Educational Research and Innovation

Who Really Cares about Using Education Research in Policy and Practice?

DEVELOPING A CULTURE OF RESEARCH ENGAGEMENT

OECD

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BETTER POLICIES FOR BETTER LIVES

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Foreword

Education research is the cornerstone of effective policies and practices that can in turn drive societal progress and empower individuals for the future. The Centre for Educational Research and Innovation (CERI) is dedicated to supporting countries with timely research insights and forward-looking approaches to help them design robust and future-ready education systems. At the heart of CERI's mission is the recognition of education research as a fundamental pillar for achieving quality education. The work conducted in the *Strengthening the Impact of Education Research* project contributes to that mission by providing evidence-based insights and fostering a greater understanding of how countries can reinforce policy makers' and practitioners' engagement with education research.

After its first report *Who Cares About Using Education Research in Policy and Practice?* that mapped the overall landscape of actors and mechanisms reinforcing research use, the project's second report *Who Really Cares About Using Education Research in Policy and Practice?* delves into understanding how to develop a culture of research engagement. It brings together leading experts who provide cutting-edge insights and international experiences from the realms of education policy and practice. The analyses of data collected from over 30 Organisation for Economic Co-operation and Development (OECD) systems and examples of deep research engagement from across the world provide policy makers, practitioners and other educational stakeholders with concrete tools and processes to draw on and collectively nurture a culture of research engagement.

Acknowledgements

This is the second publication developed by the OECD's *Strengthening the Impact of Education Research* project team – Nóra Révai (project leader), Melissa Mouthaan, José Manuel Torres, Jordan Hill, Mykolas Steponavičius and Aurelija Masiulytė. This publication would not have been possible without the key contributions of renowned experts, who are supporting the project.

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A special thanks goes to the Flemish community of Belgium and the Netherlands, who hosted one learning seminar each as part of the project. The preparation, participation and outcomes of both seminars made a crucial contribution to four chapters of this book, as well as enriching the insights of the project team on the topic more generally.

As with the first publication, we remain grateful to all of the education systems that responded to the survey and for the encouragement and support of the CERI Governing Board in the development of the project and this report. Our special thanks also go to those working within the national administrations of Japan, New Zealand, Norway, Portugal, Slovenia and South Africa who kindly gave their time to take part in follow-up interviews.

Additionally, we wish to thank our colleagues within the Centre for Educational Research and Innovation (CERI) and across the OECD. Tia Loukkola, Head of Division, who provided oversight during the process and valuable feedback on the draft report and colleagues in the Directorate for Education and Skills communications team and the Public Affairs and Communications Directorate. Our thanks are extended to Jennifer Allain Young, who edited the publication to ensure coherent and comprehensible reading.

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Policy makers face tough choices when evaluating policy alternatives; it is crucial they weigh up the costs of change and balance the positives versus potential negative economic or political impacts. Should they pursue what is most technically feasible? What is most politically and socially achievable? Or focus on what can be sustainable long term? Policy makers also need to find the right balance between modernising and disruption, foster innovation while recognising the socially highly conservative nature of education, and leverage potential with existing capacity.

But to transform education at scale, a radical vision is not enough. High-quality research and smart strategies need to be in place to make often difficult changes possible. Research can help policy makers lower the political cost of taking action by backing difficult decisions with evidence. And the good news is that our knowledge about what works in education has improved vastly. It is true that digitalisation has contributed to the rise in populism and "post-truth" societies that can work against rational policy making. But more and better data and new analytical tools have also massively expanded the scope and power of comparative social research to create a more evidence-based environment. This has helped drive the development of better policies and teaching practices.

And yet, many barriers remain to the systematic use of educational research in policy and practice. Education research sometimes fails to focus on the questions that are most relevant to policy makers, while research results are not always available in a form intelligible to them. The links between research and practice are equally fraught, and teachers and school leaders face similarly hard decisions to policy makers. Education has yet to become a knowledge sector that can effectively adapt its practices by using research about their effectiveness. In many other fields, people enter their professional lives expecting their practice to be transformed by research, but that is not necessarily the case in education. Far too often, education leaders fail to scrutinise their own practices and their effectiveness. There is, of course, a large body of research about learning but much of it is unrelated to the work of teachers in the classroom. Even the most relevant work has insufficient impact, with practitioners sometimes working in isolation and building their practice on received wisdom about what works.

How, then, can a culture of research engagement be created and nurtured in policy and practice? How can we ensure that continuous professional learning is both a norm and a deliberate strategy in organisations and systems? And how can we move beyond prescribing what teachers should do, given that this is unlikely to transform teachers' practices?

The answer to these questions hinges firstly on leadership. Effective leadership within organisations ensures that research and innovation are tightly connected and work towards systematic improvement. It ensures a consistent understanding of the respective roles and impact of the various structures, processes and approaches, and how they connect and complement each other. Secondly, it also lies in effective system-level co-ordination of research generation, which is fundamental to building a robust knowledge base and increasing engagement with this evidence.

This report shows that this can be achieved. Examples from across the world illustrate how quality research can and is making a difference. But much more can be done. Our schools and universities of today are our economy and society of tomorrow. Only bold, innovative and evidence-based education policy and practice will help develop better and more equitable economic outcomes, greater social participation and stronger democracies.

Andreas Schleicher,

OECD Director for Education and Skills,

Special Advisor on Education Policy to the Secretary-General at the OECD

Executive Summary

The OECD *Strengthening the Impact of Education Research* project uncovered a rich landscape of actors and mechanisms striving to reinforce the quality, production and use of education research in OECD countries. Yet, it also revealed important barriers to the use of research in policy and practice, as well as a lack of systems approaches to increasing research engagement.

This second report of the project explores how a culture of research engagement can be created and nurtured. It brings together leading experts who provide insights into cutting-edge research in the field and international experience gathered from both education policy and practice. In addition, the report provides further analyses of data collected from over 30 systems through an OECD policy survey. The analysis explores what a culture of research engagement might look like in different systems, organisations and contexts. One of the ambitions of this report is to bring to life the concept of a "systems approach" by providing insights into what this might entail. As a result, this report reflects on how organisational and systemic capacity for a quality use of research in policy making and practice can be systematically built. It features concrete examples of deep forms of research engagement and systems thinking, presenting case studies, analyses, tools and processes.

Many systems are still missing a shared understanding of what constitutes thoughtful engagement with research, and the basic conditions to enable it

A culture of research engagement is founded on a shared and deep understanding of what research evidence and "thoughtful engagement" with it mean. Data suggest that most systems are still missing this shared understanding. Genuine motivation, a willingness to challenge one's views, curiosity and trust are key ingredients of thoughtful engagement with research. To nurture these, systems need to allocate time and stable funding for research generation, knowledge mobilisation and engagement. These resources can be used to create stable relationships and quality interactions between actors that promote thoughtful engagement with research.

Novel approaches and well co-ordinated policy mechanisms can help build a robust knowledge base

There is no thoughtful engagement with research without appropriate research in the first place. Well-designed policy mechanisms to co-ordinate the production of education research can help address gaps in research and issues around accessibility and relevance. Mechanisms that support systematic evidence synthesis are still insufficient in education despite wide recognition of the importance of synthesis in reinforcing research engagement. Novel research approaches that promote collaboration, such as stakeholder involvement in research generation, show promising results in increasing research engagement.

System-level co-ordination of research generation is fundamental to building a robust knowledge base and increasing engagement with it. This can include systematically identifying research needs and gaps and establishing a strategy for education research that incorporates both production and use. However, it is often less clear how well these mechanisms work. Furthermore, their effectiveness lies not only in their

quality but also in their complementarity and alignment with systemic factors, such as incentives and the policy environment.

Professional learning should be better supported to ensure all actors have the right knowledge and skills for research engagement

Professional learning should be both a norm and a deliberate strategy in organisations and systems that aspire to develop a strong research engagement culture. Yet, practitioners' and policy makers' research-engagement skills are not yet widespread, and they lack appropriate learning opportunities. On the positive side, a variety of tools and approaches have been developed to promote such learning. There are tools to build policy makers' and practitioners' research-related skills for research; and tools to improve organisational and system-level capacity for greater research engagement. In many cases, there is a strong degree of innovation in their design. This report showcases competence frameworks, models of research use and knowledge mobilisation, and learning conversations and collective evidence appraisal by stakeholders, among other tools and approaches. Overall, the analysis highlights the need to better leverage existing tools.

Structures and processes that support research engagement should be tested more widely

An increasing number of structures and processes are designed to bridge the gaps between research, policy and practice communities. Examples featured in this report, such as schemes that promote greater proximity between research and policy communities, policy action research and arts-based approaches, show emerging evidence on creating structured and quality interactions among actors, driving their professional development and supporting research generation, mobilisation and engagement in organisations and systems. Adapting and testing these structures and processes across country contexts and sectors could help build knowledge on their impact and effectiveness, including the conditions for their transferability.

Coherent leadership is needed to drive research engagement towards systematic and system-wide improvement

Leadership is key in role modelling behaviours and creating the necessary conditions and incentives for research engagement. This includes establishing a culture of trust and continuous learning in which individuals and teams feel they can share challenges and experiment with new methods. Good leadership within organisations ensures that research and innovation are tightly connected and work towards systematic improvement.

A system-level understanding of the respective roles and impact of the various structures, processes and approaches, and how they connect and complement each other, is still largely lacking in many systems. This understanding is necessary to map missing links in the research ecosystem and identify co-ordination strategies that can create coherence and support knowledge mobilisation and research engagement across the whole system. Coherent leadership across the whole system can ensure there is a shared understanding and vision of research engagement and its role in improving education policy and practice. Coherence needs strong connections between different levels of leadership: schools, local, regional and national. System leaders must actively work to address perverse incentives and other systemic factors that are detrimental to building a strong culture of research engagement.

Part I Conceptual landscape

1 Building a culture of research engagement in education

Melissa Mouthaan, OECD

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This chapter introduces the theme of the report: developing a culture of research engagement. It discusses key concepts and lessons from the knowledge mobilisation literature. In particular, the chapter briefly explains what a culture of research engagement means at the organisational and system level and identifies two cross-cutting themes in developing such a culture. The two themes – developing skills and capacity and creating stable structures and processes – are then introduced along with a set of questions the remaining chapters in this publication will be exploring. Finally, the chapter outlines the structure of the report.

Introduction

In today's dynamic and rapidly evolving world, evidence-informed decision making has emerged as a cornerstone in guiding effective education policy and practice. Research evidence in education serves as a compass, directing stakeholders towards informed choices that maximise student outcomes and drive educational progress. Evidence-based approaches empower educational systems to address inequities, enhance teaching and learning methodologies, support the efficient use of resources, and foster continuous improvement. Ultimately, they nurture the development of well-rounded individuals equipped with the knowledge and skills needed to become responsible and ethical agents of change to reshape our 21st century society in the face of major challenges.

However, harnessing research evidence in policy making and practice poses formidable challenges despite countries' significant investments (OECD, 2022[1]). The OECD Centre for Educational Research and Innovation (CERI) has been supporting countries in overcoming these challenges since the late 1990s. Following an expansion of actors over the past two decades with an explicit role to reinforce research impact – from brokerage agencies and what works centres to roles such as government researchers, research champions in schools and ministries – CERI renewed its effort to help understand "what works in what works" by launching the *Strengthening the Impact of Education Research* project in 2021. As a first step, it mapped countries' mechanisms and barriers to facilitate research use, and the diverse set of actors that play a role in this. The first results were published in the *Who Cares About Using Education Research in Policy and Practice* (OECD, 2022[1]). The present report continues that discussion and delves into the question of how we can develop a culture of using education research.

Creating a culture of evidence use is often highlighted as a key ingredient for strengthening research impact. However, what it really means and how we can establish or change the culture often remains implicit. For example, the term culture is frequently used as a complementary element to structures. Structures usually refer to something concrete, like establishing a brokerage agency (OECD, 2007[2]), creating a department in a ministry or setting up a formal network (OECD, 2022[1]), while culture is an elusive concept. Yet, researchers, experts and stakeholders appear to agree about the critical importance of this intangible factor to maximise the impact of education research.

There is a consensus that more effective research mobilisation requires all actors to develop or hone certain skills (Cordingley, 2016[3]). Practitioners and policy makers must be able to access, understand and interpret research, and translate it for their context. For research evidence to be more relevant for policy and practice, researchers need to understand the context of policy and practice. Actors also need to be able to communicate with each other, which often requires skilled facilitators who can span boundaries across different communities. In addition to individual skills, the collective capacity of teams and organisations and system-level capacity are necessary to create and nurture research engagement. Such skills and capacity have been widely explored in the health sector (Davies, Nutley and Mannion, 2000[4]; Belkhodja et al., 2007[5]), but it is a more recent field of study in education.

This publication intends to open the black box of evidence use culture by exploring the following questions:

- What do we mean by a culture that supports research engagement? What are the characteristics of such a culture and how can we develop these in educational organisations and at the system level?
- How can we develop individuals' and teams' skills, and organisational and systemic capacity for the quality use of research in policy making and practice?
- Which structures and processes support the development (or transformation) of an organisational and system-level culture for better research engagement?

This report addresses these questions by examining two distinct levels: system and organisational. System refers to all elements – regulations, guidelines, structures, incentives, values, standards, etc. – that

characterise aspects of research production and engagement at the level of an education system in a country or sub-national entity (e.g. state, province). Organisational refers to a wide range of educational organisations: schools, school boards, inspectorates, ministries of education, executive agencies, etc. Organisations and systems are, of course, made up of individuals. Individuals' characteristics, roles and relationships are thus key elements of both organisational and system-level cultures and are discussed across both levels.

This report presents cutting-edge research from leading experts in the field of knowledge mobilisation and draws on analyses conducted as part of the OECD/CERI *Strengthening the Impact of Education Research* project. This includes an analysis of policy survey data collected in 2021 (Box 1.1) from education ministries in 37 systems, insights from two expert meetings organised in 2022, and two learning seminars held in the Netherlands and Flanders in 2022 (see Box 1.2).

Box 1.1. The *Strengthening the Impact of Education Research* policy survey

Survey design and data

The OECD *Strengthening the Impact of Education Research* policy survey – conducted from June to September 2021 – collected data on the mechanisms used to facilitate research use in countries/systems. Overall, 37 education systems from 29 countries[1] responded to the survey. Responses represent the perspective of ministries of education at the national or sub-national (state, province, canton, etc.) level.

The survey covered the following themes:

- actors, mechanisms and relationships that facilitate the use of research in policy making and practice
- characteristics of policy makers' use of research
- drivers of and barriers to research use in policy and practice; covering issues of mindset and culture, resources, skills and capacity, as well as learning opportunities
- actors and mechanisms of research production, including funding for research, the accessibility and relevance of research, the involvement of actors and their incentives.

As a follow-up to the survey, six countries[2] were selected for further data collection through semi-structured interviews to ensure that survey data were correctly interpreted and to better understand good practices and challenges with regard to using research in policy and practice.

Policy makers in the survey

The *Strengthening the Impact of Education Research* policy survey targeted the highest level of decision making in education (ministry/department of education). In federal systems, this corresponds to the state (province, canton, autonomous community, etc.) department. Ministries were asked to co-ordinate the response across departments.

The follow-up interviews revealed that ministries of education had various definitions of policy makers. Interviewees most commonly associated the term with high-level ministry officials such as directors, deputy directors and director generals. Overall, there was a high degree of recognition that policy makers are those with influence over the policy-making process, rather than those tasked with implementing policies. Some systems, however, took a broader view, considering all those working at the ministry of education, as well as individuals in the executive and legislative branches of government.

As a result of the different understandings, comparisons between systems in policy survey data should be made with caution.

Meaning of research

Education research in the *Strengthening the Impact of Education Research* project is understood as a form of systematic investigation of educational and learning processes to increase or revise current knowledge. This is consistent with most definitions of research (e.g. Langer, Tripney and Gough (2016[6])). This conceptualisation recognises that research need not necessarily be conducted within academia or by researchers only. However, this definition does not consider (raw) information and data as "research" as such – only when these are analysed and investigated for a purpose.

The follow-up interviews to the survey showed that, overall, respondents had a similar understanding of research, although some placed a stronger focus on certain types of research. For example, some had primarily the analysis of international tests and surveys in mind; others were more focused on what works type of evidence.

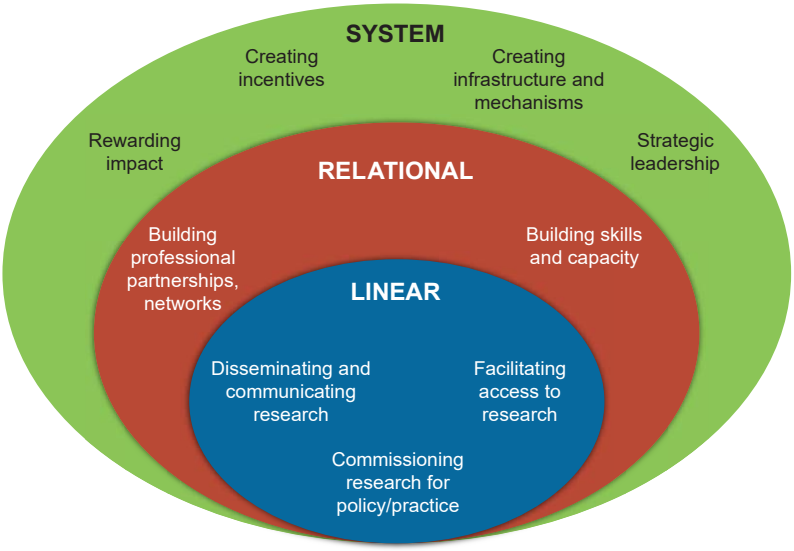
1. OECD countries: Austria, Belgium (Flemish and French Communities), Canada (Quebec, Saskatchewan), Chile, Colombia, Costa Rica, the Czech Republic, Denmark, Estonia, Finland, Hungary, Iceland, Japan, Latvia, Lithuania, the Netherlands, New Zealand, Norway, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland (Appenzell Ausserrhoden, Lucerne, Nidwalden, Obwalden, St. Gallen, Uri, Zurich), the Republic of Türkiye, the United Kingdom (England) and the United States (Illinois). Non-member countries: the Russian Federation and South Africa.
2. Japan, New Zealand, Norway, Portugal, Slovenia and South Africa.
Source: OECD (2022[1]), *Who Cares about Using Education Research in Policy and Practice?* http://dx.doi.org/10.1787/d7ff793d-en.

This chapter first discusses key conceptual lessons from the knowledge mobilisation literature. It then provides a brief account of what a culture of research engagement means at the organisational and system levels and identifies two cross-cutting themes in developing such a culture. The two themes – developing skills and capacity and creating stable structures and processes – are then introduced along with a set of questions the remaining chapters in this publication will explore. Finally, the chapter outlines the structure of the report with a brief description of its parts and chapters.

