

A framework for understanding the quality of evidence use in education

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ABSTRACT

Background: There are growing expectations internationally that schools and systems will use research evidence to inform their improvement efforts. Such developments raise important questions about what it means to use research evidence *well* in education.

Purpose: To date, there has been wide-ranging debate about what counts as quality evidence, but very little dialogue about what counts as *quality use*. In response, this article presents a conceptual framework to define and elaborate what *quality use of research evidence* might mean in relation to education.

Method: The framework is informed by a cross-sector systematic review and narrative synthesis of 112 relevant publications from four sectors: health, social care, education and policy. The review explored if, and how, quality of evidence use had been defined and described within each of these sectors in order to inform a quality use framework for education.

Findings: Based on the cross-sector review, quality use of research evidence is framed in terms of two core components: (1) appropriate research evidence and (2) thoughtful engagement and implementation, supported by three individual enabling components (skillsets, mindsets and relationships) and three organisational enabling components (leadership, culture and infrastructure), as well as system-level influences.

Conclusions: There is potential for this framework to inform current approaches to the use of research in education. There is also an important need to test and refine its components through further empirical investigation, theoretical inquiry and intervention development.

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Evidence use; research use; evidence-informed practice; evidence-based practice; education; schools

Introduction

Internationally, there are widespread efforts to improve the use of research evidence across many sectors, including health, social care, international development and environment and sustainability (Boaz et al. 2019). Developments connected to these efforts ‘range from national centres/clearing houses that produce, synthesise and disseminate research evidence to local initiatives that encourage researchers and practitioners to work together in knowledge co-producing partnerships’ (Boaz and Nutley 2019, 251). Education has been no exception to such trends, having seen ‘a global push to bolster

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the connections between research and practice' (Malin et al. 2020, 1). Examples of this global push include developments such as research-practice partnerships in the US (Coburn and Penuel 2016), research-engaged schools in the UK (Godfrey and Brown 2019), a research-rich teaching profession in Australia (White et al. 2018); research, development and innovation in Singapore (Teh, Hogan, and Dimmock 2018) and evidence-based school development in Germany (Dormann et al. 2016).

These kinds of developments raise important questions about what it means to use research evidence *well* in education. As Parkhurst (2017, 170) argues in the field of policy, 'To improve the use of evidence in policy requires an explicit engagement with the question of what constitutes *better use* from a political perspective' [original emphasis]. This is about a subtle but important shift from a focus on the quality of the evidence towards a focus on the *quality of the use*. This distinction is important because improved evidence use in education requires clarity about not only what counts as quality research evidence but also what counts as quality use. To date, there has been wide-ranging debate about the former, but very little dialogue about the latter. There is a well-developed literature around understanding and appraising the quality of different kinds of evidence (e.g. Cook and Gorard 2007; Freeman et al. 2007; Nutley, Powell, and Davies 2013; Puttick 2018), but little in the way of an equivalent for understanding and appraising the quality of different kinds of use.

Purpose

With these issues in mind, this article presents a conceptual framework to define and elaborate what *quality use of research evidence* might mean in relation to education. This work was undertaken as part of an ongoing study in Australia, the Monash Q Project, to understand and improve research use in Australian schools (see Rickinson et al. 2020b, 2020a). The framework is based on a cross-sector systematic review and narrative synthesis of 112 relevant publications from four sectors: health, social care, education and policy (which emerged as an additional sector during the process), supported by stakeholder consultation (see Appendix A). The review and synthesis sought to explore if, and how, quality of evidence use had been defined and described within each of these sectors to inform the development of a quality use framework for education. The following questions guided the review: (1) *How has quality use of research evidence been described and conceptualised across sectors?* (2) *How can quality use of research evidence be defined and conceptualised in education?*

This article is presented in four main sections. We begin by describing the study's methodology, which involved cross-sector systematic review, narrative synthesis and stakeholder consultation. Next, we outline the findings of the review and synthesis in terms of the broad insights into quality of evidence use that emerged from across the sectors. Building on these cross-sector insights, we then present a way of defining and conceptualising quality use in relation to education in the form of the Quality Use of Research Evidence (QURE) framework. We conclude by reflecting on the current potential uses, and future further developments of this framework for understanding and supporting the productive use of research evidence in education.

Method

This section describes and explains the methodology and procedure for how we addressed the two research questions through a cross-sector systematic review and narrative synthesis, supported by stakeholder consultation. Both research questions were about working towards a conceptualisation of quality use of research evidence in relation to education. In line with arguments within the evidence use field about the value of learning from different policy areas and disciplines (Davies et al. 2019), the first question was about looking across practice-oriented sectors to understand how this issue of quality use of research evidence had been approached within the health, social care and education literature (with policy emerging as an additional sector during the process). The second research question was then focused on education and was about developing a way to define and frame this concept of quality use of research evidence from an educational perspective. This was motivated by our understanding that quality of evidence use had not been an explicit point of focus within the field of education.

Informed by the principles of systematic reviewing, the review followed a transparent method with clearly defined and documented searches, inclusion and exclusion processes, and a quality appraisal process (Gough, Oliver, and Thomas 2017). The design included narrative synthesis of the included documents to accommodate the methodological diversity common in systematic reviews of social interventions (Gough, Oliver, and Thomas 2017; Popay et al. 2006). The process also involved inputs from specialists in systematic reviewing, information science, evidence use, health, policy and social care and repeated consultations with educational practitioners, policymakers and researchers.

Search strategy

The search methods included both database and informal searches (e.g. personal contacts and reference checks), with the latter included to ensure inclusion of quality sources that are often missed in traditional protocol-driven searches (Greenhalgh and Peacock 2005). Based on the advice of sector experts, databases were selected to cover education (ERIC), health (Medline) and social care (Social Services Abstracts), along with an interdisciplinary database (PsycInfo). Search terms were identified and tested through an initial review of the research and in consultation with research librarians and database platform information scientists. The focus was on work related to *evidence use and research use and quality of use* and included topics around evaluation, development and improvement of evidence use, at and across the individual, organisational and system levels. Search strings were created for each database using a combination of keywords (see Figure 1).

Relevant publication types included research (conceptual or empirical) and professional (policy or practice) publications. Research publications encompassed journal articles, research reports, research summaries, research syntheses and research books and chapters. Professional publications comprised policy documents, practice guides, professional frameworks and quality models/indicators. The focus was on the work published in English with an emphasis on Australia, New Zealand, Canada, the USA and the UK. To ensure the identification of the largest number of papers in this emerging field, we did not

- 'evidence use' OR 'evidence based' OR 'evidence informed' OR 'use of evidence';
- 'research use' OR 'research engagement' OR 'research literacy' OR 'research utili*' OR 'use of research' OR 'research implementation' OR 'implementation of research'; and
- abilit* OR adapt* OR aptitude OR 'best practice' OR capabilit* OR competence OR 'deep' OR shallow OR effectiv* OR expertise* OR experience* OR quality OR innovat* OR intelligent OR 'knowledge level' OR 'novice expert use' OR novice OR expert OR professional OR skill* OR thoughtful OR wise.

Figure 1. Combination of keywords in search strings created for use with each database.

specify date restrictions. Publications were excluded if they focused on topics such as the use of data (as opposed to the use of research), awareness of research (as opposed to use of research) and the quality of evidence (as opposed to quality of its use).

The search process took place between April and July, 2019, and yielded 10,813 research and professional publications from the four databases. The titles and abstracts were exported from Endnote to Covidence for double screening, resulting in 268 included papers that were retrieved as full-text documents (Figure 2). Alongside this, the informal searches from the internet, personal contacts and reference checks generated an additional 175 documents. Internet searches involved Google, Google Scholar and targeted searches of relevant organisational websites. Personal contacts involved both personal and survey-type requests to key international researchers and brokers within education, health and social care. Reference list checks were conducted by the research team, based on key references identified in the initial set of included papers.

Screening, selection and appraisal

Preliminary analysis involved data extraction and appraisal of the initial set of included documents (i.e. the 268 included papers plus the additional 175 documents). The papers were organised by sector and validated through a series of moderation processes by the four members of the research team – an approach that is considered suitable for studies involving diverse implementation and mixed-method approaches (Popay et al. 2006), given the challenges in achieving consensus for quality criteria (Dixon-Woods et al. 2005). The categories used to organise the data were descriptive (e.g. aim, methodology, findings, key quotations and themes) (Gough, Oliver, and Thomas 2017). During this process, there were many documents related to policy, resulting in its establishment as an additional sector. Given that policy emerged as an additional sector during the process, the included papers were not representative of the sector per se, but of the general search strategy.

