in using research evidence

3. their use of research evidence in practice.

Each survey was analysed separately, with sets of survey items relating to each domain aggregated into average scores. These average scores were then used in the analyses of each dataset. All analyses were conducted in R using the lavaan package (Rosseel, 2012).

Mediation analysis

Mediation models can be used to examine whether an intermediary variable (that is, a mediator) explains some or all of the relationship between a predictor and an outcome (Hayes, 2009). In this case, we examined the relationships between the provision of school-based supports for research evidence use (that is, the predictor) with teachers' confidence to use research evidence (that is, the mediator) and their research evidence use in practice (that is, the outcome).

Table 3. Demographic information for Q Project and AERO survey samples

Indicator variable	Q Project Items	AERO Items
School support	**7 items about how well educators' schools:** • Facilitate a professional learning community or support collaborative learning • Have formal processes to help staff engage critically with different information sources	**8 items about how well teachers' schools:** • Have set aside regular times or meetings to discuss evidence that could improve our practice • [Provide] easily accessible information, resources, training or other support to help me use evidence to inform my practice
Confidence	**3 items relating to whether educators:** • Feel confident in analysing and interpreting research for my own teaching context • Regularly initiate discussions regarding research and its connection with school practice	**4 items relating to whether educators feel confident:** • Determining whether academic research is relevant or applicable to my situation or context • Determining whether academic research is rigorous or of high quality
Research use	**3 items about how often educators consulted:** • Articles, reports, books or summaries based on the work of universities or research organisations • Advice or guidance based on research from university or research organisations	**4 items about how often teachers:** • Trialled or refined an instructional practice based on academic research • Consulted research to improve knowledge about effective practices

Figure 9 provides a visual representation of the analysis results, with the AERO results in black and the Q Project results in orange. The standardised beta coefficients (β) indicate the strength of each pathway where a larger β value indicates a stronger relationship between two variables. The R-squared (R^2) indicates how much variation in each outcome is explained by the predictor(s) in the model. All pathways were statistically significant ($p < .001$).

In the simple relationship, support provided by schools significantly and positively predicted teachers' and leaders' use of research evidence in practice in both the AERO and Q Project samples.

In the mediated relationship, teachers' and leaders' confidence partially mediated the relationship between support provided by schools and research evidence use. That is, the influence of support provided by a school operates both directly (Support -> Research Use) and indirectly via teachers' and leaders' confidence (Support -> Confidence -> Research Use). This can be interpreted as the provision of support has a significant effect on teachers' and leaders' use of research evidence directly, as well as significantly improving their confidence, which in turn, significantly increases their use of research evidence in practice.

We acknowledge that causal interpretations of mediation models in cross-sectional data can be problematic (Maxwell and Cole, 2007; Maxwell et al. 2011; Rohrer et al. 2022), however, both the conceptual and empirical findings from the Monash Q Project support the identification of confidence as a mediator between support and research use (Rickinson et al. 2021a; Rickinson et al. 2021b).

Figure 9: Visual representation of direct and mediated models.

Simple relationship

Support — $\beta = 0.20$; $\beta = 0.34$ → Research use $R^2 = .04$ / $R^2 = .11$

Mediated relationship

Indirect pathway: $\beta = 0.09$; $\beta = 0.10$

Confidence $R^2 = .05$ / $R^2 = .08$

$\beta = 0.23$ / $\beta = 0.28$ $\beta = 0.45$ / $\beta = 0.35$

Support   Research use $R^2 = .23$ / $R^2 = .23$

Direct pathway: $\beta = 0.10$; $\beta = 0.24$
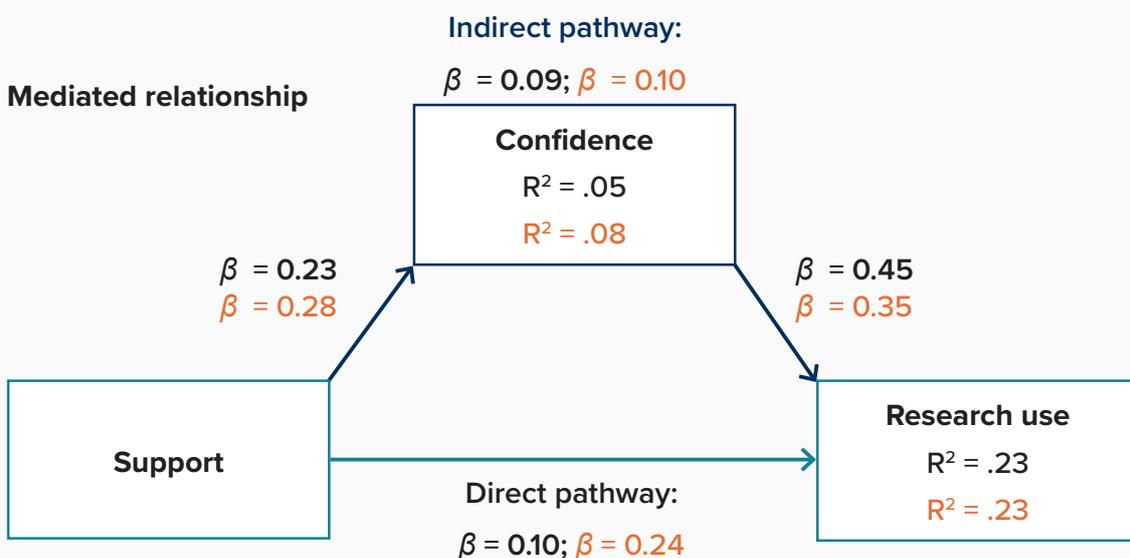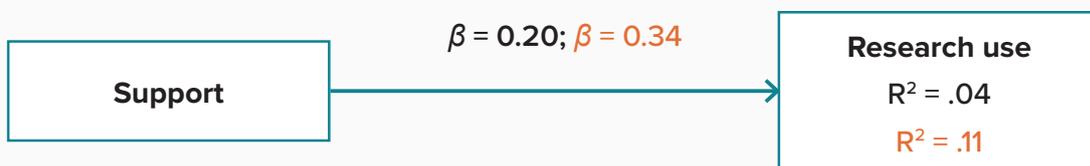
Note: All pathways are statistically significant, $p < .001$. p-values are omitted for readability.

How to cite

Australian Education Research Organisation (AERO) and Monash Q Project authors. (2022), Supporting teachers to use research evidence well in practice, edresearch.edu.au

Further information on AERO

AERO produces resources to support the use of high-quality research. Visit edresearch.edu.au

Further information on Monash Q Project

The Q Project: Improving the use of research evidence in Australian schools. Visit monash.edu/education/research/projects/qproject and follow @MonashQProject on Twitter.

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