A systems approach to research engagement: Rendering the abstract concrete

The three approaches to knowledge mobilisation, linear, relational and systems, presented in Best and Holmes' (2010[7]) seminal paper have been applied to analyse knowledge mobilisation strategies in different public sectors. Studies have made it clear that neither linear research transfer and dissemination mechanisms nor relational ones that focus on partnerships and network building are sufficient by themselves to reinforce the use of research in policy and practice (Campbell et al., 2017[8]; Langer, Tripney and Gough, 2016[6]). Complex systems characterised by multiple actors interacting at multiple levels and non-linear feedback loops (Burns and Köster, 2016[9]) require systems approaches that act on several elements simultaneously. However, linear, relational and systems approaches should not be seen as mutually exclusive but rather as embedded in one another (Figure 1.1). Generating, synthesising and disseminating evidence is still fundamental, as are relationships among actors. These should be part of a systems approach that includes co-ordination mechanisms at the system level (Maxwell, Sharples and Coldwell, 2022[10]). Yet, policy survey data showed that linear and relational mechanisms still dominate the landscape of research mobilisation in most systems (OECD, 2022[1]).

Figure 1.1. Linear, relational and systems approaches to knowledge mobilisation



Source: Adapted from Boaz (2021[11]), *Push or pull: What does harnessing the use of research involve and imply?*

The first report of the project suggested a few avenues to move forward. It posited that changing the terms we use to speak about knowledge mobilisation will influence the discourse and may ultimately shape our thinking and actions. Moving away from terms such as knowledge transfer, translation and dissemination may help broaden the focus from linear mechanisms. Although less conspicuous, the research production and use dichotomy also reflects linear thinking to an extent, suggesting actors' roles are limited to these categories. Yet it is not uncommon now for different actors to be involved in some way across stages of research production. In addition, research use refers to the direct and straightforward application of research. However, in reality, research evidence can rarely be applied in such a way. More often, teachers and policy makers interpret evidence, mixing it with their contextual knowledge, values and dispositions. Applying research recommendations directly, for example, implementing an evidence-based pedagogical intervention, is only one type of research use. It is not necessarily easy to retrace the original research findings in actions – teaching practices, policy design and implementation – because it has transformed through the process of engagement. Although it is difficult to clearly distinguish between use and engagement (Coldwell et al., 2017[12]), the term engagement reflects an active role from practitioners, policy makers and other actors who draw on research in their work. In the context of educational practice, Rickinson et al. (2022, pp. 141-142[13]) define quality research use as:

> *… thoughtful engagement with and implementation of appropriate research evidence, supported by a blend of individual and organisational enabling components within a complex system. […] 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.*

This second report makes an effort to use terms that better reflect systems thinking and mutuality.

The first report called for unpacking what research engagement means in practitioners' and policy makers' contexts. It recognised that creating relationships and dialogue among actors is necessary but not enough in itself. Similarly, co-producing research holds many promises, but it will not automatically result in high-quality research engagement and generation.

Finally, the first report also proposed a stronger focus on some key elements of systems approaches: strategic leadership, incentives and resources. While it provided a few examples, it did not show what these elements should (or can) look like to reinforce research engagement in policy and

practice. Applying the embedded model of approaches to knowledge mobilisation shown above also means that the various pieces should be aligned and co-ordinated in order to develop a culture of research engagement.

This second report aims to move from abstract to concrete and from superficial or rough indicators to a deep understanding of what systems thinking for research engagement looks like. It brings together case studies and analyses that give concrete examples of strong forms of engagement, showing what creating a culture of research engagement looks like.

What do we mean by a culture of research engagement?

While the term culture in the context of research use is elusive, there is a substantive body of literature on organisational culture specifically relating to this theme studied extensively in the health sector, and more recently in education as well. However, a culture at the system level is often loosely defined or referred to implicitly.

Culture at the organisational level

To support policies, we need to consider whether culture is inherent in nature or an attribute of an organisation or system (Davies, Nutley and Mannion, 2000[4]). If we consider culture to be an attribute it suggests that culture can be transformed, so it is meaningful to identify levers of change and provide recommendations. Some argue that the truth lies in between: an organisation's culture emerges to some extent unpredictably from elements of the organisation, which implies that while it is not fully controllable, its characteristics can be described and assessed (Davies, Nutley and Mannion, 2000[4]). From a policy perspective, it may seem desirable for culture to be something we can transform or shape towards a given goal. The various chapters of this publication will probe this question and investigate the enablers of a strong culture of research engagement.

Organisational culture is often described as "the way things are done around here, as well the way things are understood, judged, and valued" (Davies, Nutley and Mannion, 2000, p. 112[4]). In this sense, organisational culture includes shared values, beliefs, attitudes, norms and standards, and language (Davies, Nutley and Mannion, 2000[4]; Belkhodja et al., 2007[5]). Concretely, in the context of educational practice, research use being a norm embedded in a school's way of working can involve:

- promoting research use in the school's policy and planning documents
- having an ethos that encourages staff to reflect on their practice and try research-based approaches
- having a deliberate strategy to advance evidence-informed practices (Rickinson et al., 2022[13]).

These can easily be made to fit the policy context: similar norms can be interpreted for a ministry, executive agency, inspectorate or local authority. In terms of attitudes and values, a research use culture reflects openness to research: "research constitutes a preferred source of information" (Belkhodja et al., 2007, p. 392[5]). It also demonstrates "individual and organisational commitment to promote research culture", which is reflected in the intensity of research engagement (Belkhodja et al., 2007, p. 392[5]).

Organisational culture can be analysed at the level of individuals (people), and relationships and interactions between them (Belkhodja et al., 2007[5]). People's skills, mindsets and relationships can all be enablers of (or barriers to) quality research engagement (Rickinson et al., 2022[13]). In addition, organisational culture emerges from and is shaped not only by people and their interactions, but also by organisational structures and infrastructure, processes, leadership, and resources (Davies, Nutley and Mannion, 2000[4]; Rickinson et al., 2022[13]; Slade, Philip and Morris, 2018[14]). Individual and organisational factors all mutually influence one another. In addition, organisational culture can also be influenced by

external factors: the status and identity of the profession, regulations, incentives, systemic mechanisms, etc. (Rickinson et al., 2022[13]; Davies, Nutley and Mannion, 2000[4]).

Culture at the system level

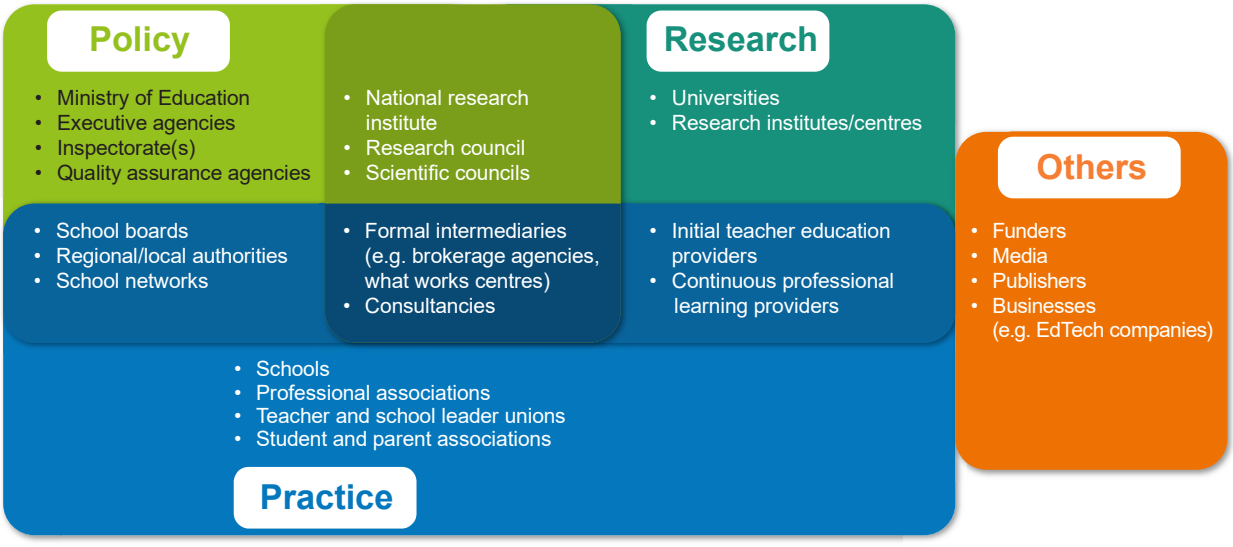
It has long been recognised that people's and organisations' level and quality of research engagement are strongly influenced by systemic factors (Slade, Philip and Morris, 2018[14]). Recent literature on knowledge mobilisation speaks about "evidence ecosystems" and unanimously points to the necessity of a system-level culture that recognises the importance of generating quality evidence and actively promotes its use [e.g. (Gough, Thomas and Oliver, 2019[15]; Boaz and Nutley, 2019[16]; Sharples, 2013[17]; Maxwell, Sharples and Coldwell, 2022[10])]. A system-level culture is also reflected in policy-oriented literature, such as the work of international organisations and policy documents at the national level. To cite recent examples, the OECD/CERI's work on Governing Complex Education Systems (Burns and Köster, 2016[9]; Burns, Köster and Fuster, 2016[18]) and Strategic Education Governance highlight the following as key elements of knowledge governance at the system level:

- promoting the production of adequate evidence
- mobilising produced evidence for convenient use
- stimulating a culture of evidence use
- nurturing evidence-related capacities (Shewbridge and Köster, 2019[19]).

The United Nations Educational, Scientific and Cultural Organization (UNESCO) also places evidence generation and use high on the education agenda (NORRAG, 2022[20]; IIEP-UNESCO, 2021[21]). Organisations with an explicit mission, and in some cases government mandate, to promote and strengthen the generation and use of research evidence also emphasise systemic factors (Education.org, 2021[22]; Maxwell, Sharples and Coldwell, 2022[10]).

However, describing the characteristics of a system-level culture and identifying the "key nodes" that have a large impact on research engagement is much more difficult. As opposed to the clearly delimited nature of an organisation, an education system consists of a large number of actors whose involvement with and in research has been expanding over the past decades (Burns and Köster, 2016[9]). Figure 1.2 represents a set of potential actors that may all influence the system-level culture. The group of actors and their roles vary across systems.

Figure 1.2. Possible landscape of educational actors influencing research engagement



Similar to organisational culture, a system-level culture includes the values, attitudes, norms and standards around research itself, its production and engagement with it. This may be reflected in explicit research policies and strategies; regulations around evidence use in policy and practice, for instance, through systems of accountability; links among research, policy and practice actors; incentives for actors, etc. (Slade, Philip and Morris, 2018[14]). The extent of alignment (coherence and co-ordination) of the various elements may also reflect the strength of a research engagement culture at the system level (Godfrey and Brown, 2018[23]; Maxwell, Sharples and Coldwell, 2022[10]).

Given the large number of actors, the question is whether we can actually speak about *a* system-level culture as opposed to multiple cultures. This question is relevant even within a single organisation. Martin [(1992[24]) in Davies, Nutley and Mannion (2000[4])] talks about cultures that may be integrated (with a wide consensus about basic beliefs), differentiated (with multiple, incompatible views across groups) and fragmented (with no shared norms and large differences even within sub-groups). The diversity of actors at the level of a system likely implies differentiated cultures at best, if not fragmented.

A commonly cited obstacle to research mobilisation is, in fact, the different cultures of the research, practitioner and policy communities (Locock and Boaz, 2004[25]; Shewchuk and Farley-Ripple, 2022[26]; Cooper, 2014[27]). These cultures involve different understandings of research evidence itself, its relevance and use (Lomas, 2007[28]; Ward, House and Hamer, 2009[29]; OECD, 2022[1]). Motivations for producing research and engaging with it also differ and the time frames for corresponding processes are not aligned, or even incompatible (OECD, 2022[1]). Various strategies have been suggested and tested to bridge this cultural gap, ranging from creating formal intermediary organisations and roles that span boundaries and mediate between the different communities to collaborative research production involving researchers and practitioners/policy makers. While some of these initiatives show promising results (Nutley, Walter and Davies, 2009[30]; Wiggins et al., 2019[31]; Gu et al., 2021[32]; Langer, Tripney and Gough, 2016[6]), there is a general lack of understanding of their effectiveness and impact (Torres and Steponavičius, 2022[33]; Oliver et al., 2022[34]).

Strengthening a system-level culture of research engagement thus requires understanding the variety of subcultures and finding ways in which these can be bridged. Notably, the various efforts and debates have laid bare the absence of adequate incentives for researchers to engage policy makers and vice versa, while prompting systems to consider how they can better incentivise processes of mutual exchange and fruitful engagement. Clearly, national policies of education, but also policies on science, research and innovation, play an important role in this. Other actors, such as brokerage organisations, policy networks and research councils, can also be system leaders.

Two emerging themes

Two broad cross-cutting themes seem to be key for both an organisational and system-level culture of research engagement. These themes emerged from the 2022 OECD learning seminars (Box 1.2) specifically with respect to research engagement in policy, but they can be applied to the practice context too. The first relates to human resource strategies to build individual and collective competences for better research engagement and provide appropriate professional learning and development. The second theme was identifying, describing, creating and maintaining stable structures and processes to support the development of a culture of research engagement.

Box 1.2. *Strengthening the Impact of Education Research* learning seminars

The *Strengthening the Impact of Education Research* learning seminars are part of the CERI learning seminars series. They are in-person, 1.5-day events with ~25-30 participants from ~5-7 countries that provide extensive opportunities for reflection, critical enquiry and exchange.

Two learning seminars were held in 2022 that focused on empowering civil servants and policy organisations to use research systematically and *well* in policy. The host countries, the Netherlands and Belgium (Flanders), identified similar challenges to the systematic use of education research in policy making and decided to work together and focus on civil servants' skills and collective civil service professionalism to address these. Finland, Ireland and Norway participated as peer countries.

Two evidence journeys in policy making

- The Netherlands analysed how it used evidence in the curriculum revision process using the "Quality Use of Research in Education" (QURE) framework.
- Flanders presented the evidence use journey in the process of introducing standardised testing using the OECD Strategic Education Governance framework as an analytical lens.
- In both countries, a diverse panel of stakeholders provided insight into the reality of research use from different perspectives.

Two themes for creating a culture of evidence use

Two themes emerged in the first seminar and were explored in depth in the second:

- human resource strategies to build collective civil service professionalism
- stable structures and processes for a cumulative knowledge base.

How can we develop skills and capacity for a systematic and quality engagement with research?

Building a culture of research engagement requires investing in people to ensure the right skills and capacity, in the right measures, within and across organisations of practice, and policy to systematically and thoughtfully engage with research. There are promising developments in this area and thus ample scope for mutual peer learning – both across countries and between policy- and practice-oriented organisations.

Within *ministries*, there has been renewed debate on civil service professionalism focusing on the individual and team competences needed for *civil servants* to engage well with research, and to use research evidence thoughtfully in decision making. In many cases, this has started with improving research literacy among policy makers. As Oliver and Cairney (2019[35]) highlight, a strong understanding of research evidence encompasses an understanding of the quality and limitations of evidence and research tools, and what research(ers) can (and can't) deliver. A good understanding of different research tools can better equip civil servants to understand what type of research they require, or how to apply existing research to serve their needs. This includes understanding the limitations of knowledge produced by research: often, knowledge doesn't accumulate to the extent of providing concrete "proof" that a specific policy option should be pursued – nor does it remove the need for deliberation (Cairney, 2019[36]; Topp et al., 2018[37]). Increasingly, systems and organisations are advocating for a shift in how we view the (education) policymaking profession in the 21st century, with varying degrees of research literacy increasingly considered to be a necessary individual or team competence.

In tangent, the debate on research "impact" beyond traditional academic measures has gained a strong foothold in research funding bodies, *universities* and other research institutions. There is now a more general acceptance that evidence-informed policies require a more "policy-literate *research community*" in addition to a research-literate policy community (Tilley and Laycock, 2000, p. 213[38]). Engaging a wider range of audiences – including policy makers and practitioners – is now increasingly expected of researchers in many systems and at different stages of research cycles. To achieve this type of engagement, researchers require the skills to understand the contexts in which their research can be applied and to communicate their findings to relevant audiences, including in formats and through venues that are not traditional to academic cultures. Increasingly, researchers may also be expected to collaborate with policy makers and practitioners and co-produce research.

Many systems are striving to find ways to support *practitioners* in developing their capacity to engage with research. Practitioners need appropriate skills to be able to engage in structured conversations around evidence and to be willing to challenge their existing assumptions explicitly in these conversations. By developing such a skillset, practitioners can feel safe to expose gaps in their own knowledge and become more confident in applying evidence to their practice and trialling new approaches that might emerge from these conversations around evidence.

Finally, it is becoming increasingly clear that closing the gaps between research production and its use in policy and practice requires those who have the skills to act as *brokers, research translators, leaders and boundary spanners* (Cooper, 2014[27]; Shewchuk and Farley-Ripple, 2022[26]). Research knowledge intermediaries are positioned between different communities of research, policy and practice and carry out the types of activities that connect actors between these groups, and that connect evidence with actors, thus bridging different communities. A culture of research engagement will require understanding who the intermediaries are and what skills are needed for intermediary activities.

The chapters in this publication explore the individual and collective skills the various actors – researchers, policy makers, practitioners, brokers and leaders – need to promote a culture of research engagement and develop capacity. They provide examples of tools and learning opportunities that can develop and harness these skills; and of schemes that promote mutual learning and understanding between different communities and actors.

Which structures and processes support a culture of research engagement?

As highlighted above, embedding a research culture in organisations requires a "regulatory environment, governance and organisational structures" but also "systems, tools, resources and time" (Slade, Philip and Morris, 2018, p. 9[14]).

What do we mean by stable structures and processes? We define stable structures as arrangements and mechanisms put in place at the system or organisational level. We emphasise "stable" because creating or adopting a culture of research engagement over time requires long-term mechanisms that are resistant to organisational, staff or leadership changes and political shifts that commonly occur in policy or practice organisations. At the same time, stable does not mean rigid and unchangeable. These structures and processes need to be flexible enough to adapt to changing circumstances, such as emerging needs related to technological progress and other societal phenomena.

Structures and processes are necessary to support the development of successful human resource strategies detailed in the previous section. In many cases, building the skills of different actors to engage with research and with other actors in the education research production landscape is not straightforward, and depends on the structures and processes that exist within organisations and systems that enable such engagement. For example, practitioners need structures within their schools that allow them to participate in conversations around evidence, such as school networks aimed at professional development and mutual

learning. Researchers need structures and processes that enable the development of both the skills and incentives for them to engage broader audiences with their work. Structures and processes are also needed to support the development of a robust knowledge base in education, where such processes could include a long-term research strategy for education research or dialogue platforms for stakeholder engagement.