The literature from each of the four sectors (health, social care, education and policy) then underwent moderation processes, where papers were ranked according to their relevance to understanding quality use of research evidence. The decision to exclude papers at this point was based on discussions around their fitness-for-purpose, given that

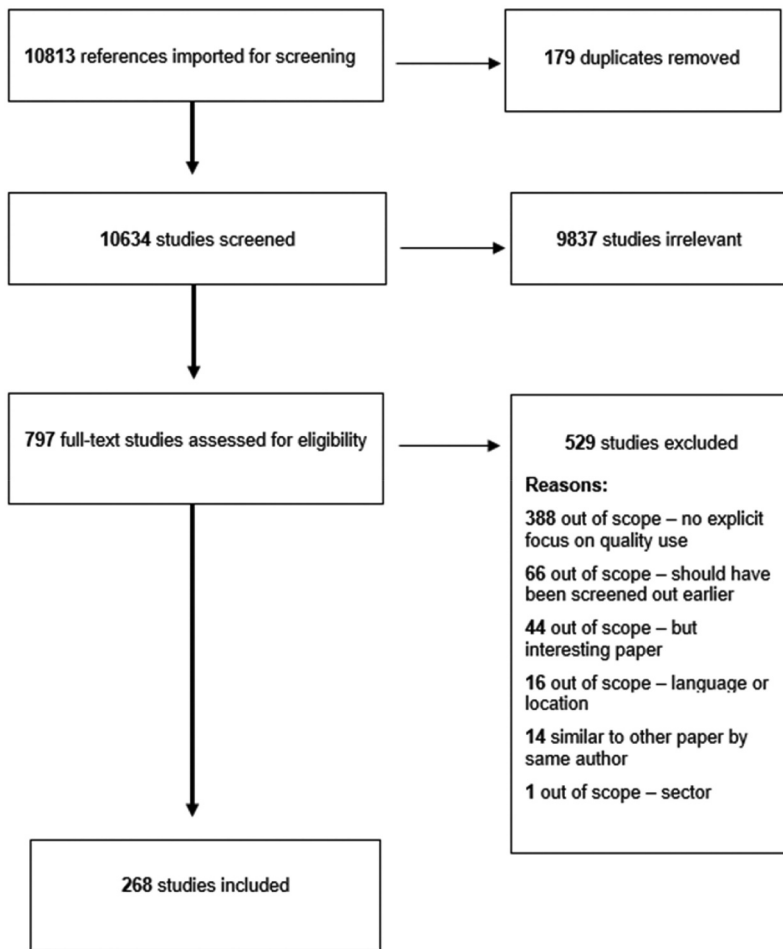


Figure 2. Flow chart summarising findings of the search strategy.

very little of the identified literature presented an explicit focus on quality of evidence use. In other words, because there were few publications that explicitly focused on quality use of research evidence, many of our inclusion/exclusion decisions required careful consideration about whether a publication addressed issues of quality of use implicitly or indirectly. Disagreements among the research team were resolved through consensus. This process resulted in the selection of 112 publications across the four sectors for in-depth analysis and synthesis, including 30 from health, 29 from social care, 31 from education and 22 from policy (see Appendix A).

Narrative synthesis

The included papers were the basis of four narrative syntheses, drafted as text-based documents addressing the first research question: *How has quality evidence use been described and conceptualised across sectors?* These narrative syntheses were 6000–12,000 words in length. The three non-education narratives (health, social care and policy)

underwent an additional review by sector experts for their insights and were revised accordingly. The feedback was supportive of the general conclusions offered by the respective syntheses, and additional seminal papers were suggested for possible inclusion and consideration.

Framework construction

To construct the framework, the narratives underwent two main stages of analyses, addressing each of the two research questions, to inform the development of the quality use of research evidence framework for education. The first stage involved thematic analyses to identify cross-cutting insights related to quality use of research evidence across the health, social care and policy narratives (see 'cross-sector insights'). We then compared these cross-sector themes with an early framework on quality use, which was developed prior to the cross-sector review (Rickinson et al. 2020a). This early framework highlighted four components for the quality use of research evidence: skillsets, mindsets, relationships and system. Comparing the similarities and differences resulted in an expansion of components (i.e. core components, leadership, culture and infrastructure), elaborations for all of the components and a revised framework. The second stage involved a comparative analysis to address the second research question (i.e. *How can quality use of research evidence be defined and conceptualised in education?*). The revised framework was then compared with the education literature, along with the stakeholder feedback, to elaborate on descriptions and indicators for each of the components. These iterative development and refinement processes were the basis of the Quality Use of Research Evidence Framework (see the section on *Framing quality use of research in education*).

Stakeholder consultation

Throughout the development of the framework, the research team shared initial and evolving ideas about quality evidence use with project partners and stakeholders via meetings, workshops and conferences. Partners and stakeholders volunteered their feedback, which informed the development and refinement of the framework. This process began with the consultation of experts to advise on the design and conduct of the systematic review, including experts on systematic reviews, academics and practitioners of evidence use in all four sectors and specialists such as librarians and information scientists (Gough, Oliver, and Thomas 2017).

Other stakeholders were invited to be involved throughout the development of successive versions of the framework. These included education stakeholders from across the system (i.e. project partners, researchers, policymakers, evidence brokers and classroom teachers). We also had ongoing consultations with an international evidence-use academic, throughout this process. Feedback was shared both formally (i.e. written responses to structured questions) and informally (i.e. verbally, by email). Those who provided feedback were acknowledged in the report for their contribution (Rickinson et al. 2020b). This collaborative process was intended to support the development of a practice-based framework, informed by relevant local and international advice and reflective of the perspectives and needs of diverse stakeholders across the Australian education system.

Findings

Our findings are presented in two parts – broad insights into quality of evidence use that emerged from across the sectors (Research Question 1) and then specific ways of framing quality use of research evidence in relation to education (Research Question 2).

Part 1: Cross-sector insights

The relevant literature from each of the four sectors of health, social care, education and policy sectors was, of course, rich and nuanced (Rickinson et al. 2021). Our purpose here is not to analyse the ideas and debates within each of the sectors in detail, but rather to highlight insights related to *quality use of research evidence* that were evident across the sectors. These concern the lack of well-developed conceptualisations of quality use, the importance of practitioner expertise in the evidence use process and the complexity of evidence use improvement within systems. Details of these findings are presented in the paragraphs below.

Limited conceptualisation of quality use: Our analysis found a definite lack of explicit definitions or descriptions of quality of evidence use across all sectors. With a few important exceptions (e.g. Earl and Timperley 2009; Parkhurst 2017; Rutter and Gold 2015; Sackett et al. 1996) we did not find well-developed articulations or discussions about what using research evidence well means or involves. While the literature of each of the sectors contains many different evidence use models and approaches, these have usually not explicitly addressed the issue of quality evidence use. The ideas presented in this paper are therefore responding to a gap in the evidence use literature not just within education but also in health, social care and policy. In highlighting this gap, however, it is important to emphasise that there were many concepts and frameworks within all these sectors that were significant in the development of our ideas about quality use. There were lines of thinking in all four sectors that provided helpful insights into the nature and development of evidence use within that sector, which, in turn, had implications for how quality of evidence use might be conceptualised in education. Particularly important, as elaborated below, were cross-sector ideas about the role of practitioner expertise in using evidence and the systems complexity of evidence use improvement.

Importance of practitioner expertise: All four sectors, and in particular, the practice-based sectors of health, social care and education, emphasised the importance of practitioner expertise in using evidence in context. In health, for example, an early articulation of evidence-based medicine made clear that ‘external clinical evidence can inform, but can never replace, individual clinical expertise, and it is this expertise that decides whether the external evidence applies to the individual patient at all’ (Sackett et al. 1996, 72). This recognition for the role of professional expertise and judgment was reflected in many other models and frameworks within the health literature (e.g. Greenhalgh et al. 2009; Satterfield et al. 2009; Ward, House, and Hamer 2010). In social care, there were also many evidence-use frameworks that highlighted the importance of practitioner expertise, contextual factors and client needs (e.g. Anderson 2011; Morton 2018; Rosen 2003). Indeed, there was concern that the social care profession has overemphasised rational practice and ignored or minimised contextual factors, such as client data, client values and views, clinical judgement and skills, and collaboration (Keenan and Grady 2014).

In education, the connection between research and data use was strongly linked with practical or tacit knowledge (e.g. British Educational Research Association [BERA] 2014; Earl 2015; Farley-Ripple et al. 2018; Greany and Maxwell 2017). For example, Nelson and Campbell (2019) highlighted the need for practice-based evidence (e.g. professional judgment), research-based evidence (e.g. research studies) and data-based evidence (e.g. pupil performance) to be used in combination. In policy, the role of judgment and expertise was related to the political nature of policy-related decision-making (Boaz and Nutley 2019; Nutley et al. 2010). There was a need to balance the policy situation and issue (e.g. Parkhurst 2017) with the needs and aims of different stakeholders (e.g. Hawkins and Parkhurst 2016) and the types and applicability of different kinds of evidence (e.g. Breckon 2016; Gluckman 2011).

