USING RESEARCH WELL IN AUSTRALIAN SCHOOLS

Q DISCUSSION PAPER 02

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FOREWORD

The great promise of using research to inform decisions is to draw on the best of what's known to improve our chances of success. Instead of fumbling through the fog of the habits and traditions of our institutions or whatever idea is in the ether at the moment, we can be guided by clear insights from empirical studies to solve the problems we face.

But realising this promise is not straightforward. It requires the production of knowledge useful to practical challenges. It requires that knowledge to be available to decision-makers at times and in forms that can influence their decisions. It requires that evidence-based products and resources are produced and widely distributed.

We have all seen this work play out on a global scale, and with acute consequences, in the development of tests, public health advice and vaccines for COVID-19.

And we have seen that meeting these requirements in the 'supply' of knowledge is not enough. If decision-makers are not receptive to the insights of research to inform their professional judgement, then poor outcomes can be a consequence. We need only look to the waves of COVID-19 that have spread around the world, with all their personal, social and economic costs, to understand that.

In a field like education, research doesn't take the form of a vaccine that does its work in a dose or two. In schools, realising the promise of research requires practitioners to put evidence into practice continually over time. Across New South Wales and Victoria, making best use of more than $500 million in government funding for tutoring initiatives will be the work of at least a year. Helping senior students complete Year 12 when they are at risk of disengaging from school requires the concerted, coordinated efforts of families, communities and professionals over years. Teaching children to read is the work of years, not minutes.

Given this reality, those of us who want to improve the use of research in education need to understand what teachers and school leaders think about using research, what it looks and feels like to them, where they may be sceptical and what barriers they face to using it well.

This Monash Q Project Discussion Paper helps us to do just that. Drawing on the experience and expertise of nearly 500 teachers and school leaders in four Australian states, it gives a rich and clear sense of how Australian schools are using research.

This is timely evidence in itself. As Australian schools come to grips with the impact of the pandemic's ongoing disruptions, they are making decisions every day about how best to support their students, particularly those most at risk. The degree to which school leaders and teachers use research well in making those decisions will play an important role in shaping educational outcomes for many thousands of students over many years.

The stakes for using research well may not be as acute in education as they are for health, but they are no less profound or important. The time for this discussion is now.

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EXECUTIVE SUMMARY

The Q Project is a 5-year partnership between Monash University and the Paul Ramsay Foundation to improve the use of research in Australian schools. Drawing on survey and interview responses from nearly 500 Australian educators, this Discussion Paper shares insights about what educators believe is involved in using research *well* in practice. It builds on the Q Project's earlier Quality Use of Research Evidence (QURE) Framework (Rickinson et al., 2020a, 2020b), but moves the conversation from the conceptual (i.e., What does quality use mean?) to the practical (i.e., What does quality use look like in practice?).

EDUCATORS' VIEWS ON USING RESEARCH WELL

For educators, using research in practice needs to be intentional and purposeful, being done primarily to enact or bring about change. Change focusses on improving student learning and outcomes, but is also associated with school improvement, as well as strengthening educators' knowledge, practice and professionalism. **'Quality research use' is associated with effecting positive change,** whilst 'poor research use' is connected with no or ineffective change.

Using research well therefore matters to educators. This was revealed in different ways within educators' responses, including: the emotive language and expressions they used to describe research use in their schools and their beliefs about what constituted using research well and poorly; the consideration that they gave to describing the multiple dimensions of research use; and the differences between the perspectives of school leaders and teachers.

Six key characteristics of using research well emerge from educators' responses. For educators, quality research use is:

- **Embedded** – when research use is an intrinsic part of the school's processes, practices, language and culture;
- **Collective** – when all staff are consulted and engaged in research-related decisions, implementation, and reflection;
- **Purposeful** – when there are clear intentions and strategic purposes for engaging with and using research;
- **Time and effort-dependent** – when time is taken to engage deeply with the research and implement it carefully;
- **Curiosity-driven** – when research use draws and builds on staff curiosity, inquisition, and questioning; and
- **Connected to teacher professionalism** – when research use is fulfilling an expectation of ourselves as professionals.

EDUCATORS' VIEWS IN RELATION TO THE QURE FRAMEWORK

There were **strong connections between the ways in which educators talked about using research well and the components of the QURE Framework**. Key insights include:

- **Appropriate research** encompasses: traditional methodological rigor; educators' perceptions or assessments of 'expert' content, reputability, and credibility; evidence of impact; contextual relevance; 'teacher voice'; and practical usability.

- **Thoughtful engagement and implementation** are about: a way of approaching research and its use, incorporating specific research-related attitudes, dispositions and capabilities; a way of working with research, including how research is found, understood and implemented; and a way of benefitting from research and its use.

- Educators emphasised the **connection of skillsets, mindsets and relationships to quality research use**, including the needs for educators to: possess research skills; have a research-related mindset; be prepared to question and reflect on research; leverage different relationships; and build and maintain trust within relationships to improve research use.

- Educators emphasised the **connection of leadership, culture and infrastructure to quality research use**. Leaders were central to the organisational enablement of quality research use through: their own values and behaviours; the ways in which they lead implementation of research in practice; their fostering of research-supportive cultures; and their support of research use through the school's infrastructure.

- **System-level influences** were most frequently thought of as the school itself, or governing jurisdiction bodies. More often than not, system influences were viewed as barriers to quality research use.

CONSIDERATIONS AND CONCLUSIONS

Drawing on these findings, it can be concluded at this stage that **the QURE Framework is an appropriate and relevant way to conceive quality research use.** The detailed insights in this paper also provide important cues for teachers, school and system leaders, teacher educators, policy-makers, researchers and research brokers as to how research use can be increased and improved in educational practice.

Educators described in detail what using research well and poorly meant to them. As a result, educators shared with us their expectations of different leaders and stakeholders regarding research and its use, and what currently 'works', as well as what doesn't, in terms of research use support and resources.

Responses also highlight the importance of, and potential for, influencing research use at different system levels, particularly within and between schools, and two-way relationships between schools and jurisdictions, governments, official bodies, universities and research organisations.

Building on the insights shared within the paper, all educators and education system stakeholders are encouraged to consider the roles that they can play to help improve the use of research in schools. Key considerations include:

- **Educators themselves need to be supported as critical consumers of research and information.** Educators require the right confidence and skills to find, interpret and use research well. They also need to have open and questioning mindsets, and beliefs in the value of connecting research use with improved outcomes. Standards, interventions and resources are critical at all levels of the education system to support and scaffold educators' skill, confidence and knowledge development. School planning and reporting requirements should reflect the importance of these for improvement over time.

- **Research itself needs to be contextually relevant, credible and practical** for educators to want and be able to use it in practice. Researchers, policy-makers and research organisations need to ensure that research availability, accessibility and usability are increased or improved for educators. These types of support must also go hand-in-hand with increasing educators' awareness of credible and trustworthy research sources, as well as their research-related skills and confidence.

- **The challenge of available time needs to be addressed.** Helping educators to find the time to engage with research well is an issue for all education sector stakeholders to understand and resolve – it is not up to teachers alone to solve this. Benefits would be gained from understanding and documenting the different ways schools make dedicated time available to find and interpret research collectively, that are then linked to school performance planning and reporting processes. These types of case studies then need to be shared and leveraged across all schools.

- **Collaborations, both within and beyond schools, are important** in order to help teachers to find, make sense of, and engage more deeply with research. Educators need to be both encouraged and supported by colleagues, school and system leaders to leverage and/or expand their networks for improved research use. As a key message for school leaders, educators are also clear in their desires and expectations to be included in research-related decisions, discussions and implementation within schools. Teacher educators, research organisations, jurisdictions and governing bodies have roles to play in ensuring that school leaders have the skills and networks themselves to promote and embed trusting, experimental and collaborative school research cultures.

- **School leaders have other key roles to play in encouraging and supporting research use** in their schools. These include role-modelling positive research-related attitudes and behaviours themselves; embedding research use in school infrastructure such as in regular meetings, linked to improvement cycles, having dedicated research-lead roles and ongoing professional learning opportunities; and providing clear and consistent direction regarding the use of research in the school, and then ensuring purposeful and effective implementation of research-informed school improvements.

- **Cross-system co-ordinated efforts are important** so that educators hear consistent messages about the criticality of quality research use, are clear about how their improved research use is valued by different education system stakeholders, and have knowledge about what supports and resources are available to them.

The Q Project's findings continue to build and shape deeper understandings of what it means to use research well in educational practice. Our publications about educators' insights to date can be found here or via our website. With these previous insights in mind, along with those shared within this paper, we encourage different educators and system stakeholders to join us in discussions about quality research use and connect with the project to contribute to improving the use of research in Australian educational practice.

1 INTRODUCTION

The Monash Q Project is a 5-year partnership between Monash University and the Paul Ramsay Foundation to improve the use of research in Australian schools. Central to the Q Project's work is seeking to better understand an issue that has been investigated surprisingly little - what using research well means and involves in education. With this focus in mind, this Discussion Paper shares insights from Australian educators about what is involved in using research *well* in practice. It builds on the Q Project's earlier Quality Use of Research Evidence (QURE) Framework (Rickinson et al., 2020a, 2020b), but moves the conversation from the conceptual (i.e., What does quality use mean?) to the practical (i.e., What does quality use look like in practice?).

Drawing on surveys (*n*=492) and interviews (*n*=27) with teachers and school leaders, the aim of this Discussion Paper is to encourage conversations and consideration across Australian and international education systems about the different aspects of quality research use that are important to educators. This paper is therefore written for anyone who is interested in improving the use of research within and across all levels of schools and school systems. This could include teachers, school and system leaders, teacher educators, policy-makers, researchers, and research brokers and organisations.

1.1 BACKGROUND

This paper, and the work of the Q Project more generally, come against a backdrop of growing expectations in Australia and internationally that schools and school systems will use research to inform their improvement efforts (e.g., Australian Productivity Commission [APC], 2016; Nelson & Campbell, 2019; White et al., 2018). While in certain parts of the world, strong bodies of work exist examining if and how school staff use research in practice (e.g., Brown, 2015; Finnigan & Daly, 2014; Gorard, 2020), within Australia, there is surprisingly little knowledge of this topic. Some significant studies were undertaken several years ago (e.g., Biddle & Saha, 2002; Figgis et al., 2000), yet it is only recently that an interest in better understanding the role and use of research in Australian schools has been renewed (e.g., Mills et al., 2021; Parker et al., 2020).

Despite this growing interest in educators' use of research, the Q Project's analysis of relevant literature in the education sector, as well as those of health, social care and policy, found a definite lack of explicit definitions or descriptions of 'quality use' of research or evidence (Rickinson et al., 2020b). With a few important exceptions (e.g., Earl & Timperley, 2009; Parkhurst, 2017), well-developed articulations or discussions about what using research or evidence well means or involves were not found. Across all sectors, while there has been long-standing debate about the quality of evidence, there has been limited discussion about its quality use.

The Q Project believes that a common language or understanding about what constitutes quality use of research is important in order to: encourage collective discussion about and consideration of different enablers of quality research use in practice amongst different education system stakeholders; help educators be informed about and engage with best practice approaches and strategies within their schools; and target development of effective resources and supports for schools' research use that draw on a shared interpretation or frame of quality use.

1.2 MONASH Q PROJECT

A 5-year partnership between Monash University and the Paul Ramsay Foundation, the Q Project involves close collaboration with teachers, school leaders, policy-makers, researchers, research brokers and other key education stakeholders across Australia. The project's overarching goal is to understand and improve quality use of research in Australian schools.