The *Strengthening the Impact of Education Research* policy survey allowed us to first take stock of the various mechanisms that scale up research use in OECD systems, as well as the commonly reported barriers to the use of research in policy and practice (OECD, 2022[1]). This analysis concluded that despite some systems reporting a reasonable number of mechanisms to support the generation of research relevant for policy and practice, facilitating interactions between actors and supporting their engagement with research, there remain several barriers to generating research and engaging with it (Torres, 2022, pp. 111-112[39]). This implies that something is still lacking, these mechanisms do not (yet) work, are not sufficiently co-ordinated or are simply not enough in themselves. This publication builds on these findings to explore the different types of structures and processes that can support skills and capacity development among different actors for research engagement, improve the accessibility of education research, and allow a better co-ordination of education research production.

The various chapters in this publication explore the structures and processes that support the development of research engagement in different types of educational organisations and at the system level. They help elicit the key characteristics of such structures and processes, and organisational and systemic conditions for them to successfully facilitate research engagement.

Purpose and structure of this report

This report builds on the initial findings of the OECD publication *Strengthening the Impact of Education Research* (OECD, 2022[1]) and further develops the analysis in a few specific ways. First, as with the first publication, a number of leading experts in knowledge mobilisation (evidence-informed policy/practice) present their cutting-edge research. Second, further analysis of the OECD *Strengthening the Impact of Education Research* policy survey is reported. While the first publication provided an initial mapping of structures, processes, relationships and barriers that relate to evidence use in policy and practice, this report seeks to move from the abstract to the concrete. It does so primarily by deepening the analysis of issues, and to present concrete examples and case studies from organisations of policy and practice. The report is structured as follows.

Part I: Conceptual landscape

The first part sets the scene for the report with one introductory chapter.

The current **Chapter 1** presents the rationale for the work and the questions explored in the report.

Part II: A culture of research engagement at the system level

The second part focuses on culture at the system level and includes six chapters.

In **Chapter 2**, *Melissa Mouthaan* and *Mykolas Steponavičius* examine aspects of the generation of education research drawing on the OECD *Strengthening the Impact of Education* policy survey. The authors present policy mechanisms that can help build a high-quality, robust knowledge base in education for policy makers and practitioners, as well as the associated challenges. The chapter discusses different types of education research, their relevance to policy makers and their accessibility. It also looks into the promises of collaborative research to incentivise knowledge mobilisation, outlining the range of open questions about its benefits and drawbacks.

Chapter 3 investigates dimensions of a culture of research engagement in OECD countries drawing on the *Strengthening the Impact of Education* policy survey. *Jordan Hill* and *José Manuel Torres* analyse the key characteristics of a research engagement culture, and policy makers' and practitioners' levels of skills and learning opportunities. The chapter identifies systemic enablers of culture and skills and illustrates promising practices that help strengthen a research engagement culture.

In **Chapter 4**, *Rien Rouw* and *Quirine van der Hoeven* present the use of knowledge in the Dutch Ministry of Education, Culture and Science in a policy process: curriculum revision. The authors use the Quality Use of Research Evidence framework to analyse the evidence use journey. This includes the knowledge infrastructure and types of knowledge that the different stages of the revision process drew upon, and various aspects of the culture of knowledge use within the ministry. The authors assess the appropriateness of knowledge and the levels and quality of policy makers' engagement with the evidence.

In **Chapter 5**, *Jeroen Backs, Bieke de Fraine, Miekatrien Sterck, Jonathan D'haese* and *Katrijn Ballet* examine the use of evidence in the policy process of implementing standardised testing in the Flemish Community of Belgium. The authors use the OECD framework of Strategic Education Governance to analyse the evidence use journey. The chapter first presents the actors and their roles in the use of evidence throughout the process. It then analyses the use of evidence from a governance perspective, considering knowledge governance, capacity in the system, stakeholder involvement and a whole-of-system perspective.

Chapter 6 reflects on the value of analysing evidence use journeys. *Nóra Révai* provides a brief comparative analysis of the Dutch and Flemish evidence use journeys presented in the previous chapters. The chapter explores how the two frameworks enable understanding the culture and skills around evidence use. The chapter also reflects on the analytical exercise itself and describes the Dutch and Flemish analyses as policy action research.

Chapter 7 is a case study of research use in education policy in Norway. *Melissa Mouthaan*, *Håkon Kavli*, *Elisabeth Buk-Berge* and *Kari-Elisabeth Vambeseth Skogen* explore how research has been used to govern and develop the education sector, mapping the landscape of stakeholders and strategies in the policy arena. The chapter presents policy makers' perceptions of the strengths and remaining gaps when it comes to integrating knowledge and evidence in policy. It presents the Norway public sector PhD scheme as a promising initiative aimed to facilitate research use in policy.

Part III: A culture of research engagement within and across research, policy and practice-oriented organisations

The third part focuses on culture within and across research, policy and practice-oriented organisations.

In **Chapter 8**, *Chris Brown* and *Cindy Poortman* examine the potential role of learning conversations, a type of collaborative learning among teachers, in improving teaching and student outcomes. The chapter describes the approach taken in learning conversations to enable practitioners to engage with research evidence, systematically generate and test ideas, and respond to problems or situations that practitioners report. The analysis also reflects on the effectiveness of learning conversations for educational improvement.

In **Chapter 9**, *Amanda Cooper, Michelle Searle, Stephen MacGregor* and *Tiina Kukkonen* discuss arts-informed approaches as a collaborative method used in the context of research-practice partnerships. Drawing insights from three arts-based initiatives in research-practice partnerships in Canada, they argue that such approaches offer a novel way for practitioners and researchers to engage collectively with research while also advancing equity in schools. The chapter proposes a model to assess the principles, strategies and impacts of research-practice partnerships.

In **Chapter 10**, *Elizabeth Farley-Ripple, Hilary Mead* and *Katherine Tilley* present insights drawn from their analysis of four case study schools in the United States classified as “deep users” of research. The chapter explores how these schools enable deep research engagement in their individual contexts. The authors propose that the synergies between culture, leadership, processes and structures are key to the deep use of research in these schools.

Part IV: Forging connections across the organisational and system levels

The fourth part focuses on creating a culture of research engagement across organisations and systems.

Chapter 11 presents five case studies on leadership and culture within and across organisations in Chile, England, Ireland, Norway and Wales. The chapter explores how a culture of thoughtful engagement with knowledge and evidence is created within policy and practice-oriented organisations and the role of networks and leadership in this process. It starts with a short overview of the development of the leadership approaches in such organisations. This is followed by five case studies written by *Toby Greany, Georgina Hudson, Jørn Pedersen, Inger Sofie Berge Hurlen, Huw Morris, John O’Connor* and *Mauricio Pino-Yancovic*. The chapter concludes with an analysis of three common themes that emerge across the case studies while also noting where there is scope for further research in a few key areas.

Chapter 12 draws together the lessons learnt from the previous chapters. *Nóra Révai* and *Melissa Mouthaan* highlight the overall messages that emerged from the research presented in the report. The chapter notes how these messages contribute to a better understanding of effective knowledge mobilisation and takes stock of the remaining challenges for building a culture of research engagement. It ends with a description of how this agenda can be advanced in the coming years.

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Part II A culture of research engagement at the system level

2 Co-ordinating the production of education research: Towards a system-level culture

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Mykolas Steponavičius, OECD

This chapter examines the notion of system-level co-ordination of education research production. The first section presents the challenges that exist in systems to co-ordinate education research production and presents a range of policy mechanisms that can help build a high-quality knowledge base that policy makers and practitioners can draw on. The chapter then discusses different types of education research and their relevance to policy makers and practitioners. It subsequently examines the emerging optimism around collaborative research, in particular the need to incentivise knowledge mobilisation efforts and address stakeholders' divergent knowledge needs. The chapter showcases examples of promising mechanisms that countries have implemented to co-ordinate education research production.

Introduction

Critics have long been concerned about the state of education research, considering it to be of low quality, anecdotal, affected by political or ideological bias, or methodologically weak (Kaestle, 1993[1]; Winch, 2001[2]; Burkhardt and Schoenfeld, 2003[3]; Gorard, See and Siddiqui, 2020[4]; OECD, 2022[5]). According to such critiques, it is both lacking in rigour and of limited use to both policy makers and practitioners. Despite this, there is also a broad acknowledgement of some positive developments in recent years. The earlier claim that education research has an "awful reputation" (Kaestle, 1993[1]) now appears unwarranted: critics have begun to acknowledge the notable increase in the quantity of studies in education and their higher quality, notably with a turn towards more empirical research designs; and, crucially, there has been more extensive collaboration at the international level (van Damme, 2022[6]).

Previous academic work on education research has dedicated considerable attention to these quality issues, such as the relative benefits and appropriateness of different research designs, most notably randomised control trials (Oliver and Boaz, 2019[7]). The issue of research quality in education remains undoubtedly important. This chapter, however, takes a step back from questions around quality and explore how a system-level co-ordination of education research production is an important enabling factor for a strong research engagement culture. We examine two dimensions in particular: 1) the development of a robust knowledge base as a prerequisite to having such a culture; and 2) the question of co-ordination, with the aim of increasing stakeholder involvement in research production. There are strong indications that improving these two elements will help to foster a research engagement culture. Yet, our analysis also notes some of the challenges, uncertainties and knowledge gaps that arise when considering stronger co-ordination in these areas.

A culture of thoughtful engagement with evidence necessitates having a solid, high-quality knowledge base to draw on. Conceptually, this chapter, and the report more generally, considers that building such a knowledge base is not a neat and linear process where new knowledge is systematically added building on existing knowledge. A robust knowledge base is also built through falsification, where previous evidence claims are thrown out if disproven. Working to ensure this knowledge base is part of what can be described as a system-level culture (see Chapter 1). Yet, not enough is done in education to systematically synthesise research, systematically identify research gaps, and systematically review and revise the knowledge base – including rejecting earlier evidence when appropriate (Education.org, 2021[8]; Burkhardt and Schoenfeld, 2003[3]). Which tools and strategies can countries use to develop and support a fit-for-purpose knowledge base: by which we mean a solid evidence base that can drive teaching, school practice and policy making and improve our understanding of the education system as a whole?

While there needs to be more extensive engagement with existing research, and such research needs to be of a sufficient quantity and quality, the question of relevance of research to different groups is central to such an evidence system.

In examining these topics, this chapter addresses the following questions:

- What role is there for co-ordination mechanisms in building a robust knowledge base in education and supporting engagement with this knowledge base?
- What types of education research, evidence and knowledge do policy makers and practitioners most need – and how can we improve their access to these?
- What forms of research production can improve the relevance of research to different communities – and ensure better engagement with research?

This chapter addresses these questions through a review of secondary research and international data collected in the *Strengthening the Impact of Education Research* policy survey (see Chapter 1 for details).

Co-ordinating research production

There are both optimistic and critical accounts of countries' efforts to co-ordinate education research production. The culture of research production in education in countries such as the United Kingdom and the United States is still considered by some educationalists to function "largely for its own purposes", where critics note that education research has so far failed to develop a solid body of agreed research results and detailed evidence of what works (Burkhardt and Schoenfeld, 2021[9]). At the same time, in these countries, as well as others such as Belgium, Chile, the Netherlands, Norway and the Philippines, co-ordination mechanisms have been introduced that aim to build efficient education systems that draw on the best evidence available (Vilalta and Comas, 2021[10]). This chapter refers to "co-ordination of research production" as any policy process deployed to steer research production to achieve a specific goal, such as facilitating research engagement in policy and practice or systematically addressing research needs and gaps. As such, our analysis is limited to education research production that has the perceived purpose of being relevant to policy and practice, which is certainly not the totality of education research. Incentivising education researchers to address these particular needs of policy and practice requires funding programmes for research that are strategic, adequately financed and targeted. In addition to funding mechanisms, systems use various mechanisms to co-ordinate and support education research production. Some of these mechanisms are explained in detail below.

Funding education research

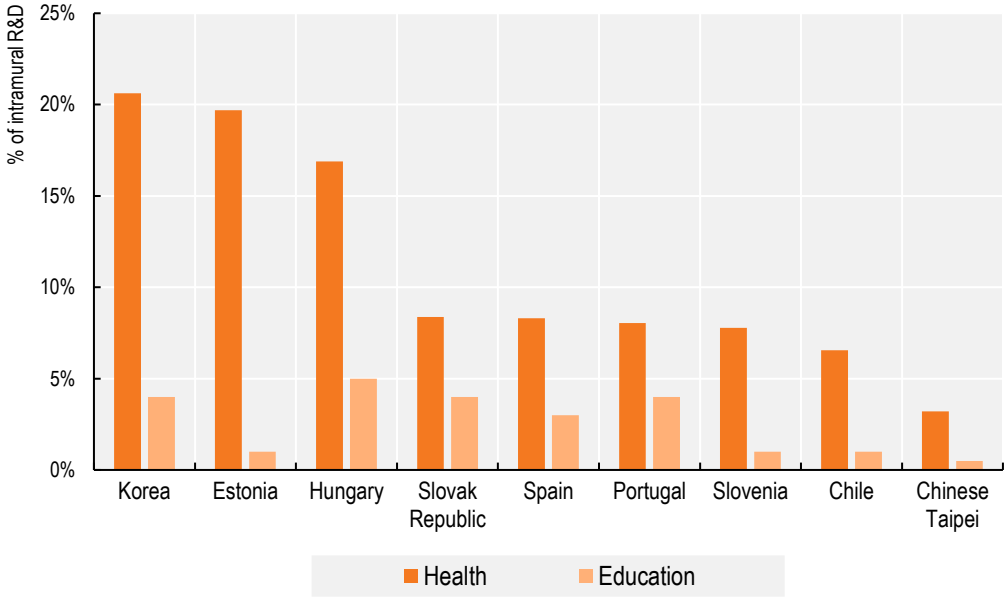
Countries' spending on education research affects the quantity and quality of the knowledge base in education. However, data on education research spending are generally lacking. This suggests first that education research remains a relatively low priority among policy makers in many systems. The available data (see Figure 2.1), nevertheless, indicate that countries allocate only a small fraction of their total research and development (R&D) funding to education. In addition, the data compare this spending with spending on health research and suggest that countries typically spend far less on education research than on health research.

Looking more closely at spending on research in these sectors, in 2014, all countries for which there are data available spent at least twice as much on health as on educational R&D, with Estonia, Korea and Hungary recording the largest difference in spending between the two sectors (see Figure 2.1). These differences are in part due to the presence of commercial incentives for investing in research in the health sector (Education.org, 2021[8]), and the fact that the health sector typically involves extensive R&D with a focus on medical research conducted by actors such as pharmaceutical companies.

This mirrors to some degree the differential in overall spending between the health and education sectors (OECD, 2022[5]). As a percentage of gross domestic product (GDP), many countries typically spend more on healthcare than on education; for instance, healthcare expenditure in Germany and France in 2020 was 12.8% and 12.2% respectively (Eurostat, 2020[11]). In comparison, France spent 5.2% of its GDP per full-time equivalent student in primary to tertiary educational institutions while Germany spent 4.3% (OECD, 2022[12]). This difference can be partly explained because maintaining and expanding healthcare infrastructure requires significant resources. Nevertheless, the differences are much more marked for R&D spending. For example, Estonia spends 7.8% of its GDP on healthcare (Eurostat, 2020[11]) and 4.7% on education (OECD, 2022[12]), whereas spending on health R&D is almost 20 times more than that on education R&D (Figure 2.1). The contexts of R&D investment in the health and education sectors are somewhat different, and comparisons between the two can only be limited or superficial. However, these differences might also be indicative of societal and cultural perceptions that investing in healthcare improvements is worthwhile, while investing in education is not.

Figure 2.1. Spending on research and development on education and health

Percentage of intramural research and development (R&D) spending, 2014.



Notes: Data show the percentage of total intramural R&D spending dedicated to education and health in 2014 in the given set of countries. *Countries are ranked in descending order of the percentage of R&D spending dedicated to health.*
Source: OECD (2019[13]), "Research and development statistics: Gross domestic expenditure on R-D by sector of performance and socio-economic objective (Edition 2018)", *OECD Science, Technology and R&D Statistics* (database), https://doi.org/10.1787/5993e7f1-en.

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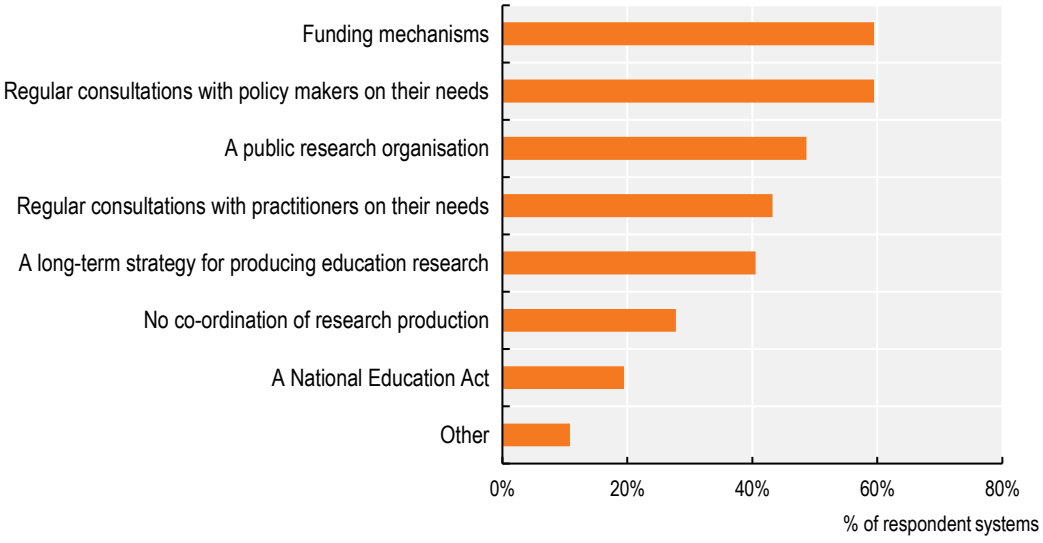
Co-ordinating the production of education research

The *Strengthening the Impact of Education Research* policy survey data show that most responding systems reported co-ordinating education research production by means of one or more mechanisms. Funding mechanisms and consultations with policy makers on their needs are the most common ways of co-ordinating research production. However, less than half of systems reported having mechanisms such as a public research organisation or regular consultations with practitioners in place (Figure 2.2) including England, Estonia, Belgium (Flemish Community), New Zealand, South Africa and Spain. Overall, just two in five systems use both of these mechanisms to co-ordinate research production. This indicates an untapped potential for policy action to stimulate research that addresses the needs and interests of all stakeholders. Systems that consult both practitioners and policy makers on their needs include Canada (Quebec), Iceland, Latvia, the Netherlands, Slovenia and Switzerland (the canton of Appenzell Ausserrhoden). In addition, less than half of the surveyed OECD systems have a long-term strategy for research production. Systems that reported having such a strategy include Chile, Finland, Latvia, the Netherlands, Norway (see Chapter 7) and Slovenia.