Overall, these discussions make clear the challenging nature of using evidence in practical contexts and the critical role that practitioner expertise and judgment play in the process. These points are reflective of a 'shift to an evidence-informed as opposed to evidence-based discourse' (Boaz et al. 2019, 370). This shift is about professional practice being informed by (not based on) research evidence and research evidence complementing (rather than replacing) professional knowledge. These lines of thinking were important in the development of our quality use of research evidence framework, as reflected in the core components of thoughtful engagement with, and implementation of, appropriate research evidence (see section on *Core components*).

Significance of systems complexity: All four sectors pointed to the multi-level processes associated with evidence use improvement within larger systems. A key insight from the health sector was that evidence use needs to be conceptualised as a dynamic process, challenging notions of deterministic and linear knowledge transfer processes (Adams and Titler 2013; Chambers, Glasgow, and Stange 2013; Ward, House, and Hamer 2010). Many of the health frameworks highlighted the interactions between the actors, the evidence and the context (e.g. Ellen et al. 2011; Kitson, Harvey, and McCormack 1998; Ward, House, and Hamer 2010), with some emphasising adaptive change over time (Chambers, Glasgow, and Stange 2013; Chambers and Norton 2016). For example, Chambers and colleagues (2013, 1) argued that implementation involves 'continued learning and problem solving, ongoing adaptation of interventions with a primary focus on fit between interventions and multi-level contexts, and expectations for ongoing improvement'. Along similar lines, the social care literature stressed how evidence use needs to be an inherent and continuously evolving practice across the system (Avby, Nilsen, and Dahlgren 2014; Ghate and Hood 2019). For example, Ghate and Hood (2019, 4) argued that evidence use in social care should be about 'mobilis[ing] evidence *in practice*' (in contrast to simply moving evidence *into practice*)' (*italics original*). This perspective suggests that evidence use does not sit outside or alongside social care practice as a separate thing to consider or integrate, but must be inherent, as well as continuously evolving in all aspects of the profession.

The literature in the education sector emphasised the need to focus on the interactions across the system to support evidence use (British Educational Research Association [BERA] 2014; Godfrey 2019; Sharples 2013). These included embedding research and data literacy training in teacher education (British Educational Research Association [BERA] 2014; Coldwell et al. 2017; Tripney et al. 2018), improving how evidence use features in teacher certification or licencing (British Educational Research Association

[BERA] 2014; Tripney et al. 2018) and prioritising research use at the policy level (Education Endowment Foundation [EEF] 2019; Farley-Ripple et al. 2018; Park 2018). The policy literature, meanwhile, highlighted the importance of accountability, transparency and contestability of processes to improve evidence use. Quality evidence use, then, depended on the processes by which decisions are made and implemented (e.g. accountability), rather than the outcomes produced by a policy-making environment (e.g. effectiveness) (Boswell 2014; Parkhurst 2017; Rutter and Gold 2015).

Taken together, these discussions from the health, social care, education and policy sectors served to highlight the varying complexities involved in the improvement (and by implication, the quality) of evidence use. These ideas were important in shaping the nature and detail of the enabling components (both individual and organisational), and system-level influences, within our framework (see the section on *Enabling components*).

Part 2: Framing quality use of research evidence in education: the QURE framework

Having considered the ways in which quality use of research evidence had been addressed indirectly and implicitly across the different sectors, we now focus on how it could be defined and conceptualised in education. Based on our cross-sector analysis and synthesis of relevant literature, we came to define quality use of research evidence in education as follows: *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 3 presents the components of the Quality Use of Research Evidence (QURE) framework that was developed. As shown in the figure, this definition sees quality evidence use as comprising two core components: *appropriate research evidence* and *thoughtful engagement and implementation*. Quality evidence use is supported by three individual enabling components: *skillsets*, *mindsets* and *relationships*; and three organisational enabling components: *leadership*, *culture* and *infrastructure* – which are shaped by wider system-level influences.

While we are aware that practitioners draw from a broad range of evidence to inform their practice (Nelson and Campbell 2019), the ideas presented here are concerned with the use of a particular type of evidence, namely, research evidence. By *research evidence*, we mean evidence generated through systematic studies undertaken by universities or research organisations and reported in books, reports, articles, research summaries, training courses or events (Nelson et al. 2017). By *use*, we mean the process of actively engaging with, and drawing on, research evidence to inform, change and improve decision-making and practice (Coldwell et al. 2017). In the paragraphs below, we explain key aspects of our framework.

Core components: Quality evidence use needs to encompass the nature of the evidence and the nature of the use. At its core, therefore, are two inter-connected aspirations: for the research evidence to be *appropriate* and for the engagement and implementation to be *thoughtful*. Appropriate research evidence is about the quality and the context-specific nature of research evidence. From a use perspective, quality research evidence needs to be not only methodologically rigorous but also appropriate for the educational issues, the

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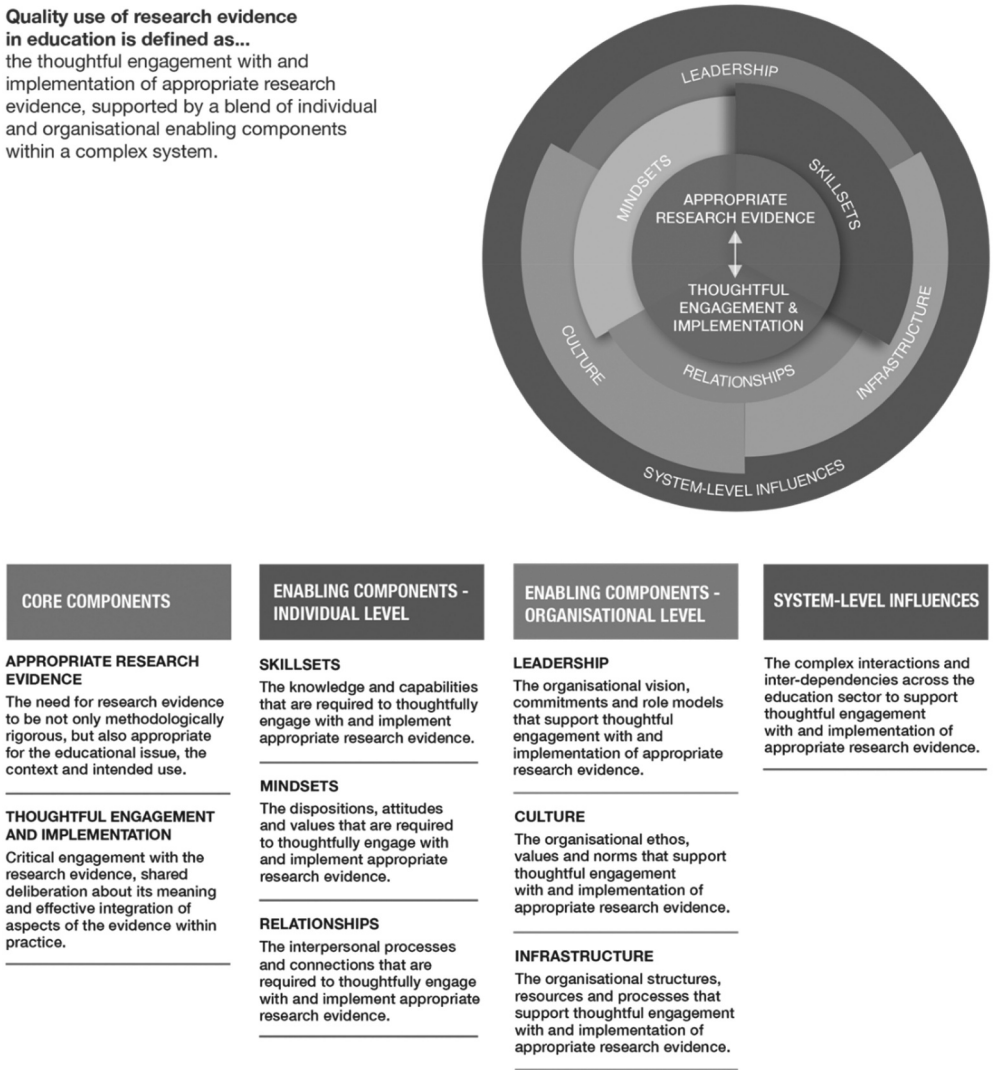


Figure 3. Components of the Quality Use of Research Evidence (QURE) framework. Source: Colour version in the following report: Rickinson et al. (2020b) Monash Q Project Report [black-and-white version reproduced with permission].

context and the intended use. As Nutley and colleagues (2013, 6) argued: ‘Evidence quality depends on what we want to know, why we want to know it and how we envisage that evidence being used’.