The early phase of the project involved a systematic review and narrative synthesis of 112 relevant publications from health, social care, policy and education. The review and synthesis sought to explore if and how quality of evidence use had been defined and described within each of these sectors, in order to inform the development of the QURE Framework for education (Rickinson et al., 2020a). *Figure 1* shows this framework and its enabling components, as well as the accompanying definition of quality use of research in education.

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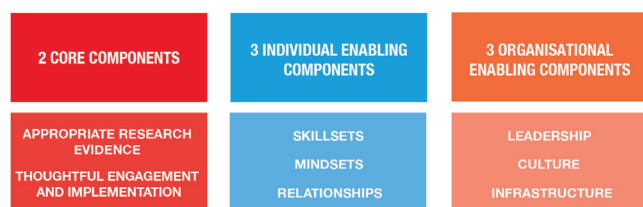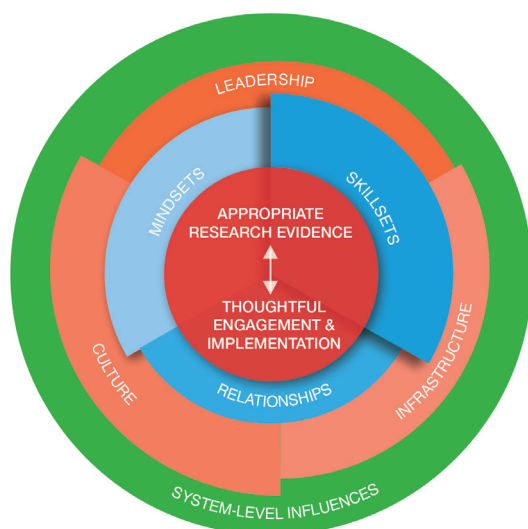

FIGURE 1: *QURE Framework and 'quality use of research' definition*

Building on this literature-based conceptual analysis and framework development, the project's school-based empirical research commenced in 2020. Centred around 'listening' to educators, the first year of this work involved:

- **A survey of educators** - Between March and September 2020, 492 educators from 414 schools across four Australian states (New South Wales, South Australia, Queensland, and Victoria) completed the survey. The sample comprised: 20% senior leaders; 12% middle leaders; 57% teachers; and 11% staff in other roles. The survey sought to explore how Australian educators find and use research and evidence. The items included a small number of open-response questions about 'using research well' and 'using research poorly'. It is educators' responses to these questions that are drawn on in this paper.

- **Online interviews with educators** - As follow-up to the survey, online interviews were undertaken with 29 educators (27 interviews in total) from 26 schools across the four participating states. Of the interviews conducted, 93% involved school leaders, and 7% involved teachers. These interviews sought to gain a deeper understanding of what educators believed was involved in using research well in practice.

Drawing on both of the above data collection processes, this paper brings together educators' qualitative survey responses and interview-based accounts relating to different aspects of using research well in practice. More details about the design, conduct and analysis of the survey and interviews are provided in the Appendix, with the findings relating to the quantitative items in the survey reported in the Research and Evidence Use in Australian Schools summary report (Rickinson et al., 2021).

1.3 STRUCTURE OF THIS PAPER

Following this introduction, the paper has three sections. In the next section, the ways in which educators[1] spoke about quality research use are discussed more broadly. The section explains how using research well matters to educators, and highlights six key characteristics of quality research use that are important to them. In Section 3, educators' views are related to the QURE Framework, showing clear links between descriptions of using research well and the components of the framework. Finally, Section 4 summarises the paper's key findings and outlines considerations for teachers, school and system leaders, and researchers and research brokers in relation to increasing and improving the quality use of research in schools.

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[1] For the purposes of this paper, participants overall are referred to as 'educators', while further distinctions are provided, where relevant, between teachers and school leaders. School leaders include those who self-identified as middle leaders, senior leaders and/or school principals.

2 EDUCATORS' VIEWS ON USING RESEARCH WELL

This section explores educators' views on using research well. It highlights how using research well matters to educators, which was reflected in the different ways in which educators spoke about using research well and poorly. It also highlights six key characteristics of quality research use that are important for educators.

2.1 USING RESEARCH WELL MATTERS TO EDUCATORS

For educators, using research in practice needs to be intentional and purposeful, being done primarily to enact or bring about change. Change centres around student learning and outcomes, but is also associated with school improvement, as well as strengthening educators' knowledge, practice and professionalism. Overall, 'quality research use' is associated with effecting positive change, whilst 'poor research use' is connected with "no change" or "ineffective change".

Using research well therefore matters to educators. This was revealed in different ways within educators' responses, including: the emotive language and expressions they used to describe research use in their schools and their beliefs about what constituted using research well and poorly; the consideration that they gave to describing the multiple dimensions of research use; and the differences between the perspectives of school leaders and teachers.

LANGUAGE AND EXPRESSIONS USED BY EDUCATORS: Educators adopted a variety of techniques, styles and expressions when describing research use. These included: telling stories of their own experiences or observations of research use; relating evidence-use frameworks to their school's use of research in practice; expressing their expectations of others with regards to supporting research use; or listing the elements of research use that they believed were important.

One of the more powerful techniques adopted by educators, which became particularly evident during interviews, was them posing questions to illustrate how they would behave and/or think in particular situations of research use. This self-questioning response style revealed the thought and consideration educators gave to ensuring that their research use was effective. For example, when finding and assessing research as fit-for-context, one teacher stated:

> ❝ *We know this is how children learn to write, but is it exactly the same for children with disabilities or are there extra things we need to take into consideration? We [also] know [that] this is what's recommended…[but] is that something that is fully appropriate? So, [there is a need to] actually go and see [how the research is being used and ask] 'How is someone else using the same information in a different context? How is it being used? Is it something that could be useful for what we're doing? Or is it something that might be great for some of our kids, but maybe not others?'* ❞
>
> Interview response, Teacher, Government Primary School, New South Wales

Emotive language used in both survey and interview responses was also an indication of the importance of research use to educators. Such language revealed not only a passion for research use, but also an interest in "getting it right". For example, two school leaders shared their views about research use:

> ❝ *I love research, I just think it has such a positive impact. And I think that if you can prove that it works…then that's what you should be using* ❞.
>
> Interview response, Senior Leader, Government Primary School, Queensland

> **"** *I didn't just leave my reading at the little bit of information [I was given] in that training day. For me, to feel like I'm doing my job well, I have to do that professional reading that informs my practice, so that I know that practice [deeply] and I know that what I'm doing is the right thing to do…so there is nothing left to chance. And then how I use that…I've got the knowledge then to be able to [lead] the way that I do* **"**.

Interview response, Senior Leader, Government Primary School, South Australia

Emotive language used when describing what would be happening when research was not used well was particularly insightful (see *Box 1* for examples). Such descriptions not only highlighted how quality research use mattered to educators, but also illuminated certain risks and negative consequences associated with poor use.

BOX 1: *Examples of educators' emotive language when describing poor research use*

Dramatic language	**Blaming language**	**Blunt or pointed language**
There would be "chaos, overwork [and a] lack of clarity about why something is [being] forced upon us".	Teachers would be "reading it and doing nothing with it".	The research used was "irrelevant, time-wasting [and] unclear".
Survey response, Middle Leader, Government P-12 School, Queensland	**Survey response, Education Support, Government Primary School, Victoria**	**Survey response, Middle Leader, Government P-12 School, South Australia**
Cynical language	**Resigned language**	**Critical language**
There is "too much research [and] not enough teaching".	"Same old, same old. [There is] no discussion about trying new ways. Cattle tracks are worn in – because [we] keep doing the same things to get the same results".	The research would be "used as a weapon to beat up others".
Survey response, Teacher, Government Primary School, New South Wales	**Survey response, Senior Leader, Government Primary School, New South Wales**	**Survey response, Senior Leader, Independent P-12 School, Victoria**

MULTIPLE DIMENSIONS: Research use, overall, was viewed by educators as multi-dimensional. Whilst both 'using well' and 'using poorly' were described diversely, different elements, tasks or personal qualities repeatedly emerged in their descriptions. These various descriptions provided deeper insights, not only into the dimensions of quality research use that were important to different educators, but the **encompassing or complex nature of use**. *Box 2* shows examples of the different ways in which educators described quality (shown in green) and poor (shown in red) research use.

BOX 2: *Examples of different dimensions of research use evident in educators' responses*

Dimensions of research use	Positive examples	Negative examples
The research, or source of research, itself	The research has "got [to have] a strong research basis. [For example] either a history or there are multiple researchers in the field who are affirming [an] appropriate teaching practice based on research. [Or] clear impact [has been shown] over time". **Interview response, Senior Leader, Independent P-12 School, New South Wales**	Poor research use involves "research that 'fits' a particular trend or fad that doesn't have any evidence of improving student learning. Something [found] on 'Twitter' that has not been looked at critically". **Survey response, Senior Leader, Government Primary School, New South Wales**
A list of actions or tasks	Using research well involves "reading, reflection, consideration, trialling, application [and] assessing". **Survey response, Teacher, Independent P-12 School, New South Wales**	Poor research use involves "no collaboration, data not [being] used [and] teaching practices not [being] developed". **Survey response, Senior Leader, Government Primary School, New South Wales**

BOX 2: *Examples of different dimensions of research use evident in educators' responses (cont.)*

Dimensions of research use	Positive examples	Negative examples
A single research task – such as trialling research	Using research well means "debriefing [the research] along with colleagues after a suitable trial period and trial of other methods to gather evidence of what works or not. Implementing programs that support [trial] findings and [then] looking at results [to see] if they are consistent with similar cohorts". **Survey response, Teacher, Catholic Secondary School, New South Wales**	Using research poorly means "things would be quickly trialled and abandoned, practice would stay overall the same, [and] teachers [would be] say[ing] things like 'Research is all well and good, but it doesn't work like that in the classroom'". **Survey response, Teacher, Government P-12 School, Victoria**
Outcomes, impact or effect	Quality research use leads to "reduced pressure on both teachers and students". **Survey response, Teacher, Independent P-12 School, New South Wales**	Poor research use leads to "unhappy staff, low student progress, [and] complacency". **Survey response, Teacher, Government Special School, Victoria**
A predominant behaviour or action – such as reading research	"[I make] the time to look at a variety of sources on a specific topic, analyse them all, discuss, apply in the classroom and reflect on their effect". **Survey response, Teacher, Government Secondary School, Queensland**	"[Teachers] just read [the research] for the sake of filling in time at a staff meeting". **Survey response, Teacher, Catholic Secondary School, Queensland**
A mindset or attitude	Using research well means "to keep an open mind and not be biased, [but] still having a focus and a particular lens when searching/reading/discussing [research]. [It means] to not jump so quickly into agreeing or disagreeing with the evidence". **Survey response, Senior Leader, Government Primary School, New South Wales**	Poor research use involves "teachers only seeking research that fits their beliefs, resulting in a static state of mind where there is no room to learn". **Survey response, Education Support, Government Secondary School, New South Wales**
Leadership or leadership behaviour	"From a leadership perspective, leaders would collaborate with teachers to gather research to help design systems and structures in line with the school's vision". **Survey response, Teacher, Government Primary School, Queensland**	Poor research use is when "someone in power gets a bee in their bonnet about a new research idea and foists it on the entire school community with no ownership or engagement of the teaching body as a whole". **Survey response, Teacher, Government Secondary School, Queensland**
A school culture	Using research well means having "a staff culture of regularly researching modern education practices. School leaders determine the importance of a range of research and expose staff to it in an appropriate manner". **Survey response, Teacher, Government Secondary School, Victoria**	"Staff at this school are experiencing change fatigue. I think the [culture] was that this is 'just another one of those things', that 'research is an add on and that after we tick this box, we get back to the real teaching'. It's definitely not part of our culture here to use research". **Interview response, Middle Leader, Catholic Secondary School, Victoria**
An enabler or barrier	Using research "enabled increased collaboration and a system-based approach to sharing of and accessibility to academic and wellbeing data on students". **Survey response, Senior Leader, Catholic Secondary School, Victoria**	"But I think that there's barriers to entry with [research use], because when people don't feel that they're particularly confident with it, [they don't use it or use it well]". **Interview response, Middle Leader, Government Secondary School, Victoria**

DIFFERENCES IN SCHOOL LEADERS' AND TEACHERS' VIEWS: Several differences were evident in the ways in which teachers responded to questions as compared with school leaders. For example, teachers' descriptions of research use were briefer and/or more precise in most cases when compared with school leaders' responses. These differences may reflect leaders' greater engagement in research use than teachers, as indicated by our quantitative survey findings. All response styles were helpful, with teachers' sharper articulations helping to pinpoint aspects of research use that were important to them in particular, while school leaders' more comprehensive responses provided important detail about was involved in using research well. Teachers also responded mainly from their own perspectives of research use, whereas school leaders appeared more considered in their responses when describing the impacts of research use, particularly if poorly implemented, often referring to others or the broader school community. These different perspectives gave shape to expectations that teachers, in particular, had of others with respect to supporting research use.