Figure 2.2. Mechanisms for co-ordinating research production

Percentage of systems reporting the presence of mechanisms for co-ordinating research production, 2021.



Notes: Data show the percentage of systems reporting the existence of the given mechanism for the co-ordination, regulation or management of research production. Data collected at a national and sub-national level. N = 37.
Mechanisms are ranked in descending order of the percentage of systems reporting their existence.
Source: OECD *Strengthening the Impact of Education Research* policy survey data.

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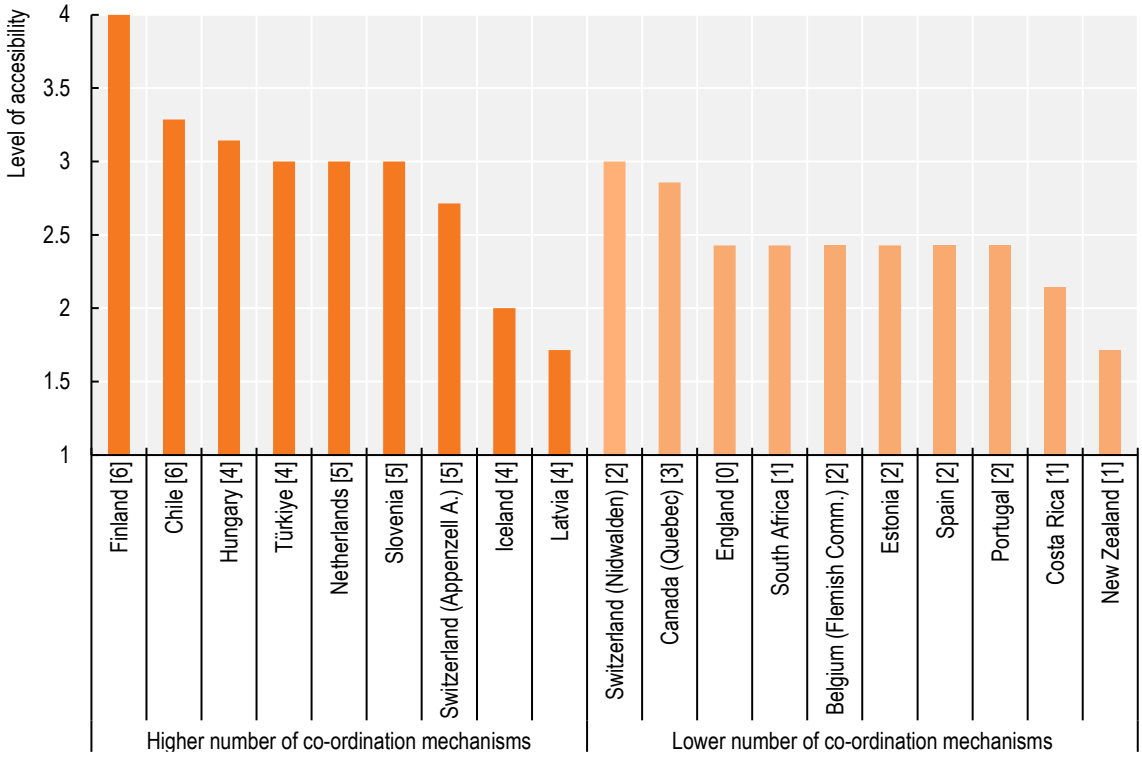
In practice, several mechanisms are often used together to co-ordinate research production (Figure 2.3).

Strong co-ordination can sometimes have consequences, such as when policy actors restrict education research to a narrow range of methodologies and questions thereby perhaps stifling other promising types of research or methodologies. Researchers have, for instance, criticised the strong tendency towards randomised control trials following practices in healthcare evaluation, noting that experiments are not always the most appropriate or useful form of investigation (McKnight and Morgan, 2019[14]). Well-designed co-ordination mechanisms could, however, help to address key issues of research production and engagement, such as accessibility.

There is still scope to better understand how countries that perceive education research to be accessible use co-ordination mechanisms to ensure accessibility. The *Strengthening the Impact of Education Research* policy survey understood accessibility in terms of user-friendly formats, language and price (research that is behind paywalls). Figure 2.3 shows that there is no direct relationship between the number of co-ordination mechanisms and the perceived accessibility of research. Some systems, such as in Costa Rica and New Zealand, reported having either no or very few mechanisms, and a relatively low accessibility of research. Although with a slightly better average accessibility, England, Estonia, Flanders (Belgium), South Africa, Spain and Portugal also belong to this group. In contrast, the canton of Nidwalden (Switzerland) reported the presence of two mechanisms (a public research organisation and a long-term strategy for education research) and reported education research to be "quite accessible". Quebec (Canada) is a similar exception, with few mechanisms but reasonable accessibility. Generally, countries that reported having a high number of mechanisms to co-ordinate education research (four or more) were more likely to view it as being fairly accessible. However, this is not the case in Iceland and Latvia.

Figure 2.3. Presence of co-ordination mechanisms and accessibility of education research

Average accessibility of education research, by presence of mechanisms for co-ordinating research production, 2021.



Notes: Data show the average level of accessibility on a 4-point Likert scale (from 1, “Not accessible at all” to 4, “Highly accessible”) reported by the given systems on 7 types of research ("Foundational", "Early-stage or exploratory", "Design and development", "Efficacy", "Effectiveness", "Scale-up" and "Secondary"). Systems are grouped based on the number of research co-ordination mechanisms countries reported (in brackets following on the X-axis). Data collected at a national and sub-national level. “Appenzell A.” refers to the Swiss canton of Appenzell Ausserrhoden. “Flemish Comm.” refers to the Flemish Community of Belgium. N = 19.
Systems are ranked within each group in descending order of their reported average accessibility of education research.
Source: OECD *Strengthening the Impact of Education Research* policy survey data.

StatLink https://stat.link/1wh83u

There are two points to consider when comparing co-ordination mechanisms and accessibility. First, there can be different reasons for low accessibility. Setting up appropriate co-ordination mechanisms requires first digging deep to determine the exact cause of low accessibility: is it that there is no locally produced and context-relevant research? Is it that international research is not translated? Or is just not available in briefs or toolkits that potential users could more easily access? The second point concerns the effectiveness of existing co-ordination mechanisms: are they targeting the actual research gaps and needs? Are they appropriately incentivising research that is of high quality, relevant and accessible? Finally, effectiveness lies not only in aligning mechanisms with perceived needs, but also in the quality of the co-ordination mechanisms themselves, and their alignment. Notably, building a robust knowledge base in education necessitates a sound, long-term strategy for research that is regularly evaluated and revised (see Chapter 7).

Capacity challenges in research production

Several systems also face particular capacity challenges when it comes to co-ordinating and incentivising education research production. Systems serving smaller populations, such as Flanders (Belgium) and the Netherlands, report challenges such as:

- A limited number of researchers working in the field of education research and educational organisation.
- Infrequent cross-institutional or international research collaborations.
- A declining number of Master and PhD students conducting research in fields relevant to education policy [(Watterreus and Sipma, 2023[15]); and see Chapter 5]. This is furthermore challenging as, in the Dutch case, the amount of direct government funding for education research is tied to the number of students in the educational sciences (Watterreus and Sipma, 2023[15]).

These capacity limitations are largely related to an insufficient overall share of funding. However, in some cases, even when there is targeted funding available for research that is relevant to education policy, there may only be a limited number of researchers applying for the funding (see Chapter 5).

Smaller systems can also be particularly affected by issues of transferability of research produced in other contexts. While education policy makers call for context-specific research that is relevant to local contexts, such research – when it exists – is often small scale. In systems such as New Zealand, limited funding for education research and development has affected the country's ability to fund research at scale (Box 2.1). Education research initiatives in New Zealand are also comparatively more dependent on government funding in the absence of foundations funding such research, e.g. as in the United States (NZCER, 2022, p. 5[16]). In comparison, international research can be considered valuable by virtue of it often being large-scale, but conversely does not lend itself to be easily translated to specific or local contexts. With many education systems having unique characteristics, it is not straightforward to apply research findings and policy instruments from other systems (Watterreus and Sipma, 2023[15]).

Box 2.1. The New Zealand Council for Educational Research

The New Zealand Council for Educational Research (NZCER) is a research and development organisation established in 1934. The NZCER Act 1972 provides the organisation with a mandate to carry out and disseminate education research. The organisation's revenue derives from a government grant, research contracts, and sales of products and services related to education, such as curriculum and assessment tools. The NZCER's principal tasks are to carry out and disseminate education research and provide independent information, advice and assistance. Much of its research work is conducted on contract for clients, and NZCER has fostered links with many strategic partners and stakeholders in New Zealand.

The organisation's strategic priorities include improving equity for learners, decolonising education and influencing the future of education. The organisation supports building Māori research capability and Māori education research as a fundamental component of governing and delivering research in the country, including through strategies of co-leadership and co-design in research. The NZCER advocates for a system that gives stability to research and development through dedicated funding. It raises awareness of the need for a significant increase in government investment in education research, and to secure base funding to enable more significant research programmes.

Sources: NZCER (2022[16]), *Te Ara Paerangi Future Pathways Green Paper*, www.mbie.govt.nz/dmsdocument/20739-nz-council-for-educational-research-te-ara-paerangi-future-pathways-green-paper-submission-pdf; NZCER (2022[17]), "Is educational research in Aotearoa in good shape?" https://doi.org/10.18296/rep.0023.

The transferability paradox has an important implication for policy. There is a clear need for effectiveness and scaled up research that helps to understand "how to make programmes work under a range of circumstances, and for all groups" (Gutiérrez and Penuel, 2014, p. 22[18]). Currently, however, a significant number of the OECD systems surveyed consider both effectiveness and scale-up research to be inaccessible (see Figure 2.4).

Aligning academic culture and incentives

Building more effective bridges between researchers and diverse audiences is key to promoting research engagement. Yet in many systems, there are too few incentives for researchers to promote their work among practitioners and policy makers. It is certainly true that in some countries and contexts, researchers are increasingly expected to demonstrate research impact beyond traditional academic measures, in the form of a new "impact agenda" (Boswell and Smith, 2017[19]). This shift has occurred amid policy makers' calls for more research evidence to inform policy, and universities' "renewed focus on their civic mission" (Durrant and MacKillop, 2022[20]). Initiatives such as the research excellence frameworks developed in Australia and the United Kingdom (Upton, Vallance and Goddard, 2014[21]; Smith and Stewart, 2017[22]) are indicative of this agenda. However, in many cases, universities and academic research institutions still fail to adequately incentivise their staff to engage broad audiences for their research and expertise. The following incentive-related issues have been noted in studies of Anglo-Saxon academic cultures, where the "impact agenda" has become part of the core mission of many institutions of higher education (Boswell, Smith and Davies, 2022[23]):

- Publishing in high-impact education journals is favoured to publishing in the grey literature, given the importance of successful academic journal publishing in tenure and promotion decisions (Lupia and Aldrich, 2015[24]). Researchers may feel they have to choose between actions that enable pay raises, promotions and tenure, and increasing their public engagement.
- Similarly, impact-related activities may not be adequately taken into account in workloads. A study on incentives for public engagement in nine British universities found that the most reported obstacle to knowledge exchange was time – respondents wanted to engage further, but could only do so by making a significant out-of-hours commitment (Upton, Vallance and Goddard, 2014, p. 359[21]). In Smith and Stewart's (2017[22]) study involving public health researchers in the United Kingdom, the most common complaint is related to the time-consuming nature of impact work and the lack of specifically allocated time.
- The current impact architecture encourages academics to promote the findings of individual studies, rather than improve available evidence more broadly, such as through research syntheses and knowledge brokerage (Smith and Stewart, 2017[22]; Boswell, Smith and Davies, 2022[23]).

The above points highlight two problems. First, the under-resourcing of impact-related activities presents a clear obstacle to aligning academic culture and incentives to the impact agenda. This is strongly related to the precarity of academic research careers in many countries and systems, whereby researchers often hold fixed-term positions without permanent or continuous employment prospects and face strong pressures to publish in academic journals to further their careers (OECD, 2021[25]; OECD, 2021[26]). Second, more effective incentivisation may require a shift to rewarding processes over outcomes. This can include rewarding knowledge exchange when measuring impact, such as collaborative endeavours that build incrementally on a wider body of work, or building long-term relationships with non-academic audiences (Spaapen and van Drooge, 2011[27]; Upton, Vallance and Goddard, 2014[21]; Boswell and Smith, 2017[19]). Overall, there is much work to do here: better aligning incentives will require significant effort and co-ordination at a system level.

Different types of education research – their relevance and challenges

It is important to first state that not all education research has the goal to be relevant to policy or practice. However, this section explores how improving both the quality and accessibility of certain types of education research can be a core initial building block of the evidence system.

Low accessibility of research deemed relevant

The *Strengthening the Impact of Education Research* policy survey collected policy makers' perceptions of the relevance and accessibility of different types of education research. Many systems report shortages of research that is considered relevant to policy and practice across different research types What is particularly concerning is that policy makers perceived some types of research to be quite or highly relevant, but not very accessible (see Figure 2.4). For instance, 85% of systems considered to be scale-up research to be quite or highly relevant while in comparison, 10% considered it to be highly accessible. This could indicate that systems lack studies that test the effectiveness of a wide range of populations or contexts (see Box 2.2). However, the gap between relevance and accessibility appears to be narrower for secondary research, possibly suggesting that evidence syntheses are among the types of research that policy makers are more likely to access (see below).

The *Strengthening the Impact of Education Research* policy survey data do not allow us to disentangle specific factors of accessibility, or to understand if these factors vary by type of research or by country. A first explanation for low perceived accessibility can be that there simply is little research available in a given area, with respondents reporting this as low accessibility. It is thus likely that the survey findings that indicate limited access to certain types of research simply reflect a general lack of research in the respective areas. A second explanation is that there is research, but for various reasons it may not be accessible. This seems especially plausible given the relatively low level of funding discussed above. The literature suggests that low accessibility of research is at least partly due to limited progress in open access publishing. On the one hand, university policies and open access mandates provided by funders have contributed to the growing share of open access scholarship (Piwovar et al., 2018[28]; Roehrig et al., 2020[29]). However, the ability to publish open access is dependent on the support pledged by individual institutions and most high-impact education journals retain a paywall policy (SCImago, 2023[30]). It may also be the case that certain types of research are inaccessible in terms of their format or language. This is supported by the *Strengthening the Impact of Education Research* policy survey data according to which low accessibility of research in appropriate formats is the third most common barrier in education practice and policy. In addition, less than two in three systems synthesise and disseminate research findings through user-friendly tools to practitioners and policy makers (OECD, 2022[5]).

At the same time, policy makers' perceptions of which types of research are relevant can and perhaps sometimes need to be shaped. This can be done by supporting ministries and other education stakeholders to develop their understanding of how different types of research are relevant to their work. In practice, stakeholders disagree on fundamental topics such as the purpose of education research, the issues it should deal with and the methods it should employ. This is reflected in the tendency for policy makers to consider applied research to be more relevant: effectiveness research was considered highly relevant by more than half of the surveyed systems, whereas foundational and exploratory research were seen as highly relevant by 40% and 25% of the systems, respectively (Figure 2.4). While it is intuitive to think of applied research as more relevant for policy makers or practitioners, there is no clear binary distinction, with much of education research falling on a spectrum between basic and applied research. Arguably, many forms of research can potentially address practical concerns in education and provide a space for critical reflection and holistic understanding of practice and policy.

Box 2.2. Defining the different types of research

Design and development research develops solutions to achieve a goal related to education or learning; it draws on existing theory or evidence to develop interventions.

Early-stage or exploratory research examines relationships among important constructs in education and learning to establish logical connections and inform the design of future interventions.

Effectiveness research examines the effectiveness of an intervention under typical circumstances.

Efficacy research allows testing a strategy or intervention under "ideal" circumstances (e.g. with a higher level of support than one would find in normal circumstances).

Foundational research is research intended to contribute to better outcomes; studies that test, develop or refine theories of teaching or learning.

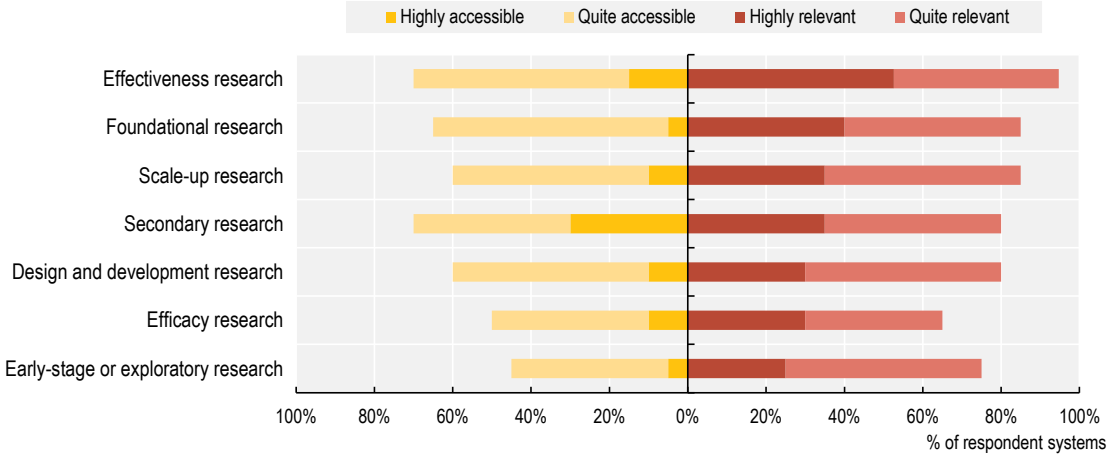
Scale-up research examines effectiveness research in a wide range of populations and contexts.

Secondary research consists of syntheses or reviews of existing research on specific topics.

Source: Adapted from Institute of Education Sciences and the National Science Foundation (2013[31]), *Common Guidelines for Education Research and Development*, www.nsf.gov/pubs/2013/nsf13126/nsf13126.pdf.

Figure 2.4. Relevance and accessibility of research by type

Percentage of systems reporting relevance and accessibility of different types of education research, 2021.



Notes: Data show the percentage of systems reporting the extent to which a given type of research is accessible (in terms of language, user friendly formats and price) and relevant. Data collected at a national and sub-national level. N = 20.
Types of research are ranked in descending order of the percentage of systems reporting them as "Highly relevant"
Source: OECD *Strengthening the Impact of Education Research* policy survey data.

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Evidence synthesis: A core building block of the evidence system

A lack of time to access research remains one of the key barriers to engaging with research in policy and practice (OECD, 2022[5]). Coupled with the ever-expanding body of research, this generates demand for evidence synthesis.

What is evidence synthesis – and why does the education sector need it?