Meanwhile, thoughtful engagement and implementation reflect critical engagement with the research evidence, shared deliberation about its meaning and effective integration of aspects of the evidence within practice. According to Coburn et al. (2009, 71), research evidence ‘does not speak for itself’ and so educators must actively ‘interpret and make meaning of it in order to use it’. Research evidence does not replace professional expertise: rather, using evidence well involves integrating ‘professional expertise with the best external evidence from research’ (Sharples 2013, 7).

The interdependent nature of the core components suggests that high-quality research evidence use is a sophisticated undertaking. It is therefore important to pay attention to factors that can enable (or impede) its achievement. Drawing on a range of authors who have highlighted enablers of educational evidence use at multiple levels (e.g. Dyssegaard, Egelund, and Bjornoy Sommersel 2017; Godfrey 2019; Tripney et al. 2018), our framework depicts quality use of research evidence as the product of an effective combination of individual and organisational enabling components, along with system-level influences.

Individual enabling components: At an individual level, quality use of research evidence requires educators with particular *skillsets*, *mindsets* and *relationships*. Skillsets refer to the significant knowledge and capabilities involved in being able to translate, apply and sustainably implement evidence-informed decisions and approaches in specific contexts. Specifically, this involves being able to access research, assess the quality of research evidence and understand research approaches and methods (Brown and Greany 2018; Earl 2015; Louise et al. 2018). More broadly, this involves educators' ability to draw on their professional judgment (Coldwell et al. 2017), and combine their understanding of context and existing practice with the research (Spencer, Detrich, and Slocum 2012).

Alongside skillsets, mindsets describe the dispositions, attitudes and values around evidence and its use. For example, educators with a disposition towards evidence use have a questioning mind (Earl 2015), a conscious motivation to engage with research (Stoll et al. 2018) and an awareness of their own biases and assumptions (Earl 2015; Evans, Waring, and Christodoulou 2017; Spencer, Detrich, and Slocum 2012). Using evidence is not simply a technical activity: it is influenced by personal and professional values and beliefs (Nelson and Campbell 2019). Furthermore, Earl and Timperley (2009, 5) argue that 'the disposition to be open to a range of interpretations' is probably more important than skills in evidence interpretation. Stoll and colleagues (2018, 6) describe 'an evidence mindset' as one where teachers believe that using evidence can support their own, self-directed development and improve their teaching.

In addition to skillsets and mindsets, relationships refer to the interpersonal processes and connections with education stakeholders within and beyond the school. Using research evidence well is not an isolated, individual activity. Rather, viewing and supporting evidence use as a social process requires collective learning and responsibility (Earl 2015) along with genuine and structured collaboration within and across schools (Greany and Maxwell 2017; Park 2018). It is important to have 'trusted colleagues to help dig deeper into understanding the [...] evidence and considering appropriate instructional, structural or policy changes' (Finnigan and Daly 2014, 182). These interactions also extend beyond the school to include other education stakeholders (e.g. practitioners from other schools and researchers) through conversations, collaborations, networks and partnerships (e.g. Bryk, Gomez, and Grunow 2011; Farley-Ripple et al. 2018; Godfrey 2019).

Organisational enabling components: At an organisational level, quality use of research evidence also requires organisational contexts with supportive *leadership*, *culture* and *infrastructure*. Leadership is about the organisational vision, commitments and role models to demonstrate and promote research use. At the school level, leadership has been identified as a key leverage point for developing and maintaining a research-engaged school culture (e.g. Dyssegaard, Egelund, and Sommersel 2017; Godfrey 2019; Nelson and Campbell 2019). In highly research-engaged schools in the UK, for example, senior leaders

were found to 'play a key role, acting as intermediaries and facilitators of access to, engagement with and use of research evidence for staff in their schools' (Coldwell et al. 2017). Leadership also involves modelling research engagement through leaders' own outlooks and actions (Brown and Greany 2018; Godfrey 2019; Stoll et al. 2018) and distributed leadership structures (Cain 2019; Dyssegaard, Egelund, and Sommersel 2017).

Closely entwined with leadership is organisational culture, which is about the organisational ethos, values and norms. There is a need for evidence use to be a cultural norm that is embedded within an organisation's 'outlook, systems and activity' (Hanscomb and MacBeath, 2003, 10). This involves promoting research use within whole-school policy and planning documents (Brown and Greany 2018; Stoll et al. 2018; Tripney et al. 2018). Critically important is an ethos that encourages staff to reflect regularly on their practice, take risks and try different approaches based on evidence (Brown, Schildkamp, and Hubers 2017). For example, Brown and Greany (2018, 188) characterise research-engaged schools as ones with 'a deliberate strategic and developmental approach toward fostering evidence-informed practices and cultures across all staff'.

Quality evidence use also depends on infrastructure – that is, the organisational structures, resources and processes to support research use. There is a need for measures such as: the allocation of time, space, facilities and budget; the creation of school-based research coordinators or champions; the establishment of links with external research partners and networks; and the development of formal and informal processes to support staff learning and deliberation about research and practice (Cain 2019). These kinds of investments and initiatives are important because educators need 'access to facilities and resources (both on-site and online) that support sustained engagement with and in research' (British Educational Research Association [BERA] 2014, 7).

System influences: While it is helpful to understand the constituent components around evidence use, our framework also considers them as interacting within the wider education system to support quality evidence use. This is based on the notion that teachers, schools, evidence and its generation do not exist in isolation, but are part of a broader education system with diverse purposes and processes that impact research use in different ways. Understanding the nature of these connections and interactions in complex systems, such as education, can support effective and sustained change (Meadows 2014; Senge et al. 2012). To address this complexity, we describe system-level influences as the complex interactions and interdependencies across the education sector to support thoughtful engagement with, and implementation of, appropriate research evidence.

There is growing support for understanding and improving evidence use through system-wide approaches which focus on building connections between evidence generation, synthesis, distribution and use to form effective 'evidence ecosystems' (Boaz and Nutley 2019, 251; Sharples 2013). As Sharples (2013, 20) argues, 'If we are to create effective evidence ecosystems in social practice it is crucial we consider these elements as a whole'. Increasing and improving the use of evidence, therefore, depends on 'co-ordinated efforts from a wide range of stakeholders – researchers, practitioners, policy-makers and intermediaries – working in unison' (Sharples 2013, 24).

It is also important to consider the 'wider political and societal systems' (Gough, Maidment, and Sharples 2018, 11). There is, for example, increased recognition of the (often limiting) impact that other system influences, such as accountability policies and

improvement priorities, can have on evidence use in schools (Godfrey 2019). On the other hand, system leaders can enable broad support for evidence use by prioritising research use at the board, district or central office level (Education Endowment Foundation [EEF] 2019; Farley-Ripple et al. 2018) and by providing funding to support the creation of evidence-informed cultures and infrastructures (Nelson and Campbell 2019).

To understand and improve evidence use in systems, then, there is a need for ongoing evaluation and feedback mechanisms (Bannigan 2007; Meadows 2014; Senge et al. 2012). Where traditional measures focus on accountability through outcomes, sustained system-wide changes call for the continuous self-monitoring of individual and school engagement in research use (e.g. Brown and Rogers 2015; Nutley et al. 2; Stoll et al. 2018). This also includes, for example, the evaluation of the processes and structures that link the production of evidence and its use (Farley-Ripple et al. 2018).

While there has been an increasing call for systems-level perspectives across all sectors, including education, there is much more research needed to understand the purpose and processes in each system, their constituent parts and how they relate and interact to support quality evidence use. These issues will be addressed through further development and refinement of the quality use of research evidence framework, as discussed in the next section.

Discussion

This article is concerned with the question of what it means to use research evidence well in education. We have shown that this is an issue that, overall, has not been explicitly examined within the sectors of education, health, social care and policy. The ideas presented here are therefore addressing an important cross-sector gap in the evidence use field and represent an initial attempt to define and elaborate the concept of quality use of research evidence. With this in mind, we see potential for this framework to inform current approaches to the use of research in education. At the same time, though, we are aware that what we have presented here is an early-stage conceptual framework that has limitations and needs further development. It is to these current potential uses and future further developments that we now turn.

Current potential uses of the QURE framework

As we see it, the idea of quality use as elaborated in this article has potential implications for anyone who is interested in strengthening the role of research within school and system improvement. This includes teachers, school leaders, system leaders, teacher educators, policymakers, funders, researchers and research brokers. With these audiences in mind, we see two ways in which the QURE framework in its present form could be helpful: as a stimulus for reflection on current approaches to using evidence and as a frame with which to review current efforts to support evidence use.