The main difference between school leaders' and teachers' responses, though, **was the criticism that each levelled at others for poor research use.** Teachers appeared more explicitly critical of school leaders when research was not used well (see *Box 3* for examples), with responses indicating a need for or expectation of school leaders to guide and involve others when using research.

BOX 3: *Examples of teachers' survey responses criticising or blaming school leaders for poor research use*

Research is used poorly "when it is used to make decisions by those at the top without giving teachers an opportunity to consider the evidence and to discuss its implications". **Teacher, Independent P-12 School, South Australia**	Poor research use involves "one senior leadership person taking a piece of research 'as gospel' and deciding practices within the school should change without consultation". **Teacher, Independent P-12 School, Victoria**	Poor research use involves selecting "research [that] is conducted by and/or chosen by someone who is no longer teaching. Research is used as a one size fits all approach. Teachers are not meaningfully consulted about how to best implement the research findings". **Teacher, Catholic P-12 School, Victoria**

School leaders' responses appeared less explicitly critical of others, at times even implying their own or system leadership may be at fault. For example, one senior leader, when making an observation of their school's poor use of research, stated:

> *Research is being used poorly because* **"** *staff feel as if this is another layer to their teaching routine. There is a reluctance to take on board another change and the research is [being] used a mandate to change* **"**.
>
> Survey response, Senior Leader, Catholic Secondary School, Victoria

Nevertheless, school leaders were particularly critical of some teachers who were seen to use research poorly (see *Box 4* for examples).

BOX 4: *Examples of school leaders' survey responses criticising or blaming teachers for poor research use*

Poor research use occurs when "teachers disregard the research, and do not simply 'give it a go'". **Senior Leader, Catholic Primary School, Victoria**	"Teachers would read research/evidence and not incorporate [or] consider [it, or] make adjustments based on [it]. [The research is] used for reading alone [and] not acted on to enhance student outcomes". **Middle Leader, Government Primary School, New South Wales**	Poor research use means "[teachers] doing the same thing each year, without using [research and] data [that results in] the same outputs, as 'this is the way we've always done it and I reckon it works'". **Senior Leader, Government Primary School, South Australia**

2.2 KEY CHARACTERISTICS OF QUALITY RESEARCH USE

From the ways in which educators spoke about research use, particularly when describing 'using research well', a number of key characteristics emerged. For educators, **quality research use is: embedded, collective, purposeful, time and effort-dependent, curiosity-driven and connected to teacher professionalism.**

These characteristics were selected as key because of the powerful ways in which they featured in educators' survey and interview responses, as well as how often they were referenced (as shown in *Table 1*).

TABLE 1: *Percentage of survey respondents (n=492) and interviews (n=27) coded to emergent key characteristics*

Characteristics	Using Research Well		Using Research Poorly	
	Interviews	Survey	Interviews	Survey
Embedded	23 (85%)	367 (75%)	5 (19%)	50 (10%)
Collective	22 (81%)	150 (30%)	9 (33%)	129 (26%)
Purposeful	24 (89%)	383 (78%)	16 (59%)	160 (33%)
Time and effort-dependent	15 (56%)	271 (55%)	17 (63%)	115 (23%)
Curiosity-driven	12 (44%)	318 (65%)	13 (48%)	61 (12%)
Connected to teacher professionalism	22 (81%)	323 (65%)	3 (11%)	198 (40%)

EMBEDDED: For research to be used well, it was often described as being an **intrinsic part of the school's culture or environment.** Phrases such as "whole-of-school approach", "common language", "every-day way of doing things" and "every breath we take" were used to illustrate how research use was, or should be, embedded in practice, discussions and decision-making. Educators described a number of ways in which research use was a part of their school's environment including in both formal and informal processes, school strategic and individual performance plans, staff discussions, and professional learning sessions. At times though, their descriptions went beyond the tangible, inferring that quality research use was, or should be, a sub-conscious part of an individual's behaviour or cognition, as well as the school's culture.

> " *Using well means it's intrinsic in your language, it's intrinsic in your approach…we talk [research] all the time* "
> Interview response, Senior Leader, Government Primary School, Queensland

> " *It's not about me [the school leader]. It's about the collective and empowering staff to get on board* ".
> Interview response, Senior Leader, Catholic Secondary School, Victoria

COLLECTIVE: Educators emphasised the **importance of collective engagement** in and with research and research-informed changes to practice. Without collective engagement, research use was deemed as poor. This was often described as a lack of staff consultation and acceptance of the research, using phrases such as "no shared buy-in", "only pockets of staff talking about and using the research", "inconsistent and disjointed approaches causing conflict and confusion", "lack of shared clarity about why something is being forced on us", "top-down mandated implementation" and "not everyone on board". With collective engagement, educators' responses suggested that practice, teachers' knowledge and capabilities, as well as the school's culture, could be positively transformed – ultimately improving student outcomes.

PURPOSEFUL: Educators described the importance of being purposeful in research use intent and behaviours. Behaviours associated with searching for appropriate research, for example, were described as needing to be intentional, considered or focused, and not "ad hoc" or "just searching for the sake of searching". Additionally, quality research use was often associated with effective leadership behaviours. Teachers in particular looked to leaders to provide direction about intended practice change, ensure the purpose of research decisions were clear and transparent, and demonstrate that the research suited both the current context and future change goals. The nature of these descriptions suggested that **the research itself, not just associated behaviours and intentions, also needed to serve a purpose** – with that purpose overwhelmingly being shaped by the context of the practice, students or the school environment as a whole.

> *It starts at the top…and that's our decision for the whole school. And it's transparent and we make sure all the staff have an understanding of what's expected.*
> Interview response, Senior Leader, Government Primary School, New South Wales

> *Because we live in this fast-paced way that we work and schooling…I think that concept of slowing down to then help you speed up is something that we might need to do a little bit more of.*
> Interview response, Senior Leader, Government Primary School, Queensland

TIME AND EFFORT-DEPENDENT: Educators' responses indicated strong associations between quality research use and the **investment of time and effort** across a spectrum of research use tasks. There was a sense of prudence evident in educators' descriptions, particularly if initial attempts to use and implement research had not gone well. Dedication of time, as well as taking the time to engage with research and related decisions deeply and carefully, were described as key enablers of using research well. Phrases such as "rushed", "onto the next thing", "tokenistic", and "cutting corners" were used in contrast to depict a lack of time or care taken when using research. More importantly, responses inferred that a conscious slowing down of research-related tasks was necessary to properly engage with the research and ensure not only its relevance and usability for the context at hand, but also its effective integration into practice.

CURIOSITY-DRIVEN: Many educators used various descriptions for their own 'curious' mindset or behaviours including "self-starter", "passionate about research", "interested in learning" and having a "growth mindset". Most believed that **being curious and inquisitive were key dispositions** of an educator who used research well. Particularly during interviews, educators 'mapped' themselves or others as research users onto the inquiry-based pedagogies that they used with students. They expected to be open-minded and inquisitive learners of new knowledge through research use just like they sought to foster in their students. Educators described, particularly during interviews, many positive examples of situations when inquiry and questioning of research and knowledge were fostered within a school, and how this had created a "snowball effect" of not only collective knowledge acquisition through research use, but a transformation of the school culture to one where research use was an intrinsic part of every-day practice.

> *Number one disposition is being curious. I keep using the word 'inquiry'…having the willingness to go forward with inquiry-oriented action into exploring what that research is.*
> Interview response, Senior Leader, Government Primary School, Queensland

> *From my point of view, it would be careless and wrong professional conduct if we [did] not reach or try to gain as much evidence about student behaviour as we [could].*
> Interview response, Middle Leader, Government Primary School, Queensland

CONNECTED TO TEACHER PROFESSIONALISM: Educators' responses indicated that **research use was an expectation of themselves as professionals**, and the profession as a whole, **as well as an obligation to do the "best that they can" on behalf of themselves and students**. Through research use, many described improvements and benefits experienced in their: practice, knowledge and professional conduct; capabilities and confidence to explain the purpose of their practice approaches; appetites for learning; reflective capacities; abilities and confidence to role-model 'best practice' and influence change in colleagues' practice; and school's culture of professional learning. Descriptions such as "empowered to impact learning in classrooms", "developed a growth mindset" and "inspired to be a reflective practitioner" were used to illustrate some of these benefits.

2.3 SUMMARY

Educators' responses indicated that using research well matters to them. This importance was revealed through: the language and expressions that they used when describing research use and what constituted using research well and poorly; the consideration that they gave to describing the multiple dimensions of research use; and the differences in their responses, particularly those of teachers when compared with school leaders.

Six key characteristics of using research well emerged from educators' responses. For educators, quality research use is:

- **Embedded** – when research use is an intrinsic part of the school's processes, practices, language and culture;

- **Collective** – when all staff are consulted and engaged in research-related decisions, implementation, and reflection;

- **Purposeful** – when there are clear intentions for using research connected to effecting positive change;

- **Time and effort-dependent** – when time is taken to engage deeply with the research and implement it carefully;

- **Curiosity-driven** – when research use draws and builds on staff curiosity, inquisition, and questioning; and

- **Connected to teacher professionalism** – when research use is fulfilling an expectation of ourselves as professionals.

3 EDUCATORS' VIEWS IN RELATION TO THE QURE FRAMEWORK

This section relates the ways in which educators spoke about using research to the different components and system-level influences of the QURE Framework (Rickinson et al., 2020a, 2020b) (see *Figure 1*). For each component of the framework, educators' descriptions of research use are compared to how it was originally conceptualised, with any key similarities and differences highlighted.

3.1 OVERALL TRENDS IN EDUCATORS' RESPONSES

As outlined in the Appendix, survey and interview questions asked of educators did not relate specifically to the QURE Framework. When analysing educators' responses, codes that related to the framework were used, but the various ways in which educators described different framework components were inductively analysed. As such, their insights allow for deeper understandings of what each component may involve, as well as what aspects of each are viewed as important by educators.