Evidence synthesis can be defined as "a rigorous approach to cumulate evidence" (Polanin, Maynard and Dell, 2017, p. 172[32]). In particular, a key benefit is the possibility of drawing evidence from a comprehensive body of literature instead of relying on a single study which can be misleading (Gough, Maidment and Sharples, 2018[33]). Box 2.3 lists different types of evidence synthesis.

Box 2.3. Types of evidence synthesis

Systematic review is a type of evidence synthesis which employs rigorous methods to outline "what is known and how is it known and what more do we need to know" (Gough, Maidment and Sharples, 2018, p. 66[33]).

A **thematic narrative review** assesses the state of knowledge on a given question through a theoretical lens (Rother, 2007[34]).

Rapid review is an accelerated evidence synthesis approach intended to meet the timely needs of decision makers (Kelly, Moher and Clifford, 2016[35]).

Meta analysis is a statistical technique of combining findings from a set of studies that address common research hypotheses (Denson and Seltzer, 2010[36]).

Syntheses of reviews integrate results from qualitative, quantitative or mixed methods empirical studies. Such syntheses may include systematic reviews, thematic narrative reviews and meta-analyses (British Educational Research Association, 2023[37]).

Evidence synthesis offers numerous benefits. First, it enables educators and policy makers to understand which programmes or practices have been proven to work in other contexts (Slavin, 2019[38]) and can help guide funding decisions (Gough, Oliver and Thomas, 2017[39]). Second, it can shed light on the cause of disagreement on a given question. For instance, one reason why disagreement exists regarding the impact of reducing class size on student learning may be its heterogenous effects, namely the benefits being mostly limited to disadvantaged pupils in primary schools (EEF, 2023[40]). The health sector is an example of a sector that has been highly active in creating a robust knowledge base through evidence synthesis (Box 2.4).

Box 2.4. Comparing evidence synthesis in health and education

The health sector produces 26 times more syntheses than the education sector (Education.org, 2021[8]). In many countries, this volume gap can be partly explained by the higher funding of health research in absolute terms and as a percentage of total research and development (R&D) funding (OECD, 2019[13]). Nevertheless, the R&D spending gap in these sectors is significantly narrower than the volume gap in research syntheses. This indicates that some key synthesis work may be missing for certain topics and areas of education research. For instance, evidence of what does not work is often lacking (Education.org, 2021[8]).

Evidence syntheses in education have sometimes been found to be of questionable quality: they are often incomplete, sporadic, lack actionable guidance and outdated (Education.org, 2021[8]). Meta-analyses in particular often fail to produce "credible and generalisable meta-analytic findings that can be transformed to educational practices" (Ahn, Ames and Myers, 2012, p. 436[41]).In addition, one of the main reasons for the low reproducibility and replicability of systematic reviews is the apparent lack of transparency in reporting data, or the analytical procedure and methods (Page et al., 2021[42]). The same holds for synthesis of reviews (Polanin, Maynard and Dell, 2017[32]).

Knowledge intermediaries have done important work to address these concerns about the quality and accessibility of evidence syntheses in education (Torres and Steponavičius, 2022[43]) (Box 2.5). Meanwhile, specialised departments and units within Ministries of Education are commissioning external research and identifying significant knowledge gaps, as well as producing research syntheses and green papers.

Box 2.5. Contextualising and translating evidence: Intermediaries around the world

A growing number of knowledge intermediaries are contributing to evidence synthesis in education. This includes the 3ie Development Evidence Portal, an expansive repository of rigorous evidence of "what works" in international development interventions, including in education. The Evidence for Policy and Practice Information Centre at University College London conducts systematic reviews in sectors such as health and education and works closely with diverse stakeholders to understand their needs.

The most well-known evidence synthesis for education practice initiative is the Education Endowment Foundation's (EEF) online Teaching and Learning Toolkit that synthesises and routinely updates evidence about school-based interventions.

Increasingly, knowledge intermediaries are also active beyond Anglo-Saxon countries. In two such examples described below, intermediaries have integrated the EEF toolkit into their work.

SUMMA (Laboratorio de Investigación e Innovación en Educación para América Latina y el Caribe) is a knowledge intermediary active in the Latin America and Caribbean region. SUMMA hosts the Effective Education Practices Platform – an online toolkit that synthesises global and regional high-quality evidence and research on school-level education interventions. The platform provides synthesised information of different interventions, including a description of the intervention or strategy; the impact that can be expected based on evidence of effectiveness; contextualisation of evidence detailing what the research findings are for the region; how secure the evidence is in terms of the quality, quantity and consistency of available international evidence; an estimation of costs needed to implement a given strategy; and factors to consider before implementing a specific strategy or intervention. The platform is available in Spanish, Portuguese and English.

eBASE is a knowledge intermediary based in Cameroon whose work has focused on the Lake Chad basin (including countries such as Cameroon, Chad, Niger and Nigeria). eBASE has developed a teaching and learning toolkit that is available in French and English for decision makers, teachers and learners. The toolkit integrates 27 teaching strands that present synthesised evidence on each theme.

Source: eBASE (2023[44]), "Teaching and Learning Toolkit, https://ebaselearning.org/teaching-learning-toolkit; SUMMA (2023[45]), "Effective Education Practices Platform", https://practicas.summaedu.org/.

Improving the quality and quantity of evidence syntheses and their accessibility is not a panacea for educational issues. Dissemination alone is often ineffective at enhancing research impact (Oliver et al., 2022[46]). High-quality and accessible evidence syntheses should instead be seen as a core building block

of the evidence system around which other initiatives aimed at fostering a culture of research engagement can be developed.

Increasing engagement with research evidence: Is collaborative research a silver bullet?

A common complaint among educationalists is that research is not directly relevant to policy makers and practitioners, which discourages their engagement with research (OECD, 2022[5]).

Traditional models of research dissemination have been shown to perform poorly when it comes to connecting research evidence with practitioners or policy makers (DuMont, 2019[47]). Research on knowledge brokerage has called for more attention to the "social side" of research engagement; in other words, to better understand the role of relationships in knowledge mobilisation processes (see also Chapter 3) (DuMont, 2019[47]). This has led to calls for collaborative research design, and in particular co-production – a form of stakeholder involvement in the production of research, following specific principles – to be more highly valued.

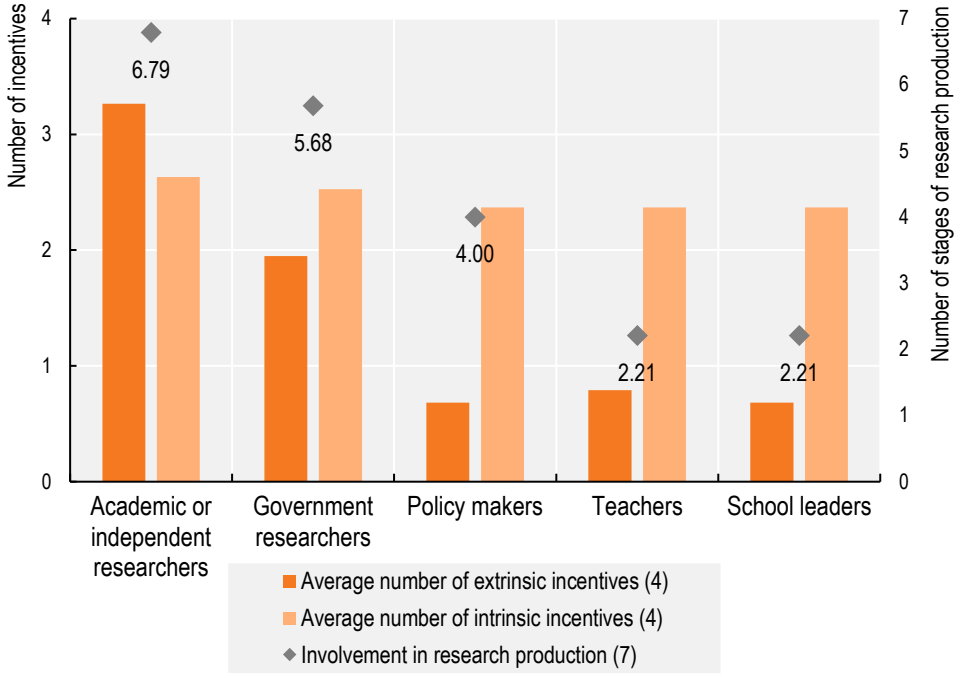
Advocates of collaborative research note that involving stakeholders in the research process can strengthen the quality, relevance and availability of research to inform policy or practice (Gough et al., 2011[48]; Boaz, 2021[49]). For example, they argue that engaging practitioners in setting the research agenda can help to ensure more actionable findings and more efficient data collection (Meyer et al., 2022[50]). Extending collaboration to more stages of the research production process can also foster a better mutual understanding between policy makers, practitioners and researchers of their respective work. It can enhance public trust in research – and empower communities that have been traditionally marginalised (Meyer et al., 2022[50]; Davies, Powell and Nutley, 2015[51]; Boswell, Smith and Davies, 2022[23]; OECD, 2022[5]).

At the same time, proposals for research where the explicit goal is to increase relevance to policy and practice, such as collaborative research, have been met with scepticism in some arenas. Critics have raised concerns such as that resulting research methods risk introducing more political ideology and bias into education research [Van Damme in Bangs et al. (2022[52])]. These criticisms are predominantly concerned with a risk of eroding the methodological rigour of education and other social science research by adopting such approaches and consider this too high a cost despite the potential benefits of increasing research engagement. Others are more optimistic regarding the transformative potential of collaborative research, but have also advocated a cautious approach: the ability to negotiate ethical-political dimensions of research methods should be a key competency when conducting this type of research (West and Schill, 2022[53]; Oliver, Kothari and Mays, 2019[54])

The *Strengthening the Impact of Education Research* policy survey asked about ministries' perception of different stakeholders' involvement in seven stages of research production and about incentives for such involvement. Academic researchers were considered to receive the most intrinsic and extrinsic incentives and were reported as the most involved in all stages of research production (Figure 2.5). For both policy makers and practitioners, systems reported on average more than two intrinsic incentives for participation, such as informal recognition from peers and a sense of participation in national debate. However, almost none of the systems reported extrinsic incentives such as research production being part of the job description and performance evaluation criteria, explicit time allocation, or a salary supplement for these groups. Practitioners were perceived to be the group the least involved in research production. Policy makers were reported to be somewhat involved, on average, in research production despite the apparent lack of extrinsic incentives (although their participation is heavily concentrated on the early stage of formulating research questions; see Figure 2.6).

Some countries have a stronger tradition of collaborative research. In Sweden, an increase in research collaborations with practitioners emerged as key steps were taken to embed an evidence- and experience-based approach to education. In particular, the government's revision of the Education Act in 2010 made it compulsory for education in Sweden to be based on rigorous research and scientific knowledge and subsequently spurred collaboration with researchers and practitioners (Box 2.6).

Figure 2.5. Involvement in research production and related incentives



Notes: Data show the average number stages of research production ("In formulating the research questions", "designing the research", "co-ordinating the research", "collecting the data", "analysing and interpreting the data", "communicating research results", and "evaluating the research results") in which systems perceive a given stakeholder to be involved in, and the average number of extrinsic ("is part of their job description", "is part of their performance evaluation criteria (e.g. for promotion, tenure)", "implies time allocation (e.g. a certain number of hours per week)", and "implies a salary supplement") and intrinsic incentives ("gives them a sense of participation in national debate", "allows them to improve practices and processes", "implies informal recognition (e.g. from their peers, hierarchy)", and "allows them to support decision making") that systems perceive a given stakeholder has to be involved in research production. Data collected at a national and sub-national level. N = 19. *Stakeholders are ranked in descending order of the average number of research production stages in which they are reportedly involved.*
Source: OECD *Strengthening the Impact of Education Research* policy survey data.

StatLink https://stat.link/ux9vte

Box 2.6. The rise of practice-near research in Sweden following legislative changes

Sweden ratified a new Education Act in 2010 which replaced the previous act of 1985. The 2010 act states that education in Sweden must be based on scientific knowledge and proven experience. The Swedish National Agency for Education considers scientific knowledge to be based on "theoretical rooting, elaboration and development, as well as an empirical basis" (Swedish National Agency for Education, 2014, p. 11[55]), and defines "proven experience" as teacher knowledge that is tested between peers and documented.

Since the ratification of the 2010 act, there has been an emphasis on practice-near school research in Sweden, which is research that focuses on practitioners' needs and has practice improvement as a central purpose. Researchers have suggested that the wording of the Education Act has fuelled interest in this type of research. The Swedish National Agency for Education has also played an important role in endorsing the implementation of the Education Act and the growth of practice-near school research, which has seen collaboration between researchers and practitioners increase (see, example, the Education, Learning, Research initiative below). Other developments to promote evidence-informed policy and practice also followed the introduction of the Education Act, such as the founding of the Swedish Institute for Educational Research in 2015.

The Education, Learning, Research initiative in Sweden

The Education, Learning, Research initiative is a Swedish research-practice partnership that strengthens the scientific basis for teacher training. The pilot project tested collaboration models between different stakeholders on practice-based research, bringing together universities, municipalities and schools.

Sources: Magnusson and Malmström (2022[56]), "Practice-near school research in Sweden", https://doi.org/10.1080/20004508.2022.2028440; Swedish National Agency for Education (2014[55]), *Research for Classrooms: Scientific Knowledge and Proven Experience in Practice*, http://effect.tka.hu/documents/Research_for_Classrooms_benne_collaborative_learning.pdf.

Effectiveness and impact

Despite optimism about stakeholder engagement in research production, it is important to note that the evidence that collaborative research increases engagement with research evidence or has a positive effect on student outcomes is mixed, with studies varying widely in their conclusions (Coburn and Penuel, 2016[57]; Boaz et al., 2018[58]). Studies have reported on the effectiveness and impact of collaborative research, including in particular research-practice partnership (RPPs) as one such form. RPPs focus on problems of practice (challenges that practitioners face) and employ intentional strategies to foster partnerships, including carefully designed rules to structure interactions between researchers and practitioners (Coburn and Penuel, 2016[57]).

On teachers' engagement, research shows positive outcomes but also challenges:

- Participation in an RPP may lead to organisational change that enables greater access to research (Coburn and Penuel, 2016[57]).
- Certain conditions in RPPs can be conducive to the development of mindsets and behaviours among teachers associated with evidence-based decision making, while the trust and communication that is built as part of RPPs can bolster research use (Wentworth, Mazzeo and Connolly, 2017[59]).

- The most frequently reported challenge is that teachers lack time and external support to engage with research (Cooper, Klinger and McAdie, 2017[60]; Bell et al., 2010[61]).

On student outcomes, evidence is also mixed:

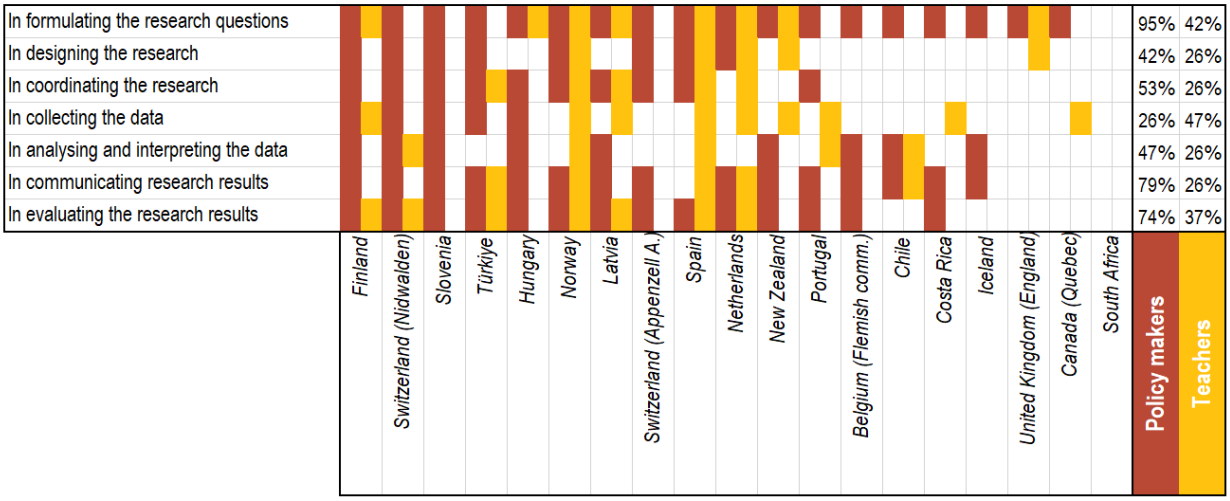
- The evidence that collaborative research improves student outcomes could be stronger and more conclusive (Gorard, See and Siddiqui, 2020[4]).
- RPPs have been shown to produce reasonable evidence of promising impacts on student learning (Coburn and Penuel, 2016[57]). However, it remains unclear if their impact on student learning is due to the nature of the partnerships themselves, and if results would have been different outside the context of a RPP.
- Other studies have found little evidence of the impact of RPPs on student outcomes (Blazar and Kraft, 2019[62]; Cannata, Redding and Nguyen, 2019[63]).

Clearly, more research is needed to ascertain the benefits of collaborative research on research engagement and student outcomes. In particular, two important research gaps remain. First, many collaborative research studies have not been evaluated. The case of RPPs illustrates this: evidence of their effectiveness remains limited to individual case studies, and RPPs are themselves quite diverse (Desimone, Wolford and Hill, 2016[64]; Welsh, 2021[65]). However, it is worth noting that the partnership work such as done through RPPs and other collaborative research aims to fundamentally change the culture of research engagement, and this impact may only become visible over time (Welsh, 2021[65]). Second, studies on collaborative research, and RPPs in particular, are concentrated in the North American context such as the United States (Coburn and Penuel, 2016[57]) and Canada (Cooper, Shewchuk and MacGregor, 2020[66]), although research is emerging in Germany, Norway and Sweden (Hartmann and Decristan, 2018[67]; Sjölund et al., 2022[68]; Fjørtoft and Sandvik, 2021[69]; OECD, 2022[5]). Finally, as we noted earlier, whether collaborative research poses other risks such as affecting studies' methodological rigour – and whether these risks are acceptable – is still being debated. Ascertaining the impact of such research approaches on research engagement and other outcomes forms a relevant part of this debate.

Forming genuine partnerships

A further challenge is that genuine partnerships of research production often remain more of an aspiration. Figure 2.6 shows that policy makers are more widely involved in research production than teachers. In most respondent systems, they are involved in formulating research questions and communicating and evaluating results. Teachers' involvement is concentrated on formulating research questions and data collection (although both only in less than half of the systems). When teachers are only involved in data collection (Quebec [Canada], Costa Rica) it may indicate a passive role whereby they simply fill in surveys or respond to interviews. A solely passive role, however, does not bring much benefit to schools [Nagy in Bangs et al. (2022[52])]. A few countries such as Latvia, Norway and Spain appear to have a stronger collaborative research culture that involves policy makers and practitioners more extensively.