In terms of reflecting on current approaches to using evidence, the idea of quality use highlights the need for system-level developments that not only create access to valid and reliable evidence but also support productive use of that evidence. More specifically, the QURE framework can be seen as an invitation to reflect honestly on current approaches to *talking about, enhancing and practising evidence use*. These relate to the

following questions: How motivated are we to shift our focus from *whether* we use evidence to *how well* we use evidence? How committed are we to improving not just the quality of evidence but also the quality of *use*? and How curious are we about the *appropriateness* of our evidence and the *thoughtfulness* of our engagement and implementation of that evidence? These kinds of distinctions are, of course, easy to raise, but hard to address. They are not meant as either/or binaries but, rather, as both/and continua that can help teachers, school leaders, system leaders and others to become more reflective about their current approaches to evidence and its use.

Second, the ideas in this article also make clear that high-quality use of research evidence does not happen in a vacuum. It is sophisticated work that requires not only professional educators but also supportive organisations and systems. The QURE framework, then, can encourage school and system leaders to think carefully about different aspects of evidence use. These include how well they are supporting the development of education professionals with not only the knowledge and capabilities to understand research evidence, but also the dispositions and values to be open to its meaning, and the relational sensitivity and capacity to work with others to determine how to use it in context. Similarly, it can encourage school and system leaders to reflect on how well they are developing education organisations with not only the structures and processes to enable staff to access and engage with evidence, but also the ethos and values to make this a cultural norm, and the leadership and commitment to demonstrate and promote its significance. Finally, the QURE framework can encourage school and system leaders to consider how well they are helping to develop education systems to support quality evidence use not only within specific individuals, institutions or contexts, but also through coordinated interventions across multiple levels and with varied key stakeholders. This involves the development of a robust evidence ecosystem of ‘interconnected elements that interact in the process of evidence generation, synthesis and use’, including practitioners influencing and participating in the generation, as well as the utilisation, of research (Boaz and Nutley 2019, 251). In summary, this is about looking carefully at the breadth and depth of current efforts to develop and sustain quality use of research evidence in education.

Limitations and future development of the QURE framework

As noted earlier, the ideas presented in this article are early stage and conceptual, and so have limitations that need further development. We see a need for testing and refining the framework through empirical investigation, theoretical inquiry and intervention development. Taking empirical investigation first, there is a very clear need to move from conceptual concerns (i.e. what does quality use mean?) to empirical questions (i.e. what does quality use look like in practice?). There are parallels here with studies seen within the cross-sector review. In the health sector, for example, Ward et al. (2010) first published their framework for knowledge transfer and then spent a year collecting observations and interviews to test and refine their model, proposing a more contextually relevant model. There is a need for work that explores teachers’ and school leaders’ perspectives on what using research evidence well, and using research evidence poorly, looks like and involves in the school context. We also need investigations that probe into the processes and practices of research use in different kinds of schools and the ways in

which the staff in those schools reflect on the strengths and weaknesses within these practices. These kinds of explorations will contribute to a richer picture of quality use of research evidence as a school-based practice. They will also enable conceptual ideas such as the QURE framework to be tested in relation to educators' accounts of using research evidence well in practice and then refined and elaborated using school-based examples. Another potential line of empirical investigation would be to examine quality use of research evidence at different system levels (e.g. How do the framework's core and enabling components play out similarly or differently at the individual, organisational and system level?) and across different systems (e.g. What core and enabling components of quality use feature more or less strongly in the evidence use improvement efforts of different systems?).

A second area for future work, though, is related to theoretical inquiry. We are conscious that research use in education has been described as 'undertheorised' (Cain et al. 2019, 1084), and the research use field more generally is reportedly 'weak in theory' (Gough and Boaz 2015, 489). There is a need, then, to develop a stronger underpinning rationale for the framework as a conception of quality use. This would involve examining and articulating theoretical and philosophical perspectives on evidence and its use in the educational context. This might take inspiration from Parkhurst's (2017, 9) work in the policy sector, which draws on ideas from policy studies, political theory and cognitive psychology to propose the 'good governance of evidence' as an alternative to the idea of 'evidence-based policy'. What is important in this example is how the development of new ideas about improving evidence use in policy required in-depth reflection about the nature of policy, politics and policymaking. So too, then, ideas about using research evidence well in education need to be informed by in-depth deliberation about the nature of education, professional knowledge and pedagogical practice.

Third, we see potential to use the framework as the basis for the development of interventions to improve the quality of evidence use amongst practitioners. The need for robust approaches to evidence use capacity building and professional development was a clear theme across the sectors. In social care, Bellamy et al. (2013) developed online training modules based on Satterfield et al.'s (2009) transdisciplinary model of evidence-based practice, as well as core competencies from the national governing body. In policy, Stewart, Langer, and Erasmus (2019) developed research-informed principles to inform their approach to evidence use capacity building with decision-makers. These kinds of studies suggest that getting clearer about a framework for effective use of evidence can help shape the content, nature and evaluation of capacity building and professional learning initiatives.

Conclusion

In summary, this article argues that calls for increased use of research in education need to be matched by efforts to understand what using research evidence *well* means and involves. To date, there has been wide-ranging debate about what counts as quality evidence, but very little dialogue about what counts as *quality use*. The QURE framework outlined in this article is a first attempt to address this gap in relation to education. We see the framework as being potentially helpful for reflecting on current approaches to using evidence and reviewing current efforts to support evidence use. Importantly, though, we

also see an important need for testing and refining the framework through further empirical investigation, theoretical inquiry and intervention development.

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Appendix A: List of 112 included papers grouped by sector

Sector	Papers Included for Synthesis
Health	<p>Abell, E., Cummings, R., Duke, A., & Marshall, J. (2015). A framework for identifying implementation issues affecting extension human sciences programming. <i>Journal of Extension</i>, 53(5), 1–15. https://www.joe.org/joe/2015october/a2.php</p> <p>Adams, S., & Titler, M. (2013). Implementing evidence-based practice. In M. Foreman & M. Mateo (Eds.), <i>Research for advanced practice nurses: From evidence to practice</i> (pp. 321–350). Springer.</p> <p>Alonso-Coello, P., Schünemann, H., Moher, J., Brignardello-Petersen, R., Akl, E., Davoli, M., . . . Oxman, A. (2016). GRADE Evidence to Decision (EtD) frameworks: A systematic and transparent approach to making well informed healthcare choices. Introduction. <i>BMJ</i> (353), 1–10. https://doi.org/10.1136/bmj.i2016</p> <p>Baker-Ericzen, M., Jenkins, J., Park, M., & Garland, M. (2015). Clinical decision-making in community children's mental health: Using innovative methods to compare clinicians with and without training in evidence-based treatment. <i>Child & Youth Care Forum</i>, 44(1), 133–157. https://doi.org/10.1007/s10566-014-9274-x</p> <p>Brennan, S. E., McKenzie, J. E., Turner, T., Redman, S., Makkar, S., Williamson, A., Haynes, A. & Green, S. E. (2017). Development and validation of SEER (Seeking, Engaging with and Evaluating Research): a measure of policymakers' capacity to engage with and use research. <i>Health Research Policy and Systems</i>, 15(1), 1. https://doi.org/10.1186/s12961-016-0162-8</p> <p>Bannigan, K. (2007). Making sense of research utilisation. In J. Creek & A. Lawson-Porter (Eds.), <i>Contemporary issues in occupational therapy: Reasoning and reflection</i> (pp. 189–215). John Wiley & Sons.</p> <p>Campbell, B. (2010). Applying knowledge to generate action: A community-based knowledge translation framework. <i>Journal of Continuing Education in the Health Professions</i>, 30(1), 65–71. https://doi.org/10.1002/chp.20058</p> <p>Chalmers, I., Oxman, A., Austvoll-Dahlgren, A., Ryan-Vig, S., Pannell, S., Semakula, D., Albarqouni, L., Glasziou, P., Mahtani, K., Nunan, D., Heneghan, C., & Badenoch, D. (2018). Key Concepts for Informed Health Choices: a framework for helping people learn how to assess treatment claims and make informed choices. <i>BMJ Evidence - Based Medicine</i>, 23(1), 29–33. https://doi.org/10.1136/ebmed-2017-110829</p> <p>Chambers, D. A., Glasgow, R. E., & Stange, K. C. (2013). The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. <i>Implementation Science</i>, 8(1), 117. https://doi.org/10.1186/1748-5908-8-117</p> <p>Chambers, D. A., & Norton, W. E. (2016). The Adaptome: Advancing the Science of Intervention Adaptation. <i>American Journal of Preventive Medicine</i>, 51(4 Suppl 2), S124–S131. https://doi.org/10.1016/j.amepre.2016.05.011</p> <p>Craik, J., & Rappolt, S. (2006). Enhancing research utilization capacity through multifaceted professional development. <i>The American Journal of Occupational Therapy</i>, 60(2), 155–164. https://doi.org/10.5014/ajot.60.2.155</p> <p>Davies, H., Powell, A., & Smith, S. (2011). Supporting NHS Scotland in developing a new knowledge-to-action model. http://www.knowledge.scot.nhs.uk/media/CLT/ResourceUploads/4002569/K2A_Evidence.pdf</p> <p>Dobrow, Goel, Lemieux-Charles, & Black. (2006). The impact of context on evidence utilization: A framework for expert groups developing health policy recommendations. <i>Social Science & Medicine</i>, 63(7), 1811–1824. https://doi.org/10.1016/j.socscimed.2006.04.020</p> <p>Ellen, M., Lavis, J., Ouimet, M., Grimshaw, J., & Bédard, P. (2011). Determining research knowledge infrastructure for healthcare systems: A qualitative study. <i>Implementation Science</i>, 6(1), 60. https://doi.org/10.1186/1748-5908-6-60</p> <p>Gabbay, J., & May, A. (2004). Evidence based guidelines or collectively constructed “mindlines?” Ethnographic study of knowledge management in primary care. <i>BMJ</i>, 329(7473), 1013–1016. https://doi.org/10.1136/bmj.329.7473.1013</p> <p>Graham, I. D., Logan, J. B., Harrison, M. E., Straus, S., Tetroe, J., Caswell, W., & Robinson, N. (2006). Lost in knowledge translation: Time for a map? <i>Journal of Continuing Education in the Health Professions</i>, 26(1), 13–24. https://doi.org/10.1002/chp.47</p> <p>Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: Systematic review and recommendations. <i>Milbank Quarterly</i>, 82(4), 581–629. https://doi.org/10.1111/j.0887-378X.2004.00325.x</p>