Overall, **there were strong connections between the ways in which educators talked about using research well and the contents of the QURE Framework, with all framework components featuring in educators' descriptions.** As shown in *Table 2*, some enabling components featured strongly in both survey and interview responses (e.g., 'skillsets'). This may be because they are more easily understood or able to be articulated, more obvious in a school environment, or more widely experienced. Other components featured more strongly in interviews rather than survey responses[2] (e.g., 'mindsets', 'culture'). This may be because they are more difficult to articulate in writing, are highly subjective and/or the narrative style of interviews allowed for richer and evolving descriptions to emerge. With regards to the core components, educators provided many and varied descriptions that could be attributed to conceptualisations of 'appropriate evidence' and 'thoughtful engagement and implementation'. System-level influences, however, were the least mentioned in either surveys or interviews and were described in diverse ways.

TABLE 2: *Number and percentage of survey respondents (n=492) and interviews (n=27) coded to QURE Framework*

Themes	Using Research Well		Using Research Poorly	
	Interviews	Survey	Interviews	Survey
Core Components				
Appropriate Evidence	25 (93%)	430 (87%)	18 (67%)	11 (2%)
Thoughtful Engagement	26 (96%)	451 (92%)	18 (67%)	223 (45%)
Thoughtful Implementation[3]		411 (84%)	18 (67%)	
Enabling Components				
Individual				
Mindsets	24 (89%)	309 (36%)	23 (85%)	104 (21%)
Skillsets	24 (89%)	447 (91%)	17 (63%)	88 (18%)
Relationships	26 (96%)	144 (29%)	5 (19%)	47 (10%)
Organisational				
Leadership	24 (89%)	207 (42%)	13 (48%)	136 (28%)
Culture	26 (96%)	186 (38%)	14 (52%)	121 (25%)
Infrastructure	27 (100%)	105 (21%)	23 (85%)	37 (8%)
System-level Influences	9 (33%)	17 (3%)	19 (70%)	18 (4%)

[2] As outlined in the Appendix, the survey codebook was used as a basis for interview coding, and therefore, the interview codebook evolved during coding and was more comprehensive.

[3] Thoughtful engagement and thoughtful implementation were coded separately in surveys.

3.2 APPROPRIATE RESEARCH

The Q Project conceptualised this first core component as: the "need for research to be not only methodologically rigorous, but also appropriate for the educational issues, the context and the intended use" (Rickinson et al., 2020b, p. 9). Educators' responses featured each aspect of this conceptualisation and additionally provided deeper insights into certain features of appropriate research that were important to them.

Overall, when educators spoke about appropriate research, they focused on two main issues:

(i) **the quality of the research itself** (referenced in 74% of interviews and 12% of surveys); and

(ii) **the relevance of the research to the context** (81% of interviews; 43% of surveys).

QUALITY OF THE RESEARCH: With regards to the actual research itself, educators indicated that research 'quality' was important. In a small number of instances, this was articulated by educators as the research method involving traditional scientific measures or criteria of methodological rigor, such as statistical validity and reliability (15% of interviews). In most cases though (see *Box 5* for examples), particularly during interviews, educators articulated or described their ways of ascertaining research 'appropriateness' through assessing:

(i) the **'quality of the source'**, involving perceptions of expertise and reputation (52% of interviews);

(ii) the **'quality of the research'**, involving perceptions of trustworthiness and credibility (41% of interviews);

(iii) whether the research had **'academic backing'** (33% of interviews); and

(iv) what **'evidence of impact'** was demonstrated by the research (33% of interviews).

BOX 5: *Examples of different educators' perspectives on quality research*		
Scientifically Valid Appropriate research "means published and peer reviewed articles and papers… widely accepted theories that have a scientific backing [and] reasonable proof that there are results that are positive or seem to work". **Interview response, Teacher, Government Secondary School, Victoria**	**Credible Source** Research is appropriate "if it's come from a source that you can trust, like through the Department of Education or from a university, or from some reputable source where you know that they wouldn't [share it] unless they had done the background research… that can give you some confidence in using that source". **Interview response, Teacher, Government Secondary School, Victoria**	**Evidence of Impact** The research has "got [to have] a strong research basis. [For example] either a history or there are multiple researchers in the field who are affirming [an] appropriate teaching practice based on research. [Or] clear impact [has been shown] over time". **Interview response, Senior Leader, Independent P-12 School, New South Wales**
Current Research "I don't just go on research from 30 years ago, because I've been reading a bit for 30 years. I can still see the relevance of that sometimes. But I'm reading what's current now, because that [way], we're all learning all [of] the time". **Interview response, Senior Leader, Government Primary School, South Australia**	**Successfully Trialled** "[It's] not just [about] the teacher walking in and going 'I'll just do this because I've done [it before]', [it's] actually about looking at what is the best research out there for the students and what's been trialled before and found to be successful". **Interview response, Teacher, Government P–12 School, Queensland**	**Large-scale and Unbiased** "Research has to be conducted without bias, using a large data base [and] preferably over years". **Survey response, Middle Leader, Independent P–12 School, Victoria**

RELEVANCE OF THE RESEARCH TO THE CONTEXT: Similar to our quantitative survey findings, contextual relevance was a very strong qualitative theme. Educators indicated that context could be specific to: student cohorts and their needs or desired learning outcomes; school cultures; problems that needed solving or improving; practice change or implementation; decisions; teachers' professional development needs; and subject disciplines. When **contextual relevance** was spoken about, it was done so in several key ways. While global perspectives were valued, there was a sense that Australian research, or research that considered "local" situations and contexts, was more important or relevant.

Further, even if certain research was relevant but not initially suitable for implementation, its 'adaptability' was also assessed from the perspective of context. For educators to be able to determine whether, to what extent and how adaptation could occur, they needed to be able to relate the research to their current contexts and practice change goals, and vice versa. Lastly, 'teacher voice' was important for the research to be considered relevant for context. If the research was deemed as being "removed from the classroom" or not conducted with "teachers and their practice in mind", then there was a sense that the research could not be applied to practice contexts. At times, particularly during interviews, this meant that educators were quite critical of 'academics', 'universities' and 'academic research', as well as school leaders who may no longer teach themselves, but select 'appropriate' research on behalf of teachers.

> *It's important to ... understand the context and part of that is the culture of the school…and the vision and values that we work within. For us, when we're looking at any of the research that we bring into the school, we're also then putting a lens over that of 'how does this fit within what we value?'*
>
> Interview response, Senior Leader, Government Primary School, South Australia

> *What I have discovered with teachers is [that they] are very much looking for a practical technique described in a way that they could [understand it easily] and then take it into the classroom… try it, trial it again, experiment with it and monitor the impact*.
>
> Interview response, Senior Leader, Government Secondary School, Victoria

Even if selected research was relevant for context, educators' responses, particularly during interviews, indicated that **'usability' was equally important**. One senior leader noted that if research, in its original or adapted forms, could not be 'interpreted', 'consumed', 'accepted' or 'applied' by teachers in practice, then the research may not be considered as appropriate (Interview response, Senior Leader, Government Secondary School, Victoria). In some cases, educators described how their school communities were investing time and effort to "repackage" research into short videos, summary reports or infographics in order to "bridge" the gap between the original research and educators' acceptance of the research as relevant and useful.

3.3 THOUGHTFUL ENGAGEMENT AND IMPLEMENTATION

The Q Project conceptualised this second core component as: "critical engagement with the evidence, shared deliberation about its meaning and effective integration of aspects of evidence within practice" (Rickinson et al., 2020b, p. 9). It presents as an 'over-arching' component that straddles many individual enablers of quality research use.

While educators rarely used the term 'thoughtful' explicitly in their survey or interview responses, it was clear that the ways in which research is engaged with and implemented are important and matter to them. More specifically, educators' perspectives on using research well or poorly suggest that thoughtful engagement and implementation are about:

(i) **a way of approaching research and its use** (e.g., with an open mind);

(ii) **a way of working with research** (e.g., considering a wide range of research); and

(iii) **a way of benefitting from research and its use** (e.g., improved teacher professionalism).

These perspectives on thoughtful engagement and implementation **reflect all six of the emergent key characteristics of quality research** use outlined in the previous section.

A WAY OF APPROACHING RESEARCH AND ITS USE:
Educators themselves can be thoughtful when approaching the use of research, with responses suggesting the importance of:

(i) **individuals' thoughtful attitudes and dispositions** (referenced in 93% of interviews and 47% of surveys); and

(ii) their **research-related reflective capabilities** (67% of interviews; 54% of surveys).

Overall, **"thinking"** and **"reflection"** were important representations of thoughtfulness. Educators' responses indicated that thinking about and reflecting on research involved individuals having specific attitudes towards, and beliefs in, the value of research use. These included **being open-minded, inquisitive, questioning and critical**. Educators used descriptions such as "being open to new strategies", "taking risks", "challenging mental models", "keeping an open-mind and not being bias[ed]", and "researching with critical eyes – not trust[ing] everything you read, but question[ing] and analys[ing] it" as illustrations of thoughtfulness.

> *I would like to see teachers more curious. I would like to see more hunger when it comes to research… I would like teachers to see that using evidence-based practice will not add to their caseload, but will make it easier*.
>
> Interview response, Middle Leader, Government Primary School, Queensland

Educators also connected having a sense of humility with using research well. Many acknowledged that quality research use could be complex, and that time taken and development of new skills in order to properly make sense of research were both understandable and reasonable. Awareness of educators' own skills, confidence levels and use were therefore important, with recognition of personal limitations and knowledge of when to seek help associated with thoughtfulness. For example, one leader stated:

> *Coming back to [the research] is important. Often I will go back and read certain [research], making sure our interpretations of [it] are right, because that's the difficulty... you read different [research] and because it's not going to be the exact replica [when implemented], you have to keep coming back and asking, 'If this is what we're coming up with, is that still honouring [the original intent]?'*
>
> Interview response, Senior Leader, Government Secondary School, Victoria

A WAY OF WORKING WITH RESEARCH: Educators spoke about ways of working with research from two main perspectives:
  (i) the **considered ways in which research was found, understood and used in practice by educators** (referenced in 93% of interviews and 76% of surveys); and
  (ii) **thoughtful approaches to implementation** (96% of interviews; 84% of surveys), including **collective engagement of all staff** (81% of interviews; 26% of surveys).

To many educators, thoughtful engagement meant having **"deep understandings"** of the research. While having research-related dispositions and attitudes were important, educators' responses indicated that depth of understanding came equally from the **ways in which educators found, understood and used research in practice**. Overwhelmingly, educators indicated that "looking widely and thinking widely" and "seeking out research from multiple sources" were critical ways in which to develop knowledge. These approaches allowed for educators to make connections between different research and their contexts, often leading to comprehensive and tailored research-based approaches to specific problems or change initiatives. These approaches in turn, facilitated more effective implementation and integration of research into practice.

> *[Research use] – that isn't extra work. It's actually asking [teachers] to think more deeply about the work that they do*.
>
> Interview response, Senior Leader, Government Secondary School, South Australia

Dedicated time and effort were again seen as critical investments in "deep understandings", as was consideration of current and best practice. Yet, frustration in many educators' responses revealed a tension between their positive and open dispositions towards using research, and not being able to find tangible or 'linear' time to find, read and interpret research, let alone 'quality' time to "follow up the research in a meaningful way". Quality time appeared key to educators being able to discern "proper" meaning from the research and therefore, being thoughtful. Hence, quality time was associated with "tak[ing] it very slowly", "delving into the research", reviewing research "in-depth", and "trying to get deeply into the theory behind what we do". Some responses, particularly from senior leaders, indicated that thoughtful engagement with research needed to transcend tangible concepts of time and effort though, suggesting that the key to using research better in practice was thinking of it as an inherent part of personal professional conduct.