Figure 2.6. Involvement of policy makers and teachers in research production stages



Notes: Data show in which stages of research production the given systems reported the involvement of policy makers and teachers. The last two columns show the percentage of respondent systems that reported policy makers' and teachers' involvement in the given stage of research production. Data collected at a national and sub-national level. "Appenzell A." refers to the Swiss canton of Appenzell Ausserrhoden. "Flemish Comm." refers to the Flemish Community of Belgium. N = 19.
Systems are ranked in descending order of the number of research production stages in which policy makers are reportedly involved.
Source: OECD *Strengthening the Impact of Education Research* policy survey data.

StatLink https://stat.link/0jw59c

Researchers too often appear unprepared for genuine co-production (Boaz, 2021[49]). Some of the key challenges include power relations, incentives for actors to be involved and institutional support for academics in their engagement.

First, genuine collaboration requires managing power asymmetry between stakeholders, which often arises from differences in professional backgrounds and lived experiences (Meyer et al., 2022[70]). Often researchers hold the power position in seemingly collaborative approaches, with their points of view and knowledge dominating the process. Too often co-production is seen as an add-on or a stage of research rather than an entirely different epistemological approach to doing research (Boaz, 2021[49]). What starts out as co-production can revert to a traditional research design characterised by extractive relationships between stakeholders and researchers. For example, teachers' involvement may be limited to data generation and mere consultation, particularly when researchers are subject to time pressures to complete a project and publish their results in a journal. The process of developing a collaborative research agenda can also be contentious, as the goals and priorities of partners may vary. In general, the challenge of running a partnership in a way that shares power equally, where academic researchers have previously considered this "their turf", has been underestimated (Prøitz and Rye, 2023, p. 3[71]). To address the issue of unequal power dynamics, studies on collaborative work have recommended employing intentional strategies to guide partnerships, including rules for a structured interaction (Hartmann and Decristan, 2018[67]; Jones et al., 2016[72]).

Second, academic researchers are often incentivised to focus on research that is appealing to journals, while practitioners are inclined towards the application of knowledge in specific settings, and research approaches that minimise classroom disruption (Meyer et al., 2022[50]).

Third, in terms of institutional support, academics still lack support and training on how to work together with practitioners or policy makers. While such training programmes and policy engagement centres have been springing up within universities in recent years, these remain underexamined in the literature and

their contribution to evidence engagement in policy is still poorly conceptualised (Durrant and MacKillop, 2022[20]). The same is often true for practitioners and policy makers (see Chapter 3).

In sum, involving stakeholders in research production is considered by many to be a promising way of increasing research relevance and engagement. However, important questions remain to be explored. This chapter highlighted that collaborative research approaches have also been contested, with critics expressing concerns about methodological risks. Practically, it is also unlikely to be feasible that every teacher in every school constantly or even regularly collaborates with researchers. How could promising initiatives be scaled – and what do we mean by scaling in the context of collaborative research? Systems, schools, universities and intermediary organisations have been experimenting with different models of collaborative research. These include RPPs, research school networks (EEF, 2023[73]) and teacher researchers (Halász, 2022[74]), among others (see also Chapter 8). However, we still know little about which models are effective and under what conditions. How can they increase evidence use among teachers and policy makers? What is their impact on teachers' and policy makers' beliefs, competences and practice?

Conclusion and recommendations

This chapter presented a number of mechanisms, practices and processes that policy organisations and other actors use to co-ordinate, steer or influence the production of education research. The analysis thus focused on the co-ordination of the production of research that is deemed relevant to policy and practice yet, as we noted, this is not the totality of research production. Indeed, while an important question that arises is how much of research production should be geared towards producing knowledge that is relevant or useful for policy and practice, this question goes beyond the scope of this chapter. While the presented mechanisms have mostly not been evaluated, they serve as examples of policy levers and other organisational practices that are employed to strengthen the knowledge base and nurture the culture of research engagement in education.

This chapter has addressed three main questions: 1) the role of co-ordination mechanisms in building a robust knowledge base and supporting research engagement; 2) the different types of education research that stakeholders need and ways to improve access; and 3) the main considerations when exploring the potential of collaborative research processes for a better research engagement.

Three key messages are emerging that draw on the analysis of these questions.

Co-ordination mechanisms exist, but there is room to improve them

First, our overall understanding of which co-ordination mechanisms work in different contexts, and how well they work to build a robust knowledge base, could be improved. The existence of a mechanism alone says little about how well it works, or the quality of its design. More research and evaluation are needed to understand how policy mechanisms can help to address key issues of research production and engagement, such as the accessibility of relevant research. Second, system-level incentives are needed to support research engagement, including additional funding for knowledge mobilisation activities, and eventually also incentives to support diverse actors' involvement in research production. Addressing this requires substantial, system-level cultural change if systems are to move towards a culture of research engagement. Third, funding is a key co-ordination mechanism in different systems. Ensuring stable funding for education research production is key and can include exploring options such as base funding for research organisations to enable significant research programmes and grow and retain research capabilities.

Stakeholders still need research to be more accessible, and in synthesised formats

Stakeholders need better accessibility to education research, but particularly some types of research. Accessibility, availability of research and funding are also intricately interlinked. A more fine-grained analysis is needed to make sense of the low accessibility of education research. The relatively low level of funding dedicated to education research seems to suggest that in some cases there may simply be a shortage of research in certain areas. This, in turn, calls for changes in the collection and reporting of data for education research and development spending, which at the moment is largely lacking.

In light of increasingly complex informational environments, evidence synthesis can help co-ordinate research efforts and help policy makers and practitioners access relevant research. Yet, there is considerable scope for high-quality evidence synthesis to be done more systematically.

Finally, based on their specific needs and context, systems need to consider how much to invest in their capacity both to produce locally relevant research and to conduct scale-up and effectiveness research as a way of translating findings to their context. While drawing on findings from different contexts implies cost savings, it is not straightforward to generalise findings and apply these to a different context. Conversely, addressing all knowledge needs with research produced within a given system may not be feasible due to limited capacity, especially in small education systems.

Collaborative research is promising, but key questions remain unanswered

Collaborative research has been shown to be promising when considered purely from the perspective of increasing practitioners' and policy makers' engagement with research. However, the evidence on the impact of collaborative research is inconclusive due to the high variety of approaches and contexts in which they are implemented. To better understand the potential benefits – and indeed potential risks or drawbacks – of drawing diverse stakeholders into education research production processes, it is essential to prioritise evaluating and piloting of collaborative research.

Finally, it is at best impractical for all teachers and schools to be in regular collaboration with researchers. How, then, can promising initiatives be scaled? And what does scaling look like in the context of collaborative research? The question of scalability of collaborative research initiatives will need to be resolved.

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3 Terms of engagement: Where learning meets culture

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This chapter describes characteristics of a culture of research engagement across OECD countries in policy and practice. Based on a review of the available literature and an analysis of the results of the OECD's *Strengthening the Impact of Education Research* policy survey, the chapter proposes a set of dimensions to analyse the reported culture across respondent systems and the skills that support it. The chapter then assesses the resources and learning opportunities that can promote research engagement within each survey participant system. The chapter illustrates promising practices through several country cases and concludes with recommendations for education systems to strengthen the research engagement culture.

Introduction

Work on evidence-informed policy and practice over the past two decades has increasingly recognised the importance of cultural factors in mobilising knowledge (Powell, Davies and Nutley, 2017[1]; Haynes et al., 2020[2]). This is no coincidence. Growing decentralisation and school autonomy mean there are now more actors with decision-making abilities in OECD education systems and increasing numbers of relationships and interactions (Golden, 2020[3]). These relationships and interactions are shaped by a diverse array of organisational cultures. These cultures shape, and are shaped by, the skills that individuals have, which can be strengthened through individual and collective professional learning opportunities. Professional learning that is informed by internal and external evidence can promote a decision-making culture that is more likely to improve education quality and, ultimately, student learning. Despite the presence of a strong basis for developing a culture of research engagement, data from the *Strengthening the Impact of Education Research* policy survey suggest that key systemic enablers are still missing in many education systems.

Almost a quarter of a century ago, Davenport and Prusak (1998[4]) considered developing a culture of research engagement as one of the main objectives of knowledge mobilisation within an organisation. Yet today, the relational approaches and systematic supports required to build and maintain such a culture remain elusive in policy making (Oliver et al., 2022[5]). Similarly, in education practice, meaningful capacity for research engagement depends on the consistent presence of a culture supporting and incentivising research-informed practice (Godfrey and Brown, 2018[6]). Identifying opportunities for change can be challenging, since people shape organisational culture, but this same culture affects, in turn, people's behaviours, attitudes and beliefs (Belkhodja et al., 2007[7]).

Social interactions, processes and contexts (henceforth "social processes") influence individual behaviours related to research engagement. They help organisations integrate evidence into their activities, stimulate professional learning, and are an important building block of a research engagement culture for both practice and policy. As Oliver and Boaz (2021[8]) argue: "mobilisation takes people, not papers". Connections between individuals, bodies of knowledge and experience are often forged through people coming together, or the work that results from this. OECD work has found that giving decision makers time to discuss the implications of research cultivates a shared understanding of what constitutes fit-for-purpose evidence (Köster, Shewbridge and Krämer, 2020[9]). Interventions that systematically promote interactions between decision makers and researchers have been found to be among the most effective for increasing evidence use (Langer, Tripney and Gough, 2016[10]).

When it comes to engaging with research in education practice, Cain (2019[11]) argues that because learning itself is a social process, so is research use. A strong culture of research engagement is one in which people engage with research but also help others to engage with it. Social contexts promoting collective discussions, observation, reading and thinking about research can contextualise evidence within a professional's experience. Recent work in the Austrian context found that nine in ten school leaders exchanged with colleagues about using evidence to enhance education quality, often through informal collegial exchanges (Köster, Shewbridge and Krämer, 2020[9]). Cultivating these social processes requires systematic enablers in the form of dedicated resources and learning opportunities.

A culture of thoughtful engagement with research is strictly connected to organisational learning, stimulated through opportunities that encourage evaluative thinking and systematic attention to building individual skills, knowledge and attitudes (OECD, 2017[12]). Developing systematic learning opportunities to enable practitioners and policy makers to use evidence requires a well-developed vision of the school or ministry as a learning organisation. Kools and Stoll (2016[13]) define a learning organisation in education as one that places student learning at the centre and offers continuous learning opportunities for all staff. A learning organisation mobilises knowledge through supportive leadership, a culture of inquiry, innovation and exploration, as well as engagement with the wider education system. This definition in education mirrors research on organisational learning in healthcare, where there is consistent evidence that providing

a safe space for taking risks and experimentation is crucial for effective and safe healthcare delivery and promoting organisational learning (Grailey et al., 2021[14]).

Allocating adequate human and financial resources that provide dedicated time and space for social processes to flourish are crucial for developing a research engagement culture. Resources underpin collaborative learning and allow for needs-based knowledge creation linked to professional ideas and targeted outcomes (Godfrey, 2017[15]). But resources need to be tied together by a structured approach. A structured approach is one that is taken intentionally, deploying systematic mechanisms to consciously achieve clear goals (Langer, Tripney and Gough, 2016[10]). Structural factors such as these can make the difference between using research and using research *well* (Rickinson et al., 2022[16]).

This chapter will present data on culture, skills, resources and learning opportunities from the *Strengthening the Impact of Education Research* policy survey[1]. The survey – conducted from June to September 2021 – collected data at the national or sub-national (state, province, canton, etc.) level from 37 education systems in 29 countries. It focused on the actors, mechanisms and relationships that facilitate the use of research in policy making and in practice, as well as the production of research (see more information in Box 1.1, in Chapter 1). Its first results and analyses were presented in our previous report (OECD, 2022[17]). The survey gathered the perceptions of ministries of education about policy makers' and practitioners' individual attributes generally. Naturally, this general impression of individuals most likely hides a significant degree of individual heterogeneity within systems.

This chapter structures the analysis along three questions:

- What are the characteristics of a culture of research engagement in education systems?
- To what extent are systemic enablers of a culture of research engagement present in education systems?
- In what ways are culture, skills and learning opportunities connected?

The first part of the analysis is anchored in two questions asked in the *Strengthening the Impact of Education Research* policy survey. The first question asked ministries of education about the culture and mindset (hereafter referred to as "culture") of research engagement among policy makers and practitioners. The second asked about policy makers' and practitioners' skills and capacity (hereafter referred to as "skills") to use research.

The second part of the analysis is centred on additional survey questions on two enablers of culture and skills of practitioners and policy makers in education systems: 1) dedicated resources; and 2) policy makers' and teachers' learning opportunities.

The third and final section looks at the statistical relationships between these factors, to get a fuller picture of the perceptions of respondent ministries. Additional data are also presented throughout. These relate to relevant barriers, mechanisms and levels of ministries' satisfaction with the extent to which policy makers and practitioners engage with research.

What are the characteristics of a culture of research engagement in education systems?

Culture of research engagement at the system level

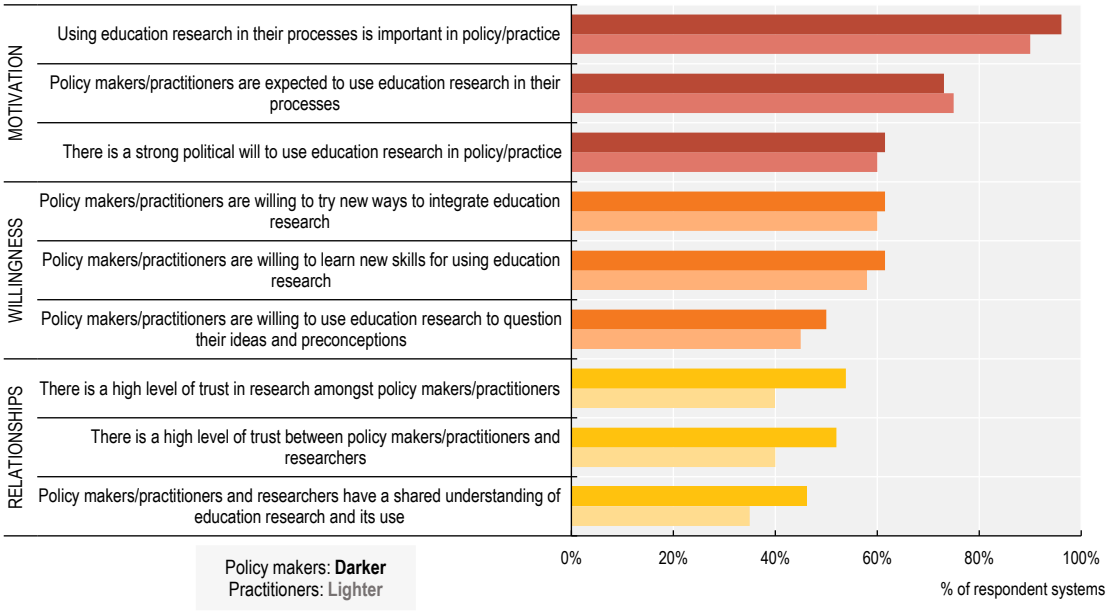
The policy survey asked the extent to which ministries agreed with nine statements explicitly linked to the theme of research engagement culture, summarised in Figure 3.1. The survey measured these perceptions on a 1-5-point Likert scale, ranging from "Strongly disagree" to "Strongly agree".

Drawing on the knowledge mobilisation literature, each of the statements has been grouped under the following dimensions:[2]

- **Motivation:** Motivation is regarded as a key component of behaviour change, alongside capability and opportunity (Michie, van Stralen and West, 2011[18]). Organisational norms and ethos form an important social influence which affect an individual's extrinsic motivation to use research (Rickinson et al., 2020[19]). These include both social (expectation of others) and contextual (political will) pressures. In addition to extrinsic motivation, the extent to which an individual values research is an intrinsic motivation. Intrinsic motivation is an important driver of professional improvement and skill development (Dysvik and Kuvaas, 2010[20]). When it comes to education practice, intrinsic motivation is associated with involvement in professional development, decision making and the quality of instructional practices (Guerriero, 2017[21]).
- **Willingness:** Disposition to implement changes based on research indicates a positive attitude towards thoughtful engagement with research evidence, influenced by values and beliefs (Rickinson et al., 2020[19]). Without a willingness to solve problems and collaborate, even the most elaborate administrative solutions will fail to bring any lasting change (Sitra, 2018[22]). Of course, willingness can come from an intrinsic belief that using research is the "right" approach, or from extrinsic incentives to behave in a certain way. It is beyond the scope of this analysis to discuss in detail the authenticity of reported willingness, but it remains an important area for further study.
- **Relationships:** Trust and mutual understanding between and within different communities are important outcomes of relationships that promote quality research engagement (Rickinson et al., 2020[19]). More broadly, trust in research itself enhances the credibility of the findings, which can be both a product and a cause of interpersonal relationships between the research community and policy makers/practitioners (Gu et al., 2021[23]). This has long been recognised as crucial for implementing evidence-based interventions in the health sector (Lanham et al., 2009[24]; Albers et al., 2021[25]). Interactions between decision makers are an important route to achieving a shared understanding of which evidence is most appropriate and can contribute to building professional standards of what fit-for-purpose evidence looks like (Köster, Shewbridge and Krämer, 2020[9]). The components of this dimension speak to the quality of relationships between policy makers/practitioners and researchers.

Figure 3.1. The landscape of culture in respondent systems

Percentage of systems agreeing or strongly agreeing with statements related to research engagement culture, 2021.



Notes: Data show the percentage of respondent systems agreeing or strongly agreeing with the given statement, for either policy makers or practitioners in their education system. Statements are grouped based on the dimensions of research engagement culture: Motivation, Willingness and Relationships. Data collected at a national and sub-national level. N = 26 for policy makers, 20 for practitioners.
Statements are ranked within each group in descending order of the percentage of systems agreeing or strongly agreeing with them for policy makers.
Source: OECD *Strengthening the Impact of Education Research* policy survey data.

StatLink https://stat.link/19paij

Overall, motivation is the strongest dimension of research engagement culture and relationships are the weakest across respondent systems. At the level of individual systems, ministries of education often reported policy makers' and practitioners' relationships and willingness being at similar levels. However, when it comes to motivation, ministries more often reported these to be different for policy makers and practitioners.

Ministries of education most commonly agreed with statements related to the **motivation** to use research among both policy makers and practitioners. It is particularly encouraging that most respondent systems reported that using education research is important for both policy makers and practitioners. In some systems, this indicator of intrinsic motivation does not mean there is an expectation (i.e. political or social pressure) to use education research. For example, a diverse group of six systems (Belgium [Flemish Community], Colombia, Hungary, Lithuania, the Netherlands and South Africa) reported that, despite research engagement being important for policy makers, the systems lack a strong expectation to actually use research in policy making. A mix of intrinsic and extrinsic motivation factors is more likely to lead to greater engagement with research. This could mirror the decision to enter the teaching profession, the general pedagogical knowledge and the professional development of teachers, where both intrinsic and extrinsic factors play a role (König, 2017[26]; Lauermann, 2017[27]). However, ascertaining such relationships would require a more complex design of indicators.