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Sector	Papers Included for Synthesis
	<p>Hogan, D. L., & Logan, J. (2004). The Ottawa model of research use: A guide to clinical innovation in the NICU. <i>Clinical Nurse Specialist</i>, 18(5), 255–261.</p> <p>Hunt, J., Curran, G., Kramer, T., Mouden, S., Ward-Jones, S., Owen, R., & Fortney, J. (2012). Partnership for implementation of evidence-based mental health practices in rural federally qualified health centers: Theory and methods. <i>Progress in Community Health Partnerships</i>, 6(3), 389–98. https://doi.org/10.1353/cpr.2012.0039</p> <p>Kitson, A., Harvey, G., & McCormack, B. (1998). Enabling the implementation of evidence based practice: A conceptual framework. <i>Quality in Health Care</i>, 7(3), 149–158. http://dx.doi.org/10.1136/qshc.7.3.149</p> <p>Leeman, J., Calancie, L., Kegler, M., Escoffery, C., Herrmann, A., Thatcher, E., . . . Fernandez, M. (2017). Developing Theory to Guide Building Practitioners' Capacity to Implement Evidence-Based Interventions. <i>Health Education & Behavior</i>, 44(1), 59–69. https://doi.org/10.1177/1090198115610572</p> <p>Makkari, S., Brennan, S., Turner, T., Williamson, A., Redman, S. & Green, S. (2016). The development of SAGE: A tool to evaluate how policymakers' engage with and use research in health policymaking. <i>Research Evaluation</i>, 25(3), 315–328. https://doi.org/10.1093/reseval/rvv044</p> <p>Mallidou, A., Atherton, P., Chan, L., Frisch, N., Glegg, S., & Scarrow, G. (2018). Core knowledge translation competencies: A scoping review. <i>BMC Health Services Research</i>, 18(1), 1–15. https://doi.org/10.1186/s12913-018-3314-4</p> <p>Meyers, D., Durlak, C., & Wandersman, J. (2012). <i>The Quality Implementation Framework: A synthesis of critical steps in the implementation process</i>. <i>American Journal of Community Psychology</i>, 50(3–4), 462–480. https://doi.org/10.1007/s10464-012-9522-x</p> <p>Redman, S., Turner, Davies, Williamson, Haynes, Brennan, . . . Green. (2015). The SPIRIT Action Framework: A structured approach to selecting and testing strategies to increase the use of research in policy. <i>Social Science & Medicine</i>, 136–137, 147–155. https://doi.org/10.1016/j.socscimed.2015.05.009</p> <p>Sackett, D., Rosenberg, W., Gray, J., Haynes, R., & Richardson, W. (1996). Evidence based medicine: What it is and what it isn't. <i>BMJ</i>, 312(7023), 71–72. https://doi.org/10.1136/bmj.312.7023.71</p> <p>Satterfield, J., Spring, B., Brownson, R., Mullen, E., Newhouse, R., Walker, B., & Whitlock, E. (2009). Toward a transdisciplinary model of evidence-based practice. <i>Milbank Quarterly</i>, 87(2), 368–390. https://doi.org/10.1111/j.1468-0009.2009.00561.x</p> <p>Stetler, C. (2001). Updating the Stetler Model of research utilization to facilitate evidence-based practice. <i>Nursing Outlook</i>, 49(6), 272–279.</p> <p>Ward, V., House, A., & Hamer, S. (2009). Developing a framework for transferring knowledge into action: A thematic analysis of the literature. <i>Journal of Health Services Research & Policy</i>, 14(3), 156–164. https://doi.org/10.1258/jhsrp.2009.008120</p> <p>Ward, V., Smith, S., Carruthers, S., Hamer, S., & House, A. (2010). <i>Knowledge Brokering. Exploring the process of transferring knowledge into action</i> (Final report). University of Leeds.</p>
Social Care	<p>Anastas, J. W. (2014). When is research good evidence? Issues in reading research. <i>Journal of Clinical Social Work</i>, 42, 107–115. DOI: 10.1007/s10615-013-0452-3.</p> <p>Anderson, I. (2011). Evidence, policy and guidance for practice: A critical reflection on the case of social housing landlords and antisocial behaviour in Scotland. <i>Evidence & Policy</i>, 7(1), 41–58. DOI: 10.1332/174426411X552990.</p> <p>Annan, J. (2005). Situational analysis: A framework for evidence-based practice. <i>School Psychology International</i>, 26(2), 131–146. DOI: 10.1177/0143034305052909.</p> <p>Austin, B. S., & Leahy, M. J. (2015). Construction and validation of the Clinical Judgement Skill Inventory: Clinical judgement skill competencies that measure counsellor debiasing techniques. <i>Rehabilitation Research, Policy, and Education</i>, 29(1), 27–46. DOI: 10.1891/2168-6653.29.1.27.</p> <p>Austin, M. J., Dal Santo, T. S., & Lee, C. (2012). Building organizational supports for research-minded practitioners. <i>Journal of Evidence-Based Social Work</i>, 9(1–2), 174–211. DOI: 10.1080/15433714.2012.636327.</p> <p>Avby, G., Nilsen, P., & Dahlgren, M. A. (2014). Ways of understanding evidence-based practice in social work: A qualitative study. <i>The British Journal of Social Work</i>, 44, 1366–1383. DOI: 10.1093/bjsw/bcs198.</p> <p>Axford, N. Berry, V., Little, M., & Morpeth, L. (2006). Developing a common language in children's services through research-based inter-disciplinary training. <i>Social Work Education</i>, 25(2), 161–176. DOI: 10.1080/02615470500487648.</p>