In contrast, lack of thought was often associated with "using a single source" of research or "not comparing with multiple sources", as well as thinking narrowly about a problem or topic, or settling on "the first research found" and "not pushing ourselves". Exercising any form of 'bias' when selecting and interpreting research for use was also viewed as lacking thought and integrity. As such, bias was often associated with research being selected to "back up what was already being done" or "support a pre-existing view". It was also associated with behaviours such as "picking and choosing research bits", "taking the little snippets of bits you like from here and there", "cherry-picking", and selecting research that "fits a particular trend or fad".

Educators' responses indicated that thoughtfulness and **collaborative approaches to research engagement and implementation were strongly connected**, with many implicating leaders as accountable for enabling collaboration. Educators emphasised the importance of collective involvement in research decision-making and implementation, including listening to and respecting divergent opinions, providing opportunities to ask questions, facilitating group discussions for sense-making and gaining collective staff buy-in. Gaining an understanding of collective confidence levels and skills to implement, as well as building a common language around and understanding of the research were equally important. Educators' responses suggested that collective engagement was associated with a school's capacity to create a "learning community" and have "higher-level discussions" about practice. With collective engagement came a "swell of support" for greater and better research use, ultimately leading to ongoing improvements in educators' knowledge, teaching practice and student outcomes.

> *Using research well results in " a growth mindset from leaders, teachers, students and parents, which creates a community which is curious and engaged, where deep learning [by all] is occurring "*.
> Survey response, Senior Leader, Independent P-12 School, Victoria

Fostering collective engagement was viewed though as only one aspect of a suite of approaches to thoughtful implementation of research. Educators' responses indicated that thoughtful implementation was not only relational and inclusive, it was also:
  (i) **well planned, clear and transparent**;
  (ii) **consistent** in both intent and integration across all staff and student cohorts;
  (iii) supported by **investments of time and resources**;
  (iv) **scaffolded for staff**;
  (v) **evaluated**; and
  (vi) **formalised through links with key school processes**, such as performance management and goal setting.

It also involved being **"mindful" about the current context** or the **school's "collective mindset",** with leaders in particular needing to be cognisant of the staff's workload or number of school priorities being implemented at the time, as well as "change fatigue" and the staff's motivation and openness to change. Educators used language such as "thorough", "comprehensive", "purposeful", "considered", "consistency and with fidelity", "slow" and "focused on only one thing" to describe effective change management techniques and styles expected of thoughtful implementation. In contrast, over and above language that described a lack of invested time or the expectation of "quick" outcomes, characterisations such as "random", "disjointed approaches", "piecemeal and fragmented" and "change for change sake" were used to describe thoughtless implementation.

> *" [Using research well] becomes a process: research of the research; reading and discussion of the research; looking at its applicability to our context; then trying to distil it into something that is meaningful to us and to our teachers; and then basically sharing that practice "*.
> Interview response, Senior Leader, Independent P-12 School, New South Wales

Thoughtful implementation was also inferred when educators described the importance of **connecting research use tasks in an 'end-to-end' process**; one that started with understanding and agreeing the problem or improvement initiative and ended with implementation of a research-informed solution, collective debrief and review. Educators' responses indicated that while each task itself needed to be thoughtfully enacted, if these tasks were also connected and communicated to school communities as 'whole processes', then a greater perception of consideration, as well as thoughtful engagement with research amongst all staff was possible.

For example, one senior leader (Interview response, Senior Leader, Government Secondary School, South Australia) described how thinking about research use like a "deliberate and focused approach" that "in some ways, mirrors an improvement process" allowed for greater questioning, critiquing and investigation into the issue at hand than otherwise might have occurred. Further, another senior leader (Interview response, Senior Leader, Government Primary School, Queensland) described how positioning research use as a process of many connected tasks, as well as inter-connected with other school processes, allowed her to bring colleagues and staff in at different points in time on certain research-related tasks, yet allowed them to feel involved and a part of an overall process of research decision-making and implementation.

A WAY OF BENEFITTING FROM RESEARCH AND ITS USE: In many instances, educators' responses made connections between their interpretations of thoughtful engagement and implementation and **improvements in student learning, teaching practice, and educators' professional conduct** (referenced in 81% of interviews and 76% of surveys).

Not only did educators' responses suggest that it was incumbent on them, as professionals, to use research well, but they suggested also that there were positive benefits to be gained. These benefits were often articulated as **"higher order" perceptions of themselves as professionals** or their professionalism. Descriptions included "increas[ing] the purpose of your work", being "more empowered" and able to "discuss the 'why' of doing something".

Benefits were also connected with the absence of doubt about the efficacy of the research used. Educators' responses overwhelmingly referenced having "proof of what works" as evidence of research being used well in practice. Asking questions such as "How do we know that's working?" and "What is the research saying?" often anchored practice discussions between educators to ensure thoughtful engagement with the research, as well as thorough implementation, evaluation and reflection.

> ❝ *Hope is not a strategy. When you're actually asking people to collect evidence of what progress you're making, then you [can] have a conversation about 'Why do you think it's not working?' And that's [what] we need to keep doing as a profession, because that's actually what is required* ❞.
>
> Interview response, Senior Leader, Government Secondary School, Queensland

3.4 INDIVIDUAL ENABLING COMPONENTS

The QURE Framework highlights the importance of individual-level enabling components for quality research use and conceptualised these as:

- **Skillsets** – the knowledge and capabilities;

- **Mindsets** – the dispositions, attitudes and values; as well as

- **Relationships** – the interpersonal processes and connections that are required to thoughtfully engage with and implement appropriate research (Rickinson et al., 2020b, p. 10).

Educators emphasised the connection of skillsets, mindsets and relationships to quality research use, with all three individual enabling components featuring in responses. Educators' insights provided deeper and more nuanced understandings of these components than originally conceptualised, with the importance of several key requirements in each component highlighted.

SKILLSETS: Educators identified several key skillsets that appeared necessary for quality research use, including:

(i) '**research skills**', involving capabilities to find, read, interpret and critique research (referenced in 81% of interviews and 85% of surveys);

(ii) '**relational skills**', involving capabilities to mentor others and network for improved research identification and use (52% of interviews; 21% of surveys);

(iii) '**thinking skills**', involving 'forward-thinking',

problem-solving and reflective capabilities (44% of interviews; 56% of surveys); and

(iv) '**data literacy skills**', involving capabilities to collect and analyse data (22% of interviews; 11% of surveys).

Poor research use was sometimes associated with:

(i) a lack of research skills (56% of interviews; 6% of surveys); along with a

(ii) a lack of data literacy skills (11% of interviews; 4% of surveys); and

(iii) superficial or narrow considerations of research (7% of interviews; 18% of surveys).

Overwhelmingly, **research skills were viewed as most important to using research well**. However, even with the best of intentions to use research, responses suggested that developing and maintaining comprehensive skills and knowledge to find relevant research and incorporate it into practice were challenges for many educators. Further, a lack of confidence in finding and using research was, at times, associated with skill and knowledge deficiencies. For example, one senior leader (Interview response, Catholic Secondary School, Victoria) described how research would not be used at all in certain circumstances, despite its relevance, if teachers lacked confidence in their research skills. While educators strongly associated research-related confidence levels with 'having the right mindset', senior and middle leaders did describe connections, particularly during interviews, between educators' confidence levels and appropriate skills (see *Box 6* for examples).

"Not knowing where to go, not knowing what the research is, or the best research [is a challenge]. If people aren't sure, [they] tend to just go and look on Google and go, 'Oh, well. That's what's out there'. [That's] not [what] 'knowing where to go to' [looks like]".

Interview response, Teacher, Government P-12 School, Queensland

"I can get overwhelmed with where to go to source research. I ask myself 'Am I missing something?' There is so much research out there, being able to discern between what is really good and what's not, well, that can be overwhelming too".

Interview response, Senior leader, Government Secondary School, Victoria

"I don't think [we have] enough data literacy [skills], [and] I don't think [we do] enough up-skilling of staff in actually reading and analysing. Most of us aren't looking at [data and research] deep enough to actually gain [sufficient] insights".

Interview response, Senior leader, Senior Leader, Government Secondary School, Queensland

MINDSETS: Similar to our quantitative survey findings, qualitative survey and interview findings suggested that the majority of teachers and school leaders alike had **"positive intentions" to use research** and **"believed" in the value and benefits** associated with research use. Hence, educators' responses suggested strong support for the importance of research-related mindsets, and linked them as a key enabler or aspect of thoughtful engagement with and implementation of research.

Educators identified several key attitudes, dispositions and beliefs underpinning quality research use, including:

(i) having a **'growth mindset'**, involving being open-minded, motivated and enthusiastic about research use, as well as being prepared to critique, challenge and reflect on the research (referenced in 81% of interviews and 62% of surveys);

(ii) **believing in the value of research and its use** in practice (37% of interviews; 3% of surveys);

(iii) **being curious and inquisitive** (30% of interviews; 11% of surveys); and

(iv) being **'risk-oriented'** or having an **aptitude for experimentation** (30% of interviews; 8% of surveys).

Having a 'poor research mindset' was sometimes associated with:

(i) lacking motivation or suffering 'change fatigue' (33% of interviews; 5% of surveys);

(ii) being resistant to change or not being open-minded (30% of interviews; 17% of surveys);

(iii) feeling challenged by research and its use, including being cynical about or threatened by its use (26% of interviews);

(iv) lacking confidence (26% of interviews); and

(v) not valuing research use (26% of interviews).

A key issue described in both survey and interview responses was a tension in the **collective mindset between openness and resistance**, and how resolving this seemed critical for increased and improved research use across a school community. The tension was manifest in the different mindsets of more experienced older teachers versus those of younger newly qualified teachers, school leaders versus teachers, and those who had experimented with research use in the past with little success versus those who had experienced successful change and were open to trying or learning about new practices. Several stories recounted during interviews illustrated this tension. For example, one teacher described:

[At our school], we have lots of older staff who've been teaching for 20 plus years. And then, lots of graduate teachers early in their careers. At one end, you have a number of staff who are perhaps resistant to change, or who have been doing things for a very long time and have habits and ways that they believe are effective, and so they will do what they believe is right, regardless of new evidence, or new information that might've come to light to the contrary. And then there's a lot of new people who have obviously been through quite rigorous university courses, where up-to-date information is available, and so their experience is solely what's new, and what's currently backed by evidence as educational theory. It's not a problem as such, just an interesting observation…[but something that will need to be addressed together] if we are to improve practice.

Interview response, Teacher, Government Secondary School, Victoria

RELATIONSHIPS: Relational and social processes of using research featured in educators' survey and interview responses, with quality research use enabled by relationships and collaborations that were both **'within'** (referenced in 74% of interviews and 26% of surveys) and **'beyond'** (78% of interviews; 2% of surveys) the school.

Within the school, educators described research being used in collaborative ways while:

(i) **participating in discussions** (52% of interviews; 20% of surveys);

(ii) **sharing ideas with others** (41% of interviews; 12% of surveys);

(iii) **in staff or team meetings** (41% of interviews; 11% of surveys); and

(iv) **seeking out opinions from others** (26% of interviews; 7% of surveys). These 'internal' relationships and collaborations could be either formal or informal, and involve many, like the whole school community, or a few.