Five respondent systems agreed that there was an expectation to use research in policy making but did not agree that there was political will to do so. These were New Zealand, the Slovak Republic, Slovenia and Switzerland (Appenzell Ausserrhoden and Zurich). Interestingly, the systems that exhibited this distinction were entirely different for practice (Belgium [Flemish Community], Costa Rica, South Africa, Switzerland [Nidwalden] and the Republic of Türkiye). This suggests that the extent of political will to use research is not always the same in the policy and practice contexts within a system, providing evidence to support the hypothesis of Burns and Schuller (2022[28]) about differing sources of motivation for policy makers and practitioners to engage with research depending on the system context.

The extent of **willingness** to use research can make the difference between low- and high-quality use, as working with evidence requires the disposition to be open to a range of interpretations [Earl and Timperly (2009[29]) in Rickinson et al. (2020[19])]. Willingness to use research to challenge preconceived notions is a form of introspection and self-criticism, closely aligned with individual and organisational learning. More than half the ministries reported that practitioners were willing to learn and try new things when it comes to research use. However, some of those systems did not agree that they were also willing to use research to challenge preconceived notions. This was the case in Colombia, Hungary, Portugal, Switzerland (Zurich) and Türkiye. Colombia and Portugal also reported this way for policy makers. This may mean that some ministries of education have the perception that willingness to learn new skills and methods exists on the condition that this new knowledge does not fundamentally challenge preconceived notions of what education practice or policy should be. It has long been recognised that a culture closed to challenging the status quo cannot promote the open-ended inquiry needed to use research (Sharp et al., 2006[30]).

Despite the importance attached to trusting **relationships** when it comes to engaging with research (OECD, 2007[31]; Mitton et al., 2007[32]; Ward, House and Hamer, 2009[33]; Rickinson et al., 2022[16]), levels of trust are low according to the survey responses. Less than half of the respondent systems agreed that both researchers and policy makers/practitioners have a shared understanding of education research and its use. Sharing a common understanding of research means developing agreement around which evidence is fit-for-purpose for which tasks and how it is best used in concrete situations (for example, designing professional development) (Köster, Shewbridge and Krämer, 2020[9]). Good relationships are an important way of encouraging a shared understanding of research, promoting the production of relevant research and ensuring that there are realistic expectations for its use. Respondent systems that did report mutual understanding generally also reported high levels of trust in other areas.

Implementing interventions targeting one or several dimensions of a culture of research engagement necessitates focusing on the resources and knowledge needed to support such a culture. In this vein, the city of Amsterdam recently launched an initiative supporting the relationships between researchers and practitioners and the motivation and knowledge of these actors to achieve an evidence-informed improvement of the local educational system. Box 3.1 outlines this initiative.

Box 3.1. EducationLab and the Knowledge Infrastructure for Primary Schools in Amsterdam project

EducationLab is a Dutch research consortium launched in 2020 which aims to build infrastructure for experimental research and foster the use of scientific evidence in educational policy and practice. EducationLab supports two labs for policy (Teacher Lab and Language Lab) and the Knowledge Infrastructure for Primary Schools in Amsterdam (ONA) project for practice.

ONA kicked off in September 2022, supported by the municipality of Amsterdam, the association of school boards of primary and special education in Amsterdam (BBO), two of the largest publicly funded research universities (VU Amsterdam and the University of Amsterdam) and the University of Maastricht. It aims to tackle two main challenges faced by Amsterdam's primary education:

1. declining performance and increasing illiteracy, especially among students with low-educated parents;
2. a qualitative and quantitative shortage of teachers and school leaders.

The project focuses on setting up a knowledge infrastructure for primary education that will enable scientists, primary teachers and school leaders, and (municipal) administrators to generate sound scientific knowledge and develop evidence-informed practices to achieve the sustainable improvement and innovation of Amsterdam's city centre.

To achieve this, ONA focuses on:

- Knowledge culture: Strengthening a learning culture in schools, with growing support and enthusiasm for evidence-informed working.
- Knowledge use: Providing accessible and relevant knowledge about proven effective approaches in education and supporting its share and use through professional development on evidence-informed approaches.
- Knowledge creation: Enhancing research to be conducted into solutions for the biggest challenges in Amsterdam's context.

In addition, ONA is setting up a replicable prototype of the knowledge infrastructure for primary education that can also be informative for other regions and education sectors with similar objectives.

Source: ONA (n.d.[34]), *Educational Knowledge Network Amsterdam (ONA)*, https://ona.amsterdam.

A remark on cultural barriers to research engagement

The policy survey also asked ministries about a handful of barriers to using research in educational policy and practice. The core analysis of these featured in our first volume (OECD, 2022[17]), which identified three cultural barriers:

1. "lack of broader political will to use research" (policy only);
2. "lack of openness to new ideas from research";
3. "lack of willingness to use research".

Interestingly, these cultural barriers were the least commonly reported category of barrier by ministries, whereas organisational and structural barriers, such as lack of time and lack of dedicated mechanisms, were the most commonly reported in policy and practice. In policy making, three-quarters of the cultural barriers reported in the whole sample were reported by ministries also reporting the lowest levels of

satisfaction with the extent of research use (see Table 3.1). The remaining quarter was ministries reporting the highest levels of satisfaction.

This clustering of cultural barriers at the extremes of both high and low satisfaction within the sample might indicate a heightened perception of the importance of culture in respondent systems reporting them.

Table 3.1. Cultural barriers and satisfaction with research in respondent systems

Rank assigned to cultural barriers to research use by systems and their average satisfaction with research use in policy, 2021.

Cultural barrier	Reported ranking																	
Lack of broader political will to use research		1	2	2														
Lack of organisational openness to new ideas from research					2													
Policy makers' lack of willingness to use research																		
Average level of satisfaction with research	5	5	4	4	4	4	4	4	4	3.8	3.8	3.8	3.5	3.5	3.3	3	3	3
Country/system	*Finland*	*Chile*	*United States (Illinois)*	*Switzerland (Appenzell A.)*	*Canada (Saskatchewan)*	*Switzerland (Nidwalden)*	*Hungary*	*Switzerland (St. Gallen)*	*Canada (Quebec)*	*Austria*	*Norway*	*Türkiye*	*Switzerland (Lucerne)*	*Portugal*	*Switzerland (Obwalden)*	*Iceland*	*Sweden*	*Switzerland (Zurich)*

Cultural barrier	Reported ranking																	
Lack of broader political will to use research						3	6				6		3	1	3	3	1	1
Lack of organisational openness to new ideas from research							5					4			6		3	
Policy makers' lack of willingness to use research														3		2		2
Average level of satisfaction with research	3	3	3	3	3	3	3	2.8	2.8	2.5	2.5	2.5	2.5	2.5	2.3	2.3	2	1.5
Country/system	*Estonia*	*Colombia*	*New Zealand*	*Lithuania*	*United Kingdom (England)*	*Japan*	*Costa Rica*	*Denmark*	*Belgium (French Comm.)*	*Spain*	*Latvia*	*Slovenia*	*South Africa*	*Czech Republic*	*Belgium (Flemish Comm.)*	*Slovak Republic*	*Netherlands*	*Switzerland (Uri)*

Notes: The first three rows show the rank (from 1st to 6th) assigned by each system to the given barrier to increasing and improving the use of education research in policy making related to culture. The fourth row indicates the average level of satisfaction of respondent systems with four aspects of research use in policy making ("The extent to which policy makers use research in policy processes", "The ways in which policy makers use research", "The ways in which policy makers access research", and "The extent to which policy makers evaluate the quality of research they use"), using a 5-point Likert scale (from 1. "Not at all satisfied" to 5. "Highly satisfied") for each statement. Data collected at the national and sub-national levels. "Appenzell A." refers to the Swiss canton of Appenzell Ausserrhoden. "Flemish Comm." and "French Comm." refer to the Flemish and French Communities of Belgium, respectively. N = 36.
Systems are ranked in descending order of average level of satisfaction with research use in policy making.
Source: OECD *Strengthening the Impact of Education Research* policy survey data.

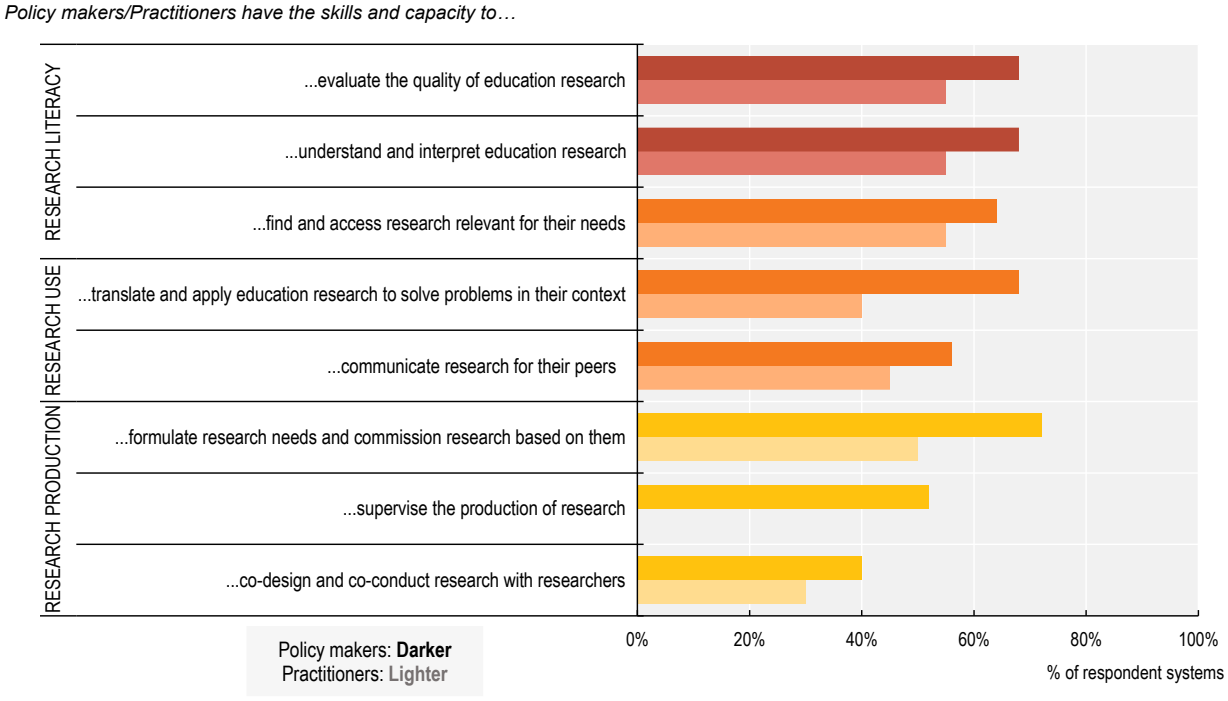
StatLink https://stat.link/rov27h

Skills and capacity for research engagement

A culture of quality research engagement cannot exist without adequate skills. The policy survey asked about policy makers' and practitioners' skills to engage with research. The survey measured these perceptions on a 5-point Likert scale, ranging from "Strongly disagree" to "Strongly agree", in response to eight statements (Figure 3.2).

Figure 3.2. The landscape of research engagement skills in respondent systems

Percentage of systems agreeing or strongly agreeing with statements related to research engagement skills, 2021.



Notes: Data show the percentage of respondent systems agreeing or strongly agreeing with the given statement, for either policy makers or practitioners in their education system. Statements are grouped based on the dimensions of research engagement skills: Literacy, Use and Production. The statement "…supervise the production of research" was only asked in relation to practitioners. This was done based on the extensive research done on the role of practitioners engaging with research. Data collected at a national and sub-national level. N = 25 for policy makers, 20 for practitioners.

Statements are ranked within each group in descending order of the percentage of systems agreeing or strongly agreeing with them for policy makers.

Source: OECD Strengthening the Impact of Education Research policy survey data.

Strengthening the Impact of Education Research policy survey data.

StatLink https://stat.link/icjadl

This chapter uses the concept of research engagement defined in (OECD, 2022[17]) to group each of the statements into three dimensions of research engagement:

1. **Research literacy:** This dimension draws on definitions established in the healthcare and education sectors, which describe an individual's competence in finding, accessing, understanding and critically evaluating research (Jakubec and Astle, 2021[35]; BERA, 2014[36]). This includes familiarity with research methods, the latest research findings, and implications for both policy and practice. These skills allow an individual to make sense of research findings to inform, develop and translate ideas into practice in a way that is meaningful to their context.
2. **Research use:** The core components of research use are broadly defined since the use of research can have a wide variety of purposes, including instrumental, conceptual, strategic and symbolic (Weiss, 1979[37]). However, research use is always directed at solving problems (Backer, 1991[38]). An important, and often forgotten, part of solving problems is understanding the nature of the problem in the first place. There is often the temptation among policy and practice to look for immediate (and perhaps poorly chosen) solutions before a proper diagnosis of the problem can be

performed (Van Klaveren and Cornelisz, 2023[39]). Quality research use also requires understanding its relevance for decision making through translation, as well as how it can be shared with decision makers with sensitivity to how individuals might respond to research findings (Farley-Ripple, Oliver and Boaz, 2020[40]). Although research use has been seen as a part of research literacy (Evans, Waring and Christodoulou, 2017[41]), it is more often conceptualised as a distinct process, centred on translating and applying research to specific questions as well as communicating research to colleagues.

3. **Research production:** This dimension encompasses statements relating to how research is produced. It captures aspects of production that are most relevant for practitioners' and policy makers' daily work (i.e. formulating research needs, commissioning, supervising, co-designing or co-conducting research). As discussed in Chapter 2, more evidence needs to be gathered on the feasibility and usefulness of policy makers' and practitioners' widespread involvement in research.

Overall, more than one-quarter of the responding ministries reported that policy makers do not have sufficient skills and capacity across all three dimensions of research engagement. Almost half of the respondent systems report this for practitioners. Both practitioners' and policy makers' skills in co-designing and co-conducting research with researchers were lacking in the largest number of respondent systems. Interestingly, compared to culture, there are greater differences between policy and practice when it comes to each of the dimensions of skills, with ministries reporting practitioners having noticeably lower skills levels. In particular, policy makers and practitioners were often regarded as having very different levels of skills when it comes to translating and applying relevant research and formulating research needs. This may be because the data were reported by ministries, which may either have a more lenient perception of policy makers than practitioners or a more accurate perception of policy makers' skills than those of practitioners.

Ministries perceived that practitioners' and policy makers' **research literacy** skills were the strongest of all the dimensions. A large majority agreed that policy makers had adequate research literacy skills in all three statements. However, this was not the case for Colombia and Latvia, which reported that policy makers were able to understand and evaluate research but lacked the skills to find and access it, and Switzerland (St. Gallen), which responded that the opposite was true in its context. When it comes to practice, there was a greater variation in responses and over one-third of ministries did not agree with all three research literacy statements. Two systems perceived that practitioners did not have sufficient skills to understand and/or evaluate research, despite being able to find and access it (the Netherlands, and Switzerland [Zurich]). However, Iceland and the United Kingdom (England) reported that the opposite was true and low level of practitioners' skills to find and access research were a challenge, rather than their ability to understand and evaluate it.

When it comes to **research use**, most ministries reported that policy makers have the skills to translate, apply and communicate research. A small group (Colombia, the Slovak Republic, Switzerland [Nidwalden] and Türkiye) felt that policy makers did not have adequate skills to communicate research but did have adequate skills to translate and apply it to their contexts. The opposite was true in Switzerland (Zurich). When it comes to practitioners, there were overall fewer ministries agreeing that practitioners had adequate research use skills, and most did not agree with both statements in this dimension. For example, Hungary and Iceland both felt practitioners were able to translate and apply findings but not communicate research to their peers. Although respondent systems generally felt that research use skills were stronger among policy makers compared to practitioners, only skills relating to translating and applying education research results to solve problems in their context had statistically significant differences (see Table 3.A.1. Annex 3.A).

Finally, only around one-third of the ministries agreed with all three statements related to **research production** in policy. Just under a third agreed with only two of the statements. For instance, the

Netherlands, New Zealand and the United Kingdom (England) only reported policy makers to be able to formulate their research needs and supervise its production. However, they disagreed that policy makers were able to participate in designing and/or conducting research. Involving policy makers and practitioners in research production can be beneficial in terms of increasing the relevance of the research produced. However, there are unanswered questions about how desirable and feasible it is for these skills to be widespread among individuals working in policy and practice (for a deeper discussion, see Chapter 2). A minority of the ministries agreed with one statement and just under one-third did not agree with any statements relating to policy makers. For example, Switzerland (Zurich) agreed that policy makers can formulate their research needs but strongly disagreed that they have the skills to supervise, co-design and co-conduct research. When it comes to practice, just over a quarter of the ministries agreed with both statements and half did not agree with either statement. The remainder only agreed with one statement. For example, Colombia and Latvia reported practitioners to be able to formulate their research needs but disagreed that they have the skills and capacity to participate in co-designing or co-producing research. Indeed, the survey data suggest it is far more common for policy makers and practitioners to have the skills to engage with research in ways other than its production. Although respondent systems generally thought that research production skills were stronger among policy makers compared to practitioners, skills relating to formulating research needs showed the only statistically significant difference (see Table 3.A.1. Annex 3.A).

Box 3.2 outlines two competence frameworks developed by the European Commission's Joint Research Centre to increase research engagement in policy. The frameworks take a comprehensive view and target multiple facets of policy makers' and researchers' skills and capacities.

Box 3.2. The Joint Research Centre's competence frameworks

The Joint Research Centre (JRC) is a department of the European Commission that provides independent, evidence-based knowledge to support European Union policies to positively impact society.

The JRC developed two competence frameworks tailored to decision makers' and researchers' needs to increase capacities for effective policy making. The first is designed to guide policy organisations on the relevant competences for innovative, effective and evidence-informed policy making. The second is aimed at research organisations contributing to policy making with evidence and advice.

Competence Framework for Innovative Policy Making

The framework describes the level of competence expected for a generalist policy maker, rather than a professional working in a specialised role (e.g. knowledge broker, data analyst).

It considers 36 competences divided into 7 clusters that enable innovative policy making and constitute a collective set of competences that are relevant for policy making and the different roles within the profession (e.g. a team or unit composed of different roles).

For instance, the cluster "Work with evidence" considers the competences of scientific and data literacy; identifying evidence needs; connecting to experts; gathering evidence; assessing evidence; and working with data and models.

Competence Framework for Science for Policy – or "Science4Policy"

Formal university education and doctoral programmes rarely cover the competences required to achieve a meaningful policy impact. Possessing these competences can empower researchers to ensure that the most robust evidence is provided and understood in good time by policy makers to be considered during the policy cycle.