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Sector	Papers Included for Synthesis
	<p>Bridge, T. J., Massie, E. G., & Mills, C. S. (2008). Prioritizing cultural competence in the implementation of an evidence-based practice model. <i>Children and Youth Services Review</i>, 30, 1111-1118. DOI: 10.1016/j.chilyouth.2008.02.005.</p> <p>Cunningham, W. M. S., & Duffee, D. E. (2009). Styles of evidence-based practice in the child welfare system. <i>Journal of Evidence-Based Social Work</i>, 6(2), 176-197. DOI: 10.1080/15433710802686732.</p> <p>Drisco, J. W., & Grady, M. D. (2015). Evidence-based practice in social work: A contemporary perspective. <i>Journal of Clinical Social Work</i>, 43, 274-282. DOI: 10.1007/s10615-015-0548-z.</p> <p>Epstein, I. (2009). Promoting harmony where there is commonly conflict: Evidence-informed practice as an integrative strategy. <i>Social Work in Health Care</i>, 48(3), 216-231. DOI: 10.1080/00981380802589845.</p> <p>Gambrill, E. (2010). Evidence-based practice and the ethics of discretion. <i>Journal of Social Work</i>, 11(1), 26-48. DOI: 10.1177/1468017310381306.</p> <p>Gambrill, E. (2018). Contributions of the process of evidence-based practice to implementation: Educational opportunities. <i>Journal of Social Work Education</i>, 54(supp. 1), S113-S125. DOI: 10.1080/10437797.2018.1438941.</p> <p>Ghanem, C., Kollar, I., Fischer, F., Lawson, T. R., Pankofer, S. (2018). How do social work novices and experts solve professional problems? A micro-analysis of epistemic activities and the use of evidence. <i>European Journal of Social Work</i>, 21(1), 3-19. DOI: 10.1080/13691457.2016.1255931.</p> <p>Ghate, D., & Hood, R. (2019). Using evidence in social care. In A. Boaz, H. Davies, A. Fraser, & S. Nutley (Eds.), <i>What works now? Evidence-informed policy and practice</i>, (pp. 89-109). Bristol, UK: Policy Press.</p> <p>Graaf, G., & Ratliff, G. A. (2018). Preparing social workers for evidence-informed community-based practice: An integrative framework. <i>Journal of Social Work Education</i>, 54(supp. 1), S5-S19. DOI: 10.1080/10437797.2018.1434437.</p> <p>Gray, M. Sharland, E., Heinsch, M., & Schubert, L. (2015). Connecting research to action: Perspectives on research utilisation. <i>The British Journal of Social Work</i>, 45(7), 1952-1967. DOI: 10.1093/bjsw/bcu089.</p> <p>Karvinen-Niinikoski, S. (2005). Research orientation and expertise in social work – challenges for social work education. <i>European Journal of Social Work</i>, 8(3), 259-271. DOI: 10.1080/136914505000210756.</p> <p>Keenan, E. K., & Grady, M. D. (2014). From silos to scaffolding: Engaging and effective social work practice. <i>Journal of Clinical Social Work</i>, 42, 193-204. DOI: 10.1007/s10615-014-0490-5.</p> <p>McCracken, S. G., & Marsh, J. C. (2008). Practitioner expertise in evidence-based practice decision making. <i>Research on Social Work Practice</i>, 18(4), 301-310. DOI: 10.1177/1049731507308143.</p> <p>McLaughlin, H. (2011). Promoting a research-minded culture in welfare organizations. <i>European Journal of Social Work</i>, 14(1), 109-121. DOI: 10.1080/13691457.2010.516631.</p> <p>Morton, S. (2018). Evidence synthesis for knowledge exchange: Balancing responsiveness and quality in providing evidence for policy and practice. <i>Evidence & Policy</i>, 14(1), 155-167. DOI: 10.1332/174426416X14779388510327.</p> <p>Nevo, I., & Slonim-Nevo, V. (2011). The myth of evidence-based practice: Towards evidence-informed practice. <i>The British Journal of Social Work</i>, 41(6), 1176-1197. DOI: 10.1093/bjsw/bcq149.</p> <p>Okpych, N. J., & Yu, J. L-H. (2014). A historical analysis of evidence-based practice in social work: The unfinished journey toward an empirically grounded profession. <i>Social Service Review</i>, 88(1), 3-58. DOI: 10.1086/674969.</p> <p>Petch, A., Lightowler, C., Pattoni, L., & Watson, I. (2014). Embedding research into practice through innovation and creativity: A case study from social services. <i>Evidence & Policy</i>, 10(4), 555-564. DOI: 10.1332/174426414X14144247109334.</p> <p>Pollio, D. E. (2003). The evidence-based group worker. <i>Social Work With Groups</i>, 25(4), 57-70. DOI: 10.1300/J009v25n04_05.</p> <p>Rosen, A. (2003). Evidence-based social work practice: Challenges and promise. <i>Social Work Research</i>, 27(4), 197-208. DOI: 10.1093/swr/27.4.197.</p> <p>Satterfield, J. M., Sprin, B., Brownson, R. C., Mullen, E. J., Newhouse, R. P., Walker, B. B., & Whitlock, E. P. (2009). Toward a transdisciplinary model of evidence-based practice. <i>The Milbank Quarterly</i>, 87(2), 368-390. DOI: 10.1111/j.1468-0009.2009.00561.x.</p> <p>Schalock, R. L., Verdugo, M. A., & Gomez, L. E. (2011). Evidence-based practices in the field of intellectual and developmental disabilities: An international consensus approach. <i>Evaluation and Program Planning</i>, 34, 273-282. DOI: 10.1016/j.evalprogplan.2010.10.004.</p>

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Sector	Papers Included for Synthesis
Education	<p>British Educational Research Association [BERA] (2014). <i>Research and the teaching profession: Building the capacity for a self-improving education system</i> (Final Report). https://www.thersa.org/globalassets/pdfs/bera-rsa-research-teaching-profession-full-report-for-web-2.pdf</p> <p>Brown (2015) Conclusion: Leading the Use of Research in Schools. In Brown, C. D. (Ed.), <i>Leading the use of research and evidence in schools</i> (pp. 153–160). Institute of Education Press.</p> <p>Brown, C. (2017). Research learning communities: How the RLC approach enables teachers to use research to improve their practice and the benefits for students that occur as a result. <i>Research for All</i>, 1(2), 387–405. https://doi.org/10.18546/RFA.01.2.14</p> <p>Brown, C., & Greany, T. (2018). The evidence-informed school system in England: Where should school leaders be focusing their efforts? <i>Leadership & Policy in Schools</i>, 17(1), 115–137. https://doi.org/10.1080/15700763.2016.1270330</p> <p>Brown, C., & Rogers, S. (2014). Measuring the effectiveness of knowledge creation as a means of facilitating evidence-informed practice in early years settings in one London borough. <i>London Review of Education</i>, 12(3), 245–260. https://doi.org/10.18546/LRE.12.3.01</p> <p>Brown, C., & Rogers, S. (2015). Knowledge creation as an approach to facilitating evidence informed practice: Examining ways to measure the success of using this method with early years practitioners in Camden (London). <i>Journal of Educational Change</i>, 16(1), 79–99. https://doi.org/10.1007/s10833-014-9238-9</p> <p>Brown, C., Schildkamp, K., & Hubers, M. D. (2017). Combining the best of two worlds: A conceptual proposal for evidence-informed school improvement. <i>Educational Research</i>, 59(2), 154–172. https://doi.org/10.1080/00131881.2017.1304327</p> <p>Bryk, A. S., Gomez, L. M., Grunow, A., & Hallinan, M. T. (2011). Getting ideas into action: Building networked improvement communities in education. In M. Hallinan (Ed.), <i>Frontiers in sociology of education</i> (pp. 127–162). Springer. https://doi.org/10.1007/978-94-007-1576-9_7</p> <p>Coldwell, M., T. Greaney, S. Higgins, C. Brown, B. Maxwell, B. Stiell, L. Stoll, B. Willis, and H. Burns. (2017). <i>Evidence-informed teaching: an evaluation of progress in England. Research Report</i>. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/625007/Evidence-informed_teaching_-_an_evaluation_of_progress_in_England.pdf</p> <p>Creaby C., Dann R., Morris A., Theobald K., Walker M., White B. (2017). <i>Leading Research Engagement in Education: Guidance for organisational change</i>. https://www.cebenetwork.org/sites/cebenetwork.org/files/CEBE%20-%20Leading%20Research%20Engagement%20in%20Education%20-%20Apr%202017.pdf</p> <p>Dyssegaard, C., Egelund, N. & Sommersel, H. (2017). <i>A systematic review of what enables or hinders the use of research-based knowledge in primary and lower secondary school</i>. https://www.videnomlaesning.dk/media/2176/what-enables-or-hinders-the-use-of-research-based-knowledge-in-primary-and-lower-secondary-school-a-systematic-review-and-state-of-the-field-analysis.pdf</p> <p>Earl, L. M. (2015). Reflections on the challenges of leading research and evidence use in schools. In C.D. Brown (Ed.), <i>Leading the use of research and evidence in schools</i> (pp. 146–152). Institute of Education Press.</p> <p>Earl, L. M. & Timperley, T. (2009). Understanding how evidence and learning conversations work. In L. M. Earl & H. Timperley (Eds.), <i>Professional learning conversations</i> (pp. 1–12). Springer.</p> <p>Education Endowment Foundation (2019). The EEF guide to becoming an evidence-informed school governor and trustee. https://educationendowmentfoundation.org.uk/public/files/Publications/EEF_Guide_for_School_Governors_and_Trustees_2019_-_print_version.pdf</p> <p>Evans, C., Waring, M., & Christodoulou, A. (2017). Building teachers' research literacy: Integrating practice and research. <i>Research Papers in Education</i>, 32(4), 403–423. https://doi.org/10.1080/02671522.2017.1322357</p> <p>Farley-Ripple, E., Karpyn, A. E., McDonough, K., & Tilley, K. (2017). In M. Y. Eryaman & B Schneider, <i>Evidence and public good in educational policy, research and practice</i> (pp. 79–95). Springer.</p> <p>Farley-Ripple, E., May, H., Karpyn, A., Tilley, K., & McDonough, K. (2018). Rethinking connections between research and practice in education: A conceptual framework. <i>Educational Researcher</i>, 47(4), 235–245. https://doi.org/10.3102/0013189X18761042</p> <p>Godfrey, D. (2016). Leadership of schools as research-led organisations in the English educational environment: Cultivating a research-engaged school culture. <i>Educational Management Administration & Leadership</i>, 44(2), 301–321. https://doi.org/10.1177/1741143213508294</p> <p>Godfrey, D. (2019). Moving forward—How to create and sustain an evidence-informed school eco-system. In D. Godfrey & C. Brown (Eds.), <i>An ecosystem for research-engaged schools</i> (pp. 202–219). Routledge.</p>