Beyond the school, educators described research being used:

(i) **between two or more schools** (44% of interviews; 2% of surveys);

(ii) **in partnership with universities** (44% of interviews); and

(iii) **in consultation with experts** (41% of interviews).

Educators' responses indicated that collaboration was important for each research use task (see *Box 7* for examples).

Analysis of educators' descriptions of collaborative research use indicated **the nature of the desired collaboration differed according to the task**. For example, 'finding' research seemed to involve more light-touch, informal, networking-type relational processes, with descriptors used such as "seeking advice from others", "sharing views and information with others" and "word-of-mouth recommendations from colleagues". 'Implementing' research, however, seemed to require more involved and structured co-operating and collaborating-type relational processes. Phrases such as "collective reflection", "group debate", "all involved", "going on one improvement journey together", "constant group improvement and refinement" and "wanting collaboration and time to discuss together how things are going" were used to describe effective integration of research into practice.

Responses also seemed to suggest **differences in the nature of the relationship between involved parties**. The research task may be enacted collaboratively, but if there were misgivings about the integrity of such collaboration, a perceived lack of trust, or feelings of inequality, for example, then the collaborative research use may be less effective. For example, one leader described poor research use as:

The research is implemented ... **"***in a top down approach without consultation. It is used to direct, intimidate or bully staff without [gaining a] shared understanding and commitment. There is no shared learning* **"***.*

Survey response, Senior Leader, Government Primary School, New South Wales

3.5 ORGANISATIONAL ENABLING COMPONENTS

The QURE Framework highlights the importance of organisation-level enabling components for quality research use and conceptualised these as:

- **Leadership** – the organisational vision, commitments and role models;
- **Culture** – the organisational ethos, values and norms; as well as
- **Infrastructure** – the organisational structures, resources and processes that support thoughtful engagement with and implementation of appropriate research (Rickinson et al., 2020b, p. 11).

Educators emphasised the connection of leadership, culture and infrastructure to quality research use, with all three organisational enabling components featuring in responses. Educators' insights provided deeper understandings of these components than originally conceptualised, highlighting the **importance of leadership** in particular.

LEADERSHIP: Educators identified several key aspects of leadership that appeared necessary for quality research use. These included expectations of leaders to:

(i) **'facilitate understandings'** about research, involving encouraging others and role-modelling their own beliefs in and use of research (referenced in 67% of interviews and 57% of surveys);

(ii) **'provide infrastructure and appropriate resourcing'** to support research use (67% of interviews; 30% of surveys);

(iii) **'build a research-engaged school culture'** (44% of interviews; 19% of surveys);

(iv) **'promote a vision'** for research use (41% of interviews; 71% of surveys); and

(v) **'oversee engagement with and implementation'** of research (41% of interviews; 36% of surveys).

Poor research use was at times associated with 'poor leadership' including:

(i) mandating research use or issuing top-down directives (22% of interviews; 7% of surveys);

(ii) not providing sufficient clarity or purpose about research decisions and use (19% of interviews; 12% of surveys);

(iii) a perceived absence of leadership or not managing research use appropriately (11% of interviews; 52% of surveys); and

(iv) implementing research at inappropriate times, such as having perceived "competing agendas" or staff not being or feeling ready to take on new research-informed practice (11% of interviews; 4% of surveys).

Overwhelmingly, educators emphasised the importance of leaders **'walking the talk'** themselves. Responses suggested that educators strongly valued school leaders who were unequivocal in their beliefs about the value of research and who role-modelled appropriate research-engaged behaviours. Teachers, in particular, looked to school leaders to "model a culture of using research for enhancing professional growth" and to "provide opportunities for staff to investigate and share research in the context of their teaching". Responses indicated a strong need for leaders to "explain the why" behind research priorities and decisions, and to "unpack why it works and how it will work in our school context". The following two examples, one describing using research well and the other one poorly, illustrate the importance of leaders needing to "know the research themselves":

> " *I recruit people in the leadership team and in the teaching team that fit our philosophy around [research]. And I'm very upfront with [that] when they come in here…'This is what I expect and if that's not for you, then this is not the school for you'. I cannot have a leader come in here who doesn't value [using research], because it won't work and actually just breaks [the culture down]* ".
>
> Interview response, Senior Leader, Government Secondary School, Queensland

> " *Leaders are able to not only 'quote' the relevant research but are able to match it with what is happening in the school and then model the application of that research to all teachers, staff and students* ".
>
> Using research well, Survey response, Teacher, Catholic Primary School, Victoria

> " *Leaders make loose claims such as 'research says' but are not able to articulate specifics nor apply recommendations or gather and analyse data from replicated studies or use research in their [own] work* ".
>
> Using research poorly, Survey response, Senior Leader, Government P—12 School, Queensland

In contrast, responses suggested concern about leaders who "closed doors" to research use, were not prepared to "explain their use of particular research", "shut down questions", did not "encourage risk-taking" or "expect[ed] [teachers] to just agree with whatever direction was set".

CULTURE: Educators described several key aspects of a research-engaged school culture, including:

(i) the **'embedded nature of research use'**, involving collective research-engaged language and research being an "intrinsic" part of every-day practice, processes and decision-making (referenced in 85% of interviews and 15% of surveys);

(ii) **'discussion and debate'** about research and its use, including challenging and questioning others (63% of interviews; 21% of surveys);

(iii) **'collaboration'**, involving different consultative forums for research use, such as team meetings, as well as opportunities to work together in groups (59% of interviews; 11% of surveys);

(iv) a **'supportive research use environment'** (56% of interviews; 14% of surveys); and

(v) perceived **'trust and value'** (33% of interviews; 3% of surveys).

In contrast, culture was sometimes viewed as a barrier to research use when staff had a perception that:

(i) there were 'competing agendas' or 'change fatigue' (44% of interviews); and

(ii) there was 'no research-engaged culture' (19% of interviews; 21% of surveys).

Educators characterised culture in different ways. It was described, at times, as "the vision and values of the school" and therefore a criterion to assess the contextual relevance of research for specific change initiatives. At other times, culture was used as a proxy to describe the processes or ways in which research was used to inform decisions and practice, which included collaborative and relational processes. Overwhelmingly though, it was described as something intangible or an **ethos**. In the same way that educators highlighted the importance of research-related mindsets, **culture was also viewed as a "collective mindset"** that enabled thoughtful engagement with and implementation of research. It was described in terms of "collective understanding", "common language", "collective empowerment", "collective learning" and "collective teacher efficacy". "Embedding" research in the school culture appeared to be about fostering a collective way of 'being' such that research use became an "every-day way of doing things".

> **"** *Everybody was talking the same language, moving in the same way, and there feels this incredible momentum. And people are invested, because they [have] put in an incredible amount of work…we're really starting to get this whole-of-team approach to [research and] what we're doing with it* **"**.
>
> Interview response, Senior Leader, Government Secondary School, Victoria

INFRASTRUCTURE: When educators spoke about infrastructure, they did so in two main ways:

(i) **research use needing to be 'embedded in school infrastructure'**, such as in regular meetings, linked to improvement cycles, having dedicated research 'champion' roles and having a research-engaged leadership team (referenced in 81% of interviews and 24% of surveys); and

(ii) **'providing resources and support'**, such as access to research, the provision of time to find and read research, having professional learning opportunities, as well as having a learning resource centre (81% of interviews; 18% of surveys).

In contrast, infrastructure was viewed as a barrier to research use when staff perceived that:

(i) there were 'busy or conflicting agendas' constraining effective use of research (74% of interviews; 8% of surveys);

(ii) research use was 'not embedded in infrastructure or improvement cycles' (41% of interviews; 7% of surveys); and

(iii) 'support systems were lacking', including unsuitable or insufficient professional learning and a lack of resourcing (33% of interviews; 4% of surveys).

Similar to our quantitative survey findings, qualitative findings indicated that both access to research, as well as time to find and review research were viewed by educators as critical enablers of improved use. Without time in particular, educators' responses suggested that research use may not happen at all. For example, one leader stated:

> **"** *I work on average 70 – 75 hours a week. I just don't actually know where I would fit in any more academic reading. Maybe I could…but it's not academic reading, I could be listening to podcasts or something else as I drive. Literally, my driving time is about the only time where I could fit in more work. So, I think time is probably the biggest barrier* **"**.
>
> Interview response, Middle Leader, Government Secondary School, Victoria

Both the amount and quality of time allocated to research use was associated with gaining "deep understandings" of the research. As with the concept of thoughtful engagement, without dedicated 'quality time' to gain such in-depth understandings of research, quality use of research seemed at risk. "Taking things slowly" to "do things properly" was a common expression connected with quality research use (see *Box 8* for examples).

"I think all teachers should be given time to research and to learn and reflect. No-one has time to reflect on what they do. Our school is very mindful of the fact that you can't introduce too much research to teachers because they've got so much as it is, and you have to take it very slowly [to do it properly]".

Interview response, Senior Leader, Government Secondary School, Queensland

"Not all teachers have the ability to commit time to delving into the research, like others can. For example, [many] are time poor outside school hours, and a lot of this is done outside [of] school hours. You can't conduct the real, in-depth research without committing extra time".

Interview response, Senior Leader, Independent Secondary School, Queensland

"Time is a big barrier. If I have the resources, and if I have the time allocated outside of my day-to-day duties to actually put the time in to do it properly – actually gather the research and [review it] – that's probably going to be a big factor".

Interview response, Teacher, Government Secondary School, Victoria

"In a school looking at, investigating and using research and trying to get deeply into the theory behind what we do at school is a total luxury. There are not many people that have the time to do that".

Interview response, Senior Leader, Government Secondary School, Queensland

From an infrastructure perspective, educators' responses indicated that the **provision of dedicated time away from classroom teaching was an important support** for increased and improved research use. Such time may take the forms of professional learning opportunities within and beyond the school, such as: professional learning team meetings; professional development forums outside of the school; dedicated staff meetings or workshops; in-school mentoring or coaching sessions; external conferences; and professional learning network discussions focused on reading or understanding certain research. Responses suggested that supportive and proactive leadership for the provision of such 'time' was also viewed as an important aspect of infrastructure.

> " *We're going to start having sessions once a week for teachers…we're going to dedicate an hour solely for that purpose…actually having the time to sit down as a group to be able to talk about things, to explain things, and to go through the bits of research slowly* ".
>
> Interview response, Teacher, Government P-12 School, Queensland

3.6 SYSTEM-LEVEL INFLUENCES

System-level influences are conceptualised within the QURE Framework as: "the complex interactions and inter-dependencies across the education sector to support thoughtful engagement with and implementation of appropriate research" (Rickinson et al., 2020b, p. 12). This conceptualisation seeks to acknowledge two key ideas:

- That teachers, schools, evidence and its generation do not exist in isolation. They are part of a broader education system that has diverse purposes and processes that impact research use in different ways; and

- By understanding the connections and interactions among the components across the system, then chances of bringing about effective and sustained change in educational practice are improved.

The concept of system-level influences is complex and may account, in part, for why educators' responses did not reference this component of the QURE Framework as often (see *Table 2*). It may also account for the different ways about which such influences were spoken. These included: as the influences and/or actions of a federal or state-level government Department of Education or governing **jurisdiction body** (e.g., Melbourne Archdiocese Catholic Schools); as the expectations or standards of **official education bodies** (e.g., Australian Institute for Teaching and School Leadership [AITSL]); as **wider education system changes or initiatives**, such as national changes in curriculum; and as the roles of **universities and research organisations** in producing and disseminating research.