The JRC mapped these competences in the "Science4Policy" Competence Framework. It consists of five clusters, each of which is made up of three to seven competences. The five clusters are: 1) understand policy; 2) participate in policy making; 3) communicate; 4) engage with citizens and stakeholders; and 5) collaborate.

Link between the two frameworks

While the two competence frameworks differ in terms of audience and scope, they are both interdependent and overlapping. This complementarity reflects the competences needed by both researchers and decision makers to interact and develop effective evidence-informed policy making. Competences in collaboration, communication and stakeholder engagement are pertinent for both contexts and thus featured in both frameworks.

Sources: European Commission (2023[42]), "Joint Research Centre", web page, https://commission.europa.eu/about-european-commission/departments-and-executive-agencies/joint-research-centre_en; European Commission (2023[43]), "Supporting policy with scientific evidence", web page, https://knowledge4policy.ec.europa.eu/projects-activities/competence-frameworks-policymakers-researchers_en; Schwendinger, Topp and Kovacs (2022[44]), *Competences for Policymaking: Competence Frameworks for Policymakers and Researchers Working on Public Policy*, https://doi.org/10.2760/642121.

To what extent are systemic enablers of culture and skills present in education systems?

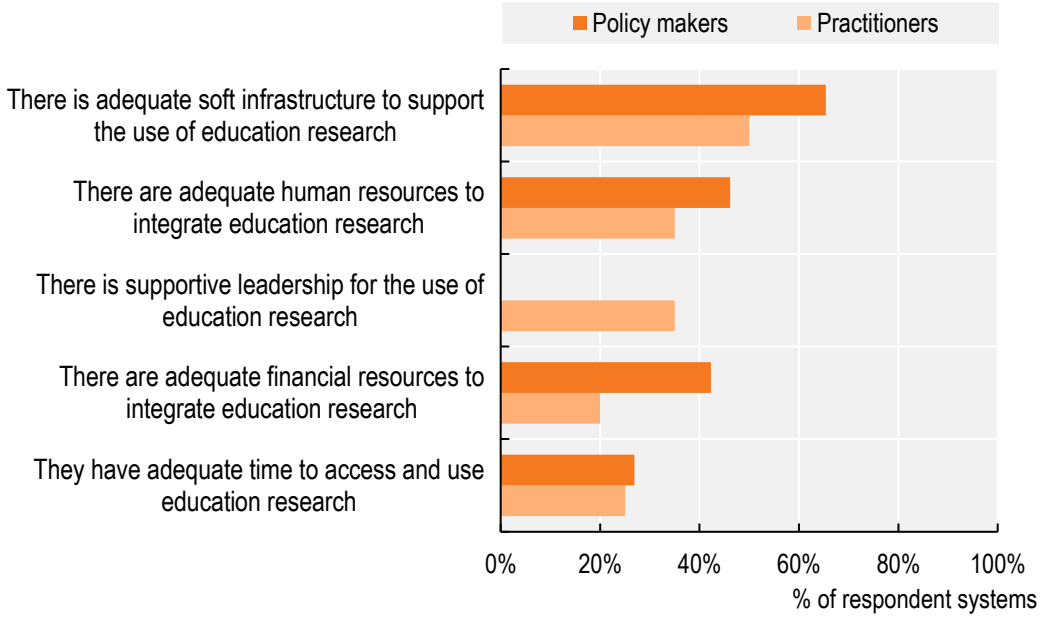
Integrating research into practice relies on the interplay between culture, skills, mindsets, relationships and structures within schools (Maxwell, Sharples and Coldwell, 2022[45]). A research use culture is underpinned by appropriate organisational structures, systems and resources (Brown and Greany, 2018[46]). The policy survey responses show that these enabling factors are overall lacking.

Resources for research engagement

A culture of research engagement requires sufficient human and financial resources, including organisational leadership, structures, tools, resources and dedicated time. For example, supportive leadership has been found to be a major prerequisite to a change in research use culture in schools (Gu et al., 2021[23]). Leaders can be important role models for a research engagement culture while also impacting the availability of other resources. For instance, leaders have been reported to have the authority to carve out dedicated time and space where organisational routines and collaborative work around research can take place in schools (Godfrey, 2017[15]). Moreover, the combination of role models, structures and resources that prioritise open and transparent discussions and encourage experimentation can be a powerful learning tool (Burns and Köster, 2016[47]).

Figure 3.3. Resources for using research in policy and practice

Percentage of systems agreeing or strongly agreeing with statements related to resources for using research, 2021.



Notes: Data show the percentage of respondent systems agreeing or strongly agreeing with the given statement, for either policy makers or practitioners in their education system. The statement "there is supportive leadership for the use of education research" was only asked in relation to practitioners. This was done based on the extensive research done on the role of school leaders in shaping education practice. Data collected at a national and sub-national level. N = 26 for policy makers, 20 for practitioners.
Statements are ranked in descending order of the percentage of systems agreeing or strongly agreeing with them for policy makers.
Source: OECD *Strengthening the Impact of Education Research* policy survey data.

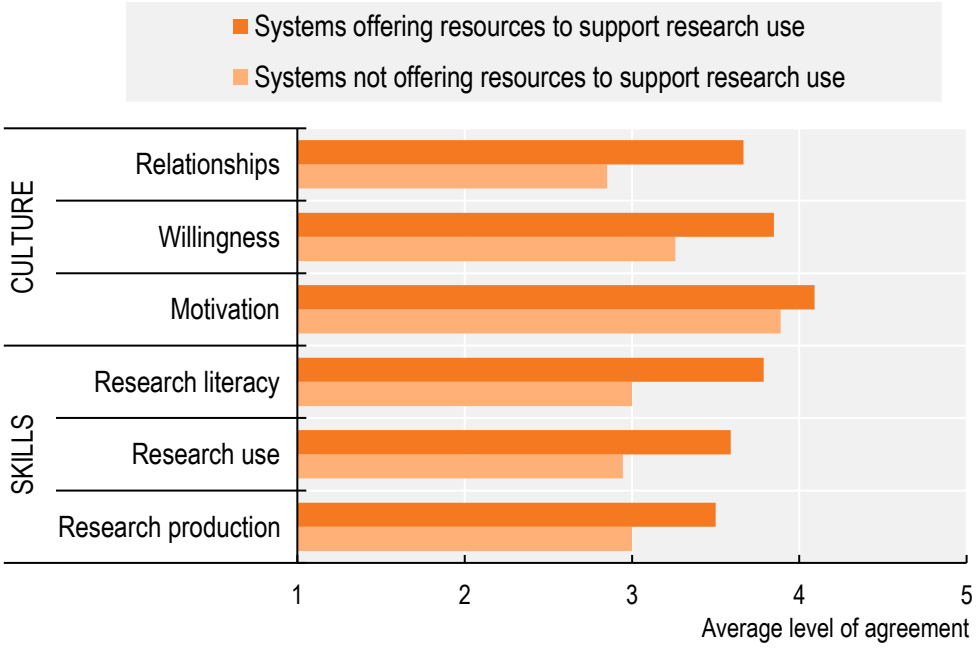
StatLink https://stat.link/6thvpr

Interestingly, more than twice as many respondent systems perceived there was sufficient soft infrastructure compared to adequate time to engage with research. In the healthcare sector, well-resourced networks, databases, journal subscriptions and collaborative forums have enabled healthcare professionals to use time more efficiently (NHS Health Education England, 2020[48]). However, they require a minimum level of financial and human resources to do so. Some education ministries clearly reported that the current level of soft infrastructure, although adequate, does not actually reduce the burden of time for policy makers or practitioners.

A lack of mechanisms to support practitioners' research engagement was reported by over 60% of the ministries. Our last report provided a detailed look at the prevalence of individual mechanisms (OECD, 2022[17]). However, of direct relevance to this chapter is the marked difference in terms of culture and skills between systems that reported mechanisms offering resources to support practitioners' research use and those that did not. Systems that reported the presence of these mechanisms also reported higher levels of the culture and skills dimensions within practice (Figure 3.4). All these differences were statistically significant, except for motivation and research production. Of course, the mix of resources and mechanisms needed to support research engagement among policy makers and practitioners will likely vary and depend on the system context. This reality is also frequently acknowledged in the health sector (Freebairn et al., 2017[49]).

Figure 3.4. Research engagement culture and skills, and mechanisms offering resources to support research use

Level of agreement of two groups of respondent systems with culture and skills dimensions in practice, 2021.



Notes: Data compares two groups of systems. One group answered positively when asked if they had mechanisms which offer resources to support research use in practice; the other group responded negatively. "Culture" indicates the average level of agreement on a 5-point Likert scale (from 1. "Strongly disagree" to 5. "Strongly agree") of respondent systems with statements related to research engagement culture among practitioners, grouped by dimensions (see Figure 3.1). "Skills" indicates the average level of agreement on a 5-point Likert scale (from 1. "Strongly disagree" to 5. "Strongly agree") of respondent systems with statements related to research engagement skills among practitioners, grouped by dimensions (see Figure 3.2). Data collected at a national and sub-national level. N = 20.
Source: OECD *Strengthening the Impact of Education Research* policy survey data.

StatLink https://stat.link/3cw6np

Learning opportunities

Learning opportunities are crucial to empower individuals with the skills and knowledge to engage with research. Although learning opportunities are a challenge for both policy makers and practitioners in many systems, a lack of learning opportunities is more often perceived for practitioners than for policy makers.

The policy survey asked about the extent to which policy makers had access to learning opportunities to develop their research knowledge and skills. Almost 40% of the ministries agreed or strongly agreed that there were extensive learning opportunities. This leaves well over half of the ministries either disagreeing or providing a neutral response, indicating significant scope for at least increasing the visibility of any learning opportunities that may exist for policy makers in most respondent systems. However, it is not just the quantity of learning opportunities that is relevant. Poor quality learning opportunities can be a barrier to individuals acquiring the skills to effectively engage with research (Humphries et al., 2014[50]). Regarding their quality, the nature and focus of these learning opportunities are crucial, as complementary cross-cutting competences are required for both policy makers and researchers.

Several initiatives have focused their efforts on improving policy makers' learning opportunities to address their research use skills and capacity in different education systems. Examples from New Zealand and the United Kingdom illustrate this (Box 3.3).

Box 3.3. Research engagement initiatives for policy makers

Nesta – United Kingdom

Launched in 1998, Nesta was the first-ever publicly supported national endowment in the United Kingdom and is currently an independent innovation agency. It proposes a set of programmes, policies and research to promote research engagement in policy making. Some of these are discussed below.

CAPE pilot

The Capabilities in Academic Policy Engagement (CAPE) is a research project that aims to improve the use of evidence and academic expertise when policies are created to ensure effective policy outcomes that generate meaningful social impact. Launched in February 2022, the project designs, tests and evaluates several interventions (e.g. events, funding, fellowships, training) to improve engagement between researchers and policy makers. It promotes the use of an embedded evaluation team that focuses on the structures, mechanisms and incentives needed to best deliver what policy stakeholders want, embracing the opportunities of research-policy partnerships.

Evidence Masterclass

The Evidence Masterclass is a range of training courses focused on developing policy makers' capacity to use research. It has been delivered since 2017 to public sector leaders, managers and civil servants from both local and national government departments. Participants learn how to find research relevant to their policy question, develop their ability to assess the quality of research, practise their new skills through simulations, and strengthen their confidence in using evidence.

Engaging with Evidence toolkit

Engaging with Evidence is an open access toolkit for policy makers which aims to build capacity to harness data, information and evidence to inform real problems and recognise good-quality evidence for policy. The toolkit provides a range of interactive activities that will determine what type of evidence and expertise is needed for each specific purpose, and the potential processes and methodologies that might support this work.

The Policy Project – New Zealand

The New Zealand Policy Project aims to improve the quality of policy advice by ensuring it is based on the best available evidence and insights. The Policy Project builds and maintains an active policy community and equips policy makers with analytical tools, frameworks and information. Two of the tools are discussed below.

Policy improvement frameworks

The Policy Quality framework presents a set of standards that specify what quality policy advice means. The standards increase accountability when developing new advice or reviewing existing advice.

The Policy Skills framework sets out the knowledge, applied skills and behaviours expected from policy makers to deliver quality policy advice.

Policy Methods Toolbox

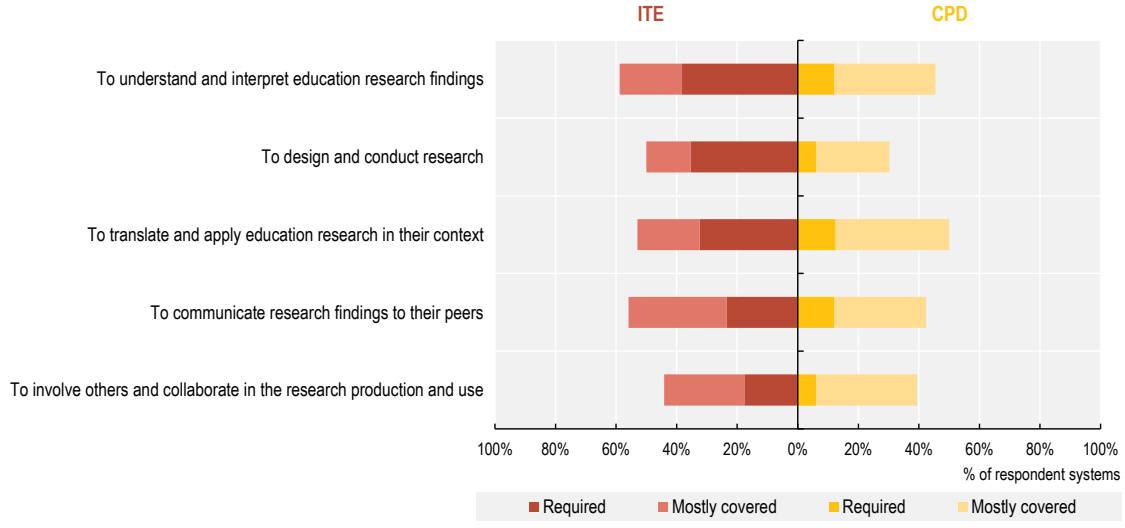
The toolbox acts as a repository of policy development methods helping policy makers identify the right approach for their policy initiative. It recommends different themes, such as behavioural insights, community engagement and design thinking, depending on the stage and focus of the initiative.

Sources: Nesta and Alliance for Useful Evidence (2015[51]), *Using Research Evidence: A Practice Guide*, https://media.nesta.org.uk/documents/Using_Research_Evidence_for_Success_-_A_Practice_Guide.pdf; Alliance for Useful Evidence (2018[52]), *The Evidence Masterclass: Course Description*, https://wtgrantfoundation.org/wp-content/uploads/2018/07/Evidence-Masterclass-Course-Description.pdf; DPMC (2022[53]), "The Policy Project", web page, https://www.dpmc.govt.nz/our-programmes/policy-project; Tennant and Morgan (2022[54]), "Using evidence to make policy more effective", web page, https://www.nesta.org.uk/project-updates/using-evidence-make-policy-more-effective; Morgan et al. (2023[55]), *Engaging With Evidence Toolkit*, https://www.nesta.org.uk/toolkit/engaging-with-evidence-toolkit.

When it comes to practitioners, the survey asked about the extent to which skills related to research engagement were taught in initial teacher education (ITE) and continuing professional development (CPD) (Figure 3.5). Only around one-third of the ministries reported that training future teachers to understand and interpret research findings is required in all ITE programmes, and less so in CPD. Furthermore, skills related to collaborating in research production and use are not required to be taught in ITE in four out of five respondent systems.

Figure 3.5. Skills taught in initial teacher education and continuing professional development

Percentage of systems reporting skills as reported or mostly covered by ITE and CPD, 2021.



Notes: "ITE" refers to Initial Teacher Education. "CPD" refers to Continuing Professional Development. Data show the percentage of respondent systems that reported the given skills as "required" or "mostly covered" by ITE and CPD. Data collected at a national and sub-national level. N = 34 for ITE, 33 for CPD.
Skills are ranked in descending order of the percentage of systems reporting them as "Required" in ITE.
Source: OECD *Strengthening the Impact of Education Research* policy survey.

StatLink https://stat.link/ntp5hl

It is worth noting that systems reporting skills as required or mostly covered by ITE tended to report that this was the case for all the skills. This suggests that when systems do integrate research engagement

into teacher training, they tend to do it quite comprehensively. However, this is still rare. Revising curricula to include skills related to research engagement can be challenging but has been undertaken by some education systems. One case is the Estonian teacher standards reform and the University of Tartu teacher education curriculum revision, described in Box 3.4.

Box 3.4. Estonian teacher standards and initial teacher education programmes

First introduced in 2005, the national standards for the teaching profession were updated in 2013 in Estonia, following an interactive development that considered a diverse range of stakeholders (e.g. teacher educators, teachers, school leaders, local and national decision makers). The standards describe the professional activities involved in the teaching career and set out the knowledge, skills and attitudes necessary to be successful in the role. They inform curriculum design, assessment, recruitment and professional training.

Through accreditation processes awarding the right to higher education institutions to issue a teaching licence, the application of teaching standards is guaranteed. To obtain these licensing rights, higher education institutions must demonstrate that their teaching curriculum and programmes prepare teacher students for all the requirements stated in the mentioned standards. Regarding research engagement, the Estonian teaching standards require teachers to use and conduct research and reflect on their practice.

In parallel to the development of the new professional standards, the University of Tartu – one of the two leading research universities that provide initial teacher education in Estonia with the University of Tallinn – revised its teacher education curriculum in 2012-13. The review was motivated by previous accreditation reports, identifying as a key concern the lack of a general module of teachers' professional studies. Some capacities gained importance in the programme, such as building teacher candidates' research capacity, for example, through involvement in research projects. Teacher students are required to use and conduct research to improve their own teaching, suggesting that research engagement is, in fact, an active part of teaching training and activity.

The University of Tartu Institute of Education provides research-based pre-service training for teachers, special education teachers, speech therapists and social pedagogues. There is also an extensive in-service training programme for teachers, heads of schools and university teaching staff.

Estonian professional standards for teachers were updated in 2019-20, aiming for a more competence-based career structure. They focus more on digital pedagogy and inclusive education and prioritise the continuous education of teachers. Furthermore, they raised the requirements for entry into teacher preparation as well as teacher salaries.

Sources: University of Tartu (n.d.[56]), "Institute of Education in the University of Tartu", https://haridus.ut.ee/en; Révai (2018[57]); "What difference do standards make to educating teachers?: A review with case studies on Australia, Estonia and Singapore", https://doi.org/10.1787/f1cb24d5-en; OECD (2020[58]), *Education Policy Outlook Estonia*, http://www.oecd.org/edu/policyoutlook.htm; NCEE (2021[59]), "Top-performing countries: Estonia", https://ncee.org/country/Estonia.

In what ways are culture, skills and learning opportunities connected?