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Sector	Papers Included for Synthesis
	<p>Greany, T., & Maxwell, B. (2017). Evidence-informed innovation in schools: aligning collaborative research and development with high quality professional learning for teachers. <i>International Journal of Innovation in Education</i>, 4(2–3), 147–170. https://doi.org/10.1504/IJIE.2017.088095</p> <p>Langer, L., Tripney, J., & Gough, D. (2016). The science of using science: Researching the use of research evidence in decision-making. http://eppi.ioe.ac.uk/cms/Portals/0/PDF%20reviews%20and%20summaries/Science%202016%20Langer%20report.pdf?ver=2016-04-18-142701-867</p> <p>Mincu, M. (2013). <i>Teacher Quality and School improvement: What is the role of research?</i>. (BERA Inquiry paper 6). 10.13140/RG.2.2.32009.24169.</p> <p>Nelson, J. & Campbell, C. (2019). Using evidence in education. In A. Boaz, H. Davies, A. Fraser, & S. Nutley (Eds.), <i>What works now? Evidence-informed policy and practice</i> revisited (pp. 131–149). Policy Press.</p> <p>Nelson, J., & O'Beirne, C. (2014). <i>Using evidence in the classroom: What works and why?</i> http://dera.ioe.ac.uk/id/eprint/27753.</p> <p>Park, V. (2018). Leading data conversation moves: Toward data-informed leadership for equity and learning. <i>Educational Administration Quarterly</i>, 54(4), 617–647. https://doi.org/10.1177/0013161X18769050</p> <p>Sharples, J. (2013). <i>Evidence for the Frontline: A report for the alliance for useful evidence</i>. https://www.alliance4usefulevidence.org/assets/EVIDENCE-FOR-THE-FRONTLINE-FINAL-5-June-2013.pdf</p> <p>Sharples, J., Albers, B., Fraser, S., & Kime, S. (2018). <i>Putting evidence to work: A school's guide to implementation: guidance report</i>. https://educationendowmentfoundation.org.uk/public/files/Publications/Implementation/EEF_Implementation_Guidance_Report_2019.pdf</p> <p>Spencer, T. D., Detrich, R., & Slocum, T. A. (2012). Evidence-based practice: A framework for making effective decisions. <i>Education and Treatment of Children</i>, 35(2), 127–151. https://doi.org/10.1353/etc.2012.0013</p> <p>Stoll, L., Greany, T., Coldwell, M., Higgins, S., Brown, C., Maxwell, B., Stiell, B., Willis, B., & Burns, H. (2018a). <i>Evidence-informed teaching: Self-assessment tool for teachers</i>. https://iris.ucl.ac.uk/iris/publication/1533174/1</p> <p>Stoll, L., Greany, T., Coldwell, M., Higgins, S., Brown, C., Maxwell, B., Stiell, B., Willis, B., & Burns, H. (2018b). <i>Evidence-informed teaching: Self-assessment tool for schools</i>. https://iris.ucl.ac.uk/iris/publication/1533172/1</p> <p>Tripney, J., Gough, D., Sharples, J., Lester, S., & Bristow, D. (2018). <i>Promoting teacher engagement with research evidence</i>. https://www.wcpp.org.uk/wp-content/uploads/2018/11/WCPP-Promoting-Teacher-Engagement-with-Research-Evidence-October-2018.pdf</p>
Policy	<p>Boaz, A., & Nutley, S. (2019). Using evidence. In A. Boaz, H. Davies, A. Fraser, & S. Nutley (Eds.), <i>What works now? Evidence-informed policy and practice</i>, (pp. 251–277). Bristol, UK: Policy Press.</p> <p>Boswell, J. (2014). 'Hoisted with our own petard': Evidence and democratic deliberation on obesity. <i>Policy Sciences</i>, 47(4), 345–365. DOI:10.1007/s11077-014-9195-4.</p> <p>Breckon, J. (2016). <i>Using research evidence: A practice guide</i>. London, UK: Alliance for Useful Evidence.</p> <p>Breckon, J., Hopkins, A., & Rickey, B. (2019). <i>Evidence vs democracy: How 'mini-publics' can traverse the gap between citizens, experts, and evidence</i>. London, UK: Alliance for Useful Evidence.</p> <p>Gluckman, P. (2011). <i>Towards better use of evidence in policy formation: A discussion paper</i>. Auckland, NZ: Office of the Prime Minister's Science Advisory Committee.</p> <p>Hawkins, B., & Parkhurst, J. (2016). The 'good governance' of evidence in health policy. <i>Evidence & Policy</i>, 12(4), 575–592. DOI: 10.1332/174426415X14430058455412.</p> <p>Hudson, C. G. (2009). Decision making in evidence-based practice: Science and art. <i>Smith College Studies in Social Work</i>, 79(2), 155–174. DOI: 10.1080/00377310902832334.</p> <p>Langer, L., Tripney, J., & Gough, D. (2016). <i>The science of using science: Researching the use of research evidence in decision-making</i>. London, UK: EPPI-Centre, Social Science VineResearch Unit, UCL Institute of Education, University College London.</p> <p>Leir, S., & Parkhurst, J. (2016). <i>What is the 'good use' of evidence for policy</i>. London, UK: London School of Hygiene and Tropical Medicine.</p> <p>Levitt, R. (2013). <i>The challenges of evidence: Provocation paper for the Alliance for Useful Evidence</i>, NESTA. London, UK: Alliance for Useful Evidence.</p> <p>Levitt, R., Martin, S., Nutley, S., & Solesbury, W. (2010). <i>Evidence for accountability: Using evidence in the audit, inspection and scrutiny of UK government</i>. London, UK: Nuffield Foundation</p>

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Sector	Papers Included for Synthesis
	<p>Moore, P. (2006). <i>Iterative Best Evidence Synthesis Programme: Hei Kete Raukura. Evidence based policy project report, August 2006</i>. Wellington, NZ: Ministry of Education.</p> <p>Nutley, S., Walter, I., & Davies, H. T. O. (2003). From knowing to doing: A framework for understanding the evidence-into-practice agenda. <i>Evaluation</i>, 9(2), 125-148.</p> <p>Nutley, S., Walter, I., & Davies, H. T. O. (2007). <i>Using evidence: How research can inform public services</i>. Bristol, UK: Policy Press.</p> <p>Parkhurst, J. (2017). <i>The politics of evidence: From evidence-based policy to the good governance of evidence</i>. Abingdon, UK: Routledge.</p> <p>Puttick, R. (Ed.). (2011). Using Evidence to Improve Social Policy and Practice: Perspectives on how research and evidence can influence decision making. NESTA. https://media.nesta.org.uk/documents/evidence_for_social_policy_and_practice.pdf</p> <p>Puttick, R. (2018). Mapping the Standards of Evidence used in UK social policy. https://media.nesta.org.uk/documents/Mapping_Standards_of_Evidence_A4UE_final.pdf</p> <p>Rutter, J., & Gold, J. (2015). <i>Show your workings: Assessing how government uses evidence to make policy</i>. London, UK: Institute for Government.</p> <p>Sense about Science (2018). <i>Transparency of evidence: A spot check of government policy proposals July 2016 to July 2017</i>. London, UK: Author.</p> <p>Smith, K. E. (2013). <i>Beyond evidence-based policy in public health: The interplay of ideas</i>. Basingstoke, UK: Palgrave Macmillan.</p> <p>Smith, K. E. (2017). Beyond 'evidence-based policy' in a 'post-truth' world: The role of ideas in public health policy. In J. Hudson, C. Needham, & E. Heins (Eds.), <i>Social policy review 29. Analysis and debate in social policy, 2017</i>, (pp. 151-175). Bristol, UK: Policy Press.</p> <p>Vine, J. A. (2018). Standardising Standards: The Case for Shared Standards in the Evidence Sector. https://www.alliance4usefulevidence.org/assets/2018/10/A4UE-Standardising-standards-v2-2.pdf</p>