The ways in which educators' spoke about their school environments inferred at times that **'schools' were also seen as 'systems'** themselves. Leaders were seen to be accountable for addressing and resolving issues pertaining to research use within the school system, as well as managing relationships with or acting as a 'broker' or 'buffer' between wider education system stakeholders, such as jurisdictions, and the school itself. A good illustration is the concept of time. Having dedicated time to properly find and read research was referenced by educators as a key aspect of infrastructure. Yet, educators also spoke about the 'nature of teaching' and workload pressures and how time was rarely available for a range of improvement initiatives, of which reading research more or engaging with it more meaningfully was one. The language used by educators in these cases suggested that time and its relationship to the nature of teaching itself was a 'system-type' influence.

When system influences were spoken about, particularly during interviews, they were described as barriers to quality research use (referenced in 70% of interviews and 4% of surveys) more often than as enablers (33% of interviews; 3% of surveys). Educators sometimes phrased their responses as **expectations of various education system stakeholders**, while at others, phrased them as **impacts to their abilities to engage with research** in meaningful ways or their teaching practices more broadly. For example, barriers included:

- At a jurisdiction level – a lack of access to research (44% of interviews; 2% of surveys); or government body directives or expectations of delivery that impact quality use of research in a school (30% of interviews); and

- At a wider system level – the need for universities and other research organisations to provide appropriate and usable research (56% of interviews; <1%% of surveys); or a range of different reporting requirements (11% of interviews

System-type enablers included:

- At a jurisdiction level – having positive relationships with jurisdiction stakeholders and being the beneficiaries of jurisdiction-provided resources and supports (22% of interviews; 3% of surveys); and

- At a wider system level – having research use linked to AITSL teaching and leadership standards (7% of interviews; 1% of surveys).

> " *[Getting access to the best research] is a big challenge for schools and there [are] things that departments and systems could do, just like there [are] things that senior leaders in schools need to do to help* "*.*
>
> Interview response, Senior Leader, Government Secondary School, Queensland

3.7 SUMMARY

Overall, **there were strong connections between the ways in which educators talked about using research well and the contents of the QURE Framework, with all framework components featuring in educators' descriptions.** There seemed little to no divergence from original conceptions of framework components, with responses providing greater understandings of quality research use. In summary, the findings suggest that:

- **Appropriate research is a more nuanced concept than first imagined,** encompassing: traditional methodological rigor; educators' perceptions or assessments of 'expert' content, reputability, trustworthiness and credibility; evidence of impact; contextual relevance; 'teacher voice'; and practical usability.

- **Thoughtful engagement and implementation are more complex and involved concepts than first imagined**. Educators' perspectives on using research well or poorly suggest that thoughtful engagement and implementation are about:
  - (i) a way of approaching research and its use, incorporating open-minded and curious attitudes and dispositions, as well as research-related reflective capabilities;
  - (ii) a way of working with research, specifically the considered ways in which research is found, interpreted and used to gain deep understandings of a topic, as well as thoughtful approaches to implementation that are collaborative, purposeful, scaffolded and formalised through links with key school processes; and
  - (iii) a way of benefitting from research and its use, including positive impacts to their professional identities as educators. These perspectives of thoughtful engagement and implementation **reflect all six of the key characteristics of quality research use** that emerged from educators' responses overall.

- Educators **emphasised the connection of skillsets, mindsets and relationships to quality research use**, with all three individual enabling components featuring in responses. Educators' insights provided deeper understandings of these components, highlighting the importance of several key requirements. These included the needs for educators to:
  - (i) possess research skills and for them to be aware of and have confidence in these skills;
  - (ii) have a 'research mindset', involving being open-minded, curious, inquisitive and risk-oriented;
  - (iii) be prepared to critique, challenge and reflect on research;
  - (iv) leverage different relationships, both within and external to the school, to enact different research use tasks; and
  - (v) build and maintain trust, openness and respect within relationships to improve research use.

- Educators emphasised the **connection of leadership, culture and infrastructure to quality research use**, with all three organisational enabling components featuring in responses. Educators' insights provided deeper understandings of these components, highlighting the **importance of leadership** in particular. Leaders appeared central to the organisational enablement of quality research use through:
  - (i) their own individual research-engaged values and behaviours;
  - (ii) the thoughtful, purposeful and considered ways in which they lead implementation of research in practice;
  - (iii) their fostering of research use such that it becomes an intrinsic part of the school culture; and
  - (iv) their support of research use through ensuring sufficient time, access, resources and professional learning opportunities are available and considered a 'normal' and sustainable part of the school's infrastructure.

- **The concept of system-level influences is complex**. Educators did not reference systems explicitly very often. When they did so, their responses indicated that 'system' was most frequently thought of as the school itself, or governing jurisdiction bodies and the ways in which their actions or decisions influenced educators' abilities and mindsets to engage with research in practice. **More often than not, system influences were viewed as barriers to quality research use**.

4 CONSIDERATIONS AND CONCLUSIONS

As said at the outset, this paper represents Q Project's first steps in moving our understandings of quality research use from the conceptual (i.e., What does quality use mean?) to the practical (i.e., What does quality use look like in practice?). It does so by sharing the insights from nearly 500 Australian educators into their beliefs about what is involved in using research *well*.

KEY FINDINGS

Educators' views were presented in this paper in two different ways. First, through broad and inductive analysis of educators' responses, it was revealed that **using research well matters to educators**. This importance was reflected in: the language and expressions that they used when describing research use and what constituted using research well and poorly; the consideration that they gave to describing the multiple dimensions of research use; and the differences in their responses, particularly those of teachers when compared with school leaders.

Six key characteristics of using research well emerged from educators' responses. For educators, quality research use is:

- **Embedded** – when research use is an intrinsic part of the school's processes, practices, language and culture;

- **Collective** – when all staff are consulted and engaged in research-related decisions, implementation, and reflection;

- **Purposeful** – when there are clear intentions for using research connected to effecting positive change;

- **Time and effort-dependent** – when time is taken to engage deeply with the research and implement it carefully;

- **Curiosity-driven** – when research use draws and builds on staff curiosity, inquisition, and questioning; and

- **Connected to teacher professionalism** – when research use is fulfilling an expectation of ourselves as professionals.

Secondly, by comparing educators' views to the QURE Framework, **it was clear that there were strong connections between the ways in which educators talked about using research well and the components of the QURE Framework**. Key insights included:

- **Appropriate research** encompasses: traditional methodological rigor; educators' perceptions or assessments of 'expert' content, reputability, and credibility; evidence of impact; contextual relevance; 'teacher voice'; and practical usability.

- **Thoughtful engagement and implementation** are about: a way of approaching research and its use, incorporating specific research-related attitudes, dispositions and capabilities; a way of working with research, including how research is found, understood and implemented; and a way of benefitting from research and its use.

- Educators emphasised the **connection of skillsets, mindsets and relationships to quality research use**, including the needs for educators to: possess research skills; have a research-related mindset; be prepared to question and reflect on research; leverage different relationships; and build and maintain trust within relationships to improve research use.

- Educators emphasised the **connection of leadership, culture and infrastructure to quality research use**. Leaders were central to the organisational enablement of quality research use through: their own values and behaviours; the ways in which they lead implementation of research in practice; their fostering of research-supportive cultures; and their support of research use through the school's infrastructure.

- The concept of **system-level influences** is complex. 'System' was most frequently thought of as the school itself, or governing jurisdiction bodies. More often than not, system influences were viewed as barriers to quality research use.

CONSIDERATIONS AND CONCLUSIONS

Drawing on these findings, it can be concluded, at this stage, that **the QURE Framework is an appropriate and relevant way to conceive quality research use**. Educators' views also provide important cues for teachers, school and system leaders as to how research use can be increased and improved in schools. Educators described in detail what using research well and poorly meant to them. As a result, educators shared with us their expectations of and needs from different leaders and stakeholders regarding research and its use, and what currently 'works', as well as what doesn't, for them in terms of research use-related support and resources. From these insights, it can be seen that there is a role for each teacher, school and system leader, teacher educator, policy-maker, researcher and research broker or organisation in helping to increase and improve research use in educational practice.

Key considerations include:

- **Educators themselves need to be supported as critical consumers of research and information**. Having the right skills to find, understand and use research, as well as the confidence in these skills, are necessary requirements for educators' increased and improved use in practice. Important also are the needs for educators to have open and questioning mindsets, and beliefs in the value of connecting research use with improvements in teaching approaches and student outcomes. Standards, interventions and resources are critical at all levels of the education system to support and scaffold educators' skill, confidence and knowledge development. School planning and reporting requirements should reflect the importance of these for improvement over time.

- **Research itself needs to be contextually relevant, credible and practical** for educators to want and be able to use it in practice. Researchers, policy-makers and research organisations need to be cognisant of educators' needs in this regard. Simply disseminating research or evidence that is assumed to be contextually relevant may not be sufficient. Research availability, accessibility and usability must also go hand-in-hand with increasing educators' awareness of credible and trustworthy research sources, as well as their research-related skills and confidence.

- **The challenge of available time needs to be addressed**. Helping educators to find the time to engage with research well is an issue for all education sector stakeholders to understand and resolve – it is not up to teachers alone to solve this. Those schools where staff indicated that they were using research well, had different ways of making dedicated time available to find and interpret research collectively, that were then linked to school performance planning and reporting processes. These types of case studies need to be shared and leveraged across the education system.

- **Collaborations, both within and beyond schools, need to be fostered** in order to help teachers to find, make sense of, and engage more deeply with research. Educators find value in connecting with others about why and how to use research well, and need to be both encouraged and supported by colleagues, school and system leaders to leverage and/or expand their networks to improve their research use. As a key message for school leaders, educators are also clear in their desires and expectations to be included in research-related decisions, discussions and implementation within schools. System stakeholders such as teacher educators, research organisations, jurisdictions and governing bodies have roles to play in ensuring that school leaders have the skills and networks themselves to promote and embed trusting, experimental and collaborative school research cultures.

- **School leaders have other key roles to play in encouraging and supporting research use** in their schools. These include role-modelling positive research-related attitudes and behaviours themselves; embedding research use in school infrastructure such as in regular meetings, linked to improvement cycles, having dedicated research-lead roles and ongoing professional learning opportunities; and providing clear and consistent direction regarding the use of research in the school, and then ensuring purposeful and effective implementation of research-informed school improvements.

- **Cross-system co-ordinated efforts are important** so that educators hear consistent messages about the criticality of quality research use, are clear about how their improved research use is valued by different education system stakeholders, and have knowledge about what supports and resources are available to them. Two-way connections of school and system leaders are critical to ensure that educators have current and relevant information about supports and resources, as well as ways in which schools can get more deeply involved in system activities such as university research projects, co-design of possible helpful interventions and broader discussions about the benefits of improved research use in practice.

The Q Project's findings continue to build and shape deeper understandings of what it means to use research well in educational practice. Our publications about educators' insights to date can be found here or via our website. With these previous insights in mind, along with those shared within this paper, we encourage different educators and system stakeholders to join us in discussions about quality research use and connect with the project to contribute to improving the use of research in Australian educational practice.

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APPENDIX: METHODOLOGY

The key questions for the school-based research phase of the Q Project are:

1. How are schools using research?
2. What is involved in using research well?
3. How can quality use of research be developed?

The research aims in 2020, being the first year of the project's empirical phase, centred around **'listening' to educators**. The research activities – both survey and interviews - focused on understanding how Australian educators find and use research and evidence, including:

(i) the types of research and evidence that they value;
(ii) how and why they source different kinds of evidence;
(iii) whether and how they use research within their practice; and
(iv) what they believe 'using research well' in practice means.

1. SAMPLES

Due to the impacts of COVID-19, several changes were made in 2020 to the intended participant recruitment and research activities, resulting in different samples participating in both the survey and interviews.

SAMPLE 1: It was determined that all schools who had volunteered and consented to participate in the Q Project before March 2020 would be invited to participate in research activities, with targeted valid survey respondent numbers uncapped and the survey administered on a rolling basis if any additional schools approached the Q Project and provided consent between March – August 2020. The first sample included nominated educators (leader/teacher/other staff) from each of the 78 volunteer Q partner schools. Of the 182 survey invitations sent, 125 surveys were completed (68.7% response rate).

All Q survey respondents (n=125) were sent an invitation to volunteer to participate in follow-up online semi-structured interviews. Between August – November 2020, 27 interviews were conducted with 29 participants (23.2% participation rate).

SAMPLE 2: An external data collection agency was engaged to recruit additional research participants through their panels to both increase and diversify the overall survey respondent sample. The same online survey was administered and completed by 367 educators from the four participating Australian states.

Tables 3 and *4* provide the overall demographics for the combined survey sample of 492 respondents from 414 schools. *Table 5* provides the details of the 29 interview participants.

TABLE 3: Survey Sample - Respondent details (n=492)				
Respondents' State	**New South Wales** 149 respondents, 30%	**Queensland** 116 respondents, 24%	**South Australia** 32 respondents, 6%	**Victoria** 195 respondents, 40%
Respondents' Years of Experience	**0-5 years** 74 respondents, 15%	**5-10 years** 76 respondents, 15%	**10-15 years** 74 respondents, 15%	**15+ years** 267 respondents, 55%
Respondents' Role	**Senior Leader** 99 respondents, 20%	**Middle Leader** 60 respondents, 12%	**Teacher** 281 respondents, 57%	**Other Staff Role** 52 respondents, 11%
Respondents' Qualification Level	**Undergraduate** 273 respondents, 55%	**Non-research-based Post-graduate** 187 respondents, 38%	**Research-based Post-graduate** 32 respondents, 7%	

TABLE 4: Survey Sample - School details				
Type of School (n=414)	**Primary (Prep/ Kindergarten – Year 6)** 205 schools, 42%	**Combined(Prep/ Kindergarten – Year 12)** 117 schools, 24%	**Secondary (Year 7 – Year 12)** 156 schools, 32%	**Special** 14 schools, 3%
Respondents' School Features (n=492)	**Metropolitan Location[4]** 359 respondents, 73%	**Regional Location** 133 respondents, 27%	**Low ICSEA[5] Value** 179 respondents, 36%	**High ICSEA Value** 313 respondents, 64%

TABLE 5: Interview Sample				
Participants' State	**Victoria** 12 schools, 46%	**New South Wales** 4 schools, 15%	**Queensland** 8 schools, 37%	**South Australia** 2 schools, 8%
Participants' Roles (by state) (n=29)	7 Senior Leaders, 24% 5 Middle Leaders,17% 1 Teacher, 3%	5 Senior Leaders, 17%	6 Senior Leaders, 21% 2 Middle Leaders, 7% 1 Teacher, 3%	2 Senior Leaders, 7%
Schools Represented in Sample (n=26)	**7 Government, 27%** 5 Secondary, 19% 2 Primary, 8% **5 Catholic, 19%** 4 Secondary, 15% 1 Primary, 4%	**3 Government, 12%** 1 Secondary, 4% 2 Primary, 8% **1 Independent, 4%** 1 P–12	**7 Government, 27%** 3 Secondary, 12% 3 Primary, 12% 1 P-12, 4% **1 Independent, 4%** 1 Secondary	**2 Government, 8%** 1 Secondary, 4% 1 Primary, 4%

2. SURVEY DESIGN AND ADMINISTRATION

The initial survey design was informed by instruments designed and used in previous large-scale international studies of research and evidence use in education (e.g., Nelson et al., 2017; Penuel et al., 2016; Poet, Mehta, & Nelson, 2015). Led by an external research consultancy, a comprehensive four-wave survey piloting approach was then adopted to refine the survey design. The piloting approach included input from teachers, school leaders, state education department representatives, education system stakeholders, and key project advisors. The final survey comprised five parts:

1. Respondent details; 7 demographic questions;
2. Focus on decision-making about school initiatives; 1 open-text question with 4 parts; 3 quantitative questions;
3. Focus on school environments; 1 quantitative question;
4. Focus on the role of research in day-to-day practices; 4 quantitative questions; and
5. Focus on ideas about what it means to use research well or poorly; 3 open-text questions, 1 with 2 parts.

Between March – August 2020, each nominated educator from Q partner schools was emailed a personalised, identifiable link to a Monash-licensed Qualtrics online survey. Each survey was expected to take approximately 20 minutes to complete. Between August – September 2020, the external data collection agency administered the same survey, using their own software platform, to their recruited participants to protect anonymity, but included additional demographic questions (e.g., school name) to enable school profile data (e.g., ICSEA value, location, etc) to be sourced from the Australian Curriculum, Assessment and Reporting Authority (ACARA, 2019) for each respondent. The external agency then collated and coded qualitative responses from their recruited sample according to the project's coding frames, and provided both quantitative and qualitative data to the project team in MS Excel spreadsheets for analysis.

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[4] The geographical classification of the school location has been made according to the ABS Remoteness Area definitions, i.e. major cities = 'metropolitan'; and inner regional, outer regional, remote, and very remote = 'regional' (ACARA, 2019).

[5] Index for Community Socio-Economic Advantage [ICSEA] is a scale developed by ACARA that takes into consideration a school community's parental occupation & education qualification base, a school's geographical location, and the proportion of Indigenous students to determine the relative socio-economic and educational advantage of a school's student population. ICSEA is set at an average of 1000, and for our sample 'low' = less than or equal to 1000, and 'high' = greater than 1000.

3. SEMI-STRUCTURED INTERVIEW DESIGN AND CONDUCT

The aim of the follow-up interviews was to gain a deeper understanding of what educators believed was involved in using research well in practice, with a specific focus on: their understandings of what constitutes research; the situations in which they use research and why; their observations of 'quality use' practices and behaviours within their schools; and their views about enablers and barriers to using research well. The style adopted was exploratory interviewing, with a focus on open questioning, follow-up probing of responses and use of school-based examples and experiences within which to ground the discussion. The semi-structured interview guide was designed in conjunction with BehaviourWorks Australia (BWA) and reviewed for appropriateness by Q Project and BWA team members, as well as selected Q Project advisors.

Between August – October 2020, those participants from Q partner schools who had completed a survey (*n*=125) were emailed an invitation seeking their voluntary participation in a

45-minute follow-up online interview. Each personalised email included:
(i)   a brief outline of the aims of the interview with example questions;
(ii) instructions regarding how to book an interview time;
(iii) information about the interview (e.g., semi-structured, no preparation required, etc);
(iv) explanatory notes (e.g., the interviews would be audio-recorded, de-identified reporting of findings, etc); and
(v)   a link to an interview booking schedule. Consent to participate was implied if an educator booked themselves for an interview session.

BWA and Q Project team members, in pairs or individually, conducted the interviews online between August – November 2020. All interviews were audio recorded and transcribed in full, with transcriptions reviewed by the relevant interviewer(s) for comprehension.

4. QUALITATIVE CODING METHOD

Qualitative coding methods were based on Braun and Clarke's (2006) Codebook Thematic Analysis approach, and reflected elements of template thematic analysis (King & Brooks, 2017). This approach was selected as the most appropriate for capturing educators' understandings, experiences and behaviours in relation to research use and interpreting 'patterns' in the data. A key attraction was its flexibility, in terms of allowing for both pre-set or deductive coding, as well as inductive coding and the emergence of new themes (Braun & Clarke, 2020; Terry & Hayfield, 2020).

Both survey and interview coding approaches followed the six steps required for reflexive thematic analysis (Braun & Clarke, 2019) including:
(i)   familiarisation with the data;
(ii) generating preliminary or priori codes;
(iii) constructing initial themes;
(iv) modifying and developing the codebook;
(v)   reviewing the themes; and
(vi) writing up.

Given the two data collection processes, conducted and analysed at different times, the coding method was sequential and iterative:

• **An initial survey coding frame**, using priori themes, was informed by:
(i)   the QURE Framework components;
(ii) the key research questions for the project's school-based research phase; and
(iii) familiarisation with the survey data. Following inductive and deductive coding of surveys, using Monash-licensed NVivo (Version 12) software, a final survey codebook, comprising 18 macro or domain codes, resulted.

• **An initial interview coding frame**, using priori themes, was then informed by:
(i)   the QURE Framework components;
(ii) the key research questions;
(iii) the final survey codebook; and
(iv) familiarisation with the interview data. Following inductive and deductive coding of interviews, again using Monash-licensed NVivo (Version 12) software, the final interview codebook (see *Table 6*), was therefore more comprehensive than the survey codebook and allowed for a more detailed analysis of data gathered.

TABLE 6: *Summary of final interview codebook*

QURE FRAMEWORK COMPONENTS	INTERVIEW QUESTIONS
CORE: Appropriate evidence (Enablers & Barriers) Thoughtful Engagement & Implementation (Enablers & Barriers) **INDIVIDUAL LEVEL:** Mindset (Enablers & Barriers) Skillsets (Enablers & Barriers) Relationships (Enablers & Barriers) **ORGANISATIONAL LEVEL:** Culture (Enablers & Barriers) Infrastructure (Enablers & Barriers) Leadership (Enablers & Barriers) **SYSTEM LEVEL:** Jurisdiction (Enablers & Barriers) Wider System (Enablers & Barriers) **USING POORLY** Inadequate approaches Inadequate opportunities for sharing or collaborating Lack of clarity, focus or purpose Lack of consistency or top-down directives Lack of skills	What do practitioners understand the research to be? When are practitioners using research? Situations of using research Situations of not using Enablers of research use Barriers to using research Awareness - becoming aware of the research Deciding – what made you decide to use the research? Ways research used Benefits of using research Results of not using **PROFESSIONAL LEARNING** Collaboration Active learning & reflection Content & pedagogy Coaches, mentors & modelling Audience & alignment Workplace conditions How the professional learning is developed Barriers

Six researchers were involved in data collection and analytical processes. During the qualitative coding processes, four of these researchers took on different roles at different stages to test for accuracy, clarify definitions, and "stimulate fresh perspectives to support researcher reflexivity" (King & Brooks, 2017, p. 223). These roles included:

- **When coding the surveys:** Researcher 1 developed priori themes. Researcher 2 coded deductively and inductively to priori themes using fine-grained analysis (e.g., coding sections of data across several relevant codes). Researchers 1 and 2 collaborated regularly to reflect on and refine codes. Researcher 3 collaborated periodically to clarify meaning, terms and definitions.

- **When coding the interviews:** Researcher 1 developed priori themes. Researcher 2 and Researcher 4 coded to priori themes, again using fine-grained analysis. Researchers 2 and 4 met regularly to check for coding development, coding accuracy and definition meanings. All four researchers met regularly to review overall theme development.

- **Maintaining an audit trail:** Researcher 2 maintained a record of the successive codebook versions. Researcher 2 organised all researcher notes, including collating processes, thoughts, and code development.

NOTES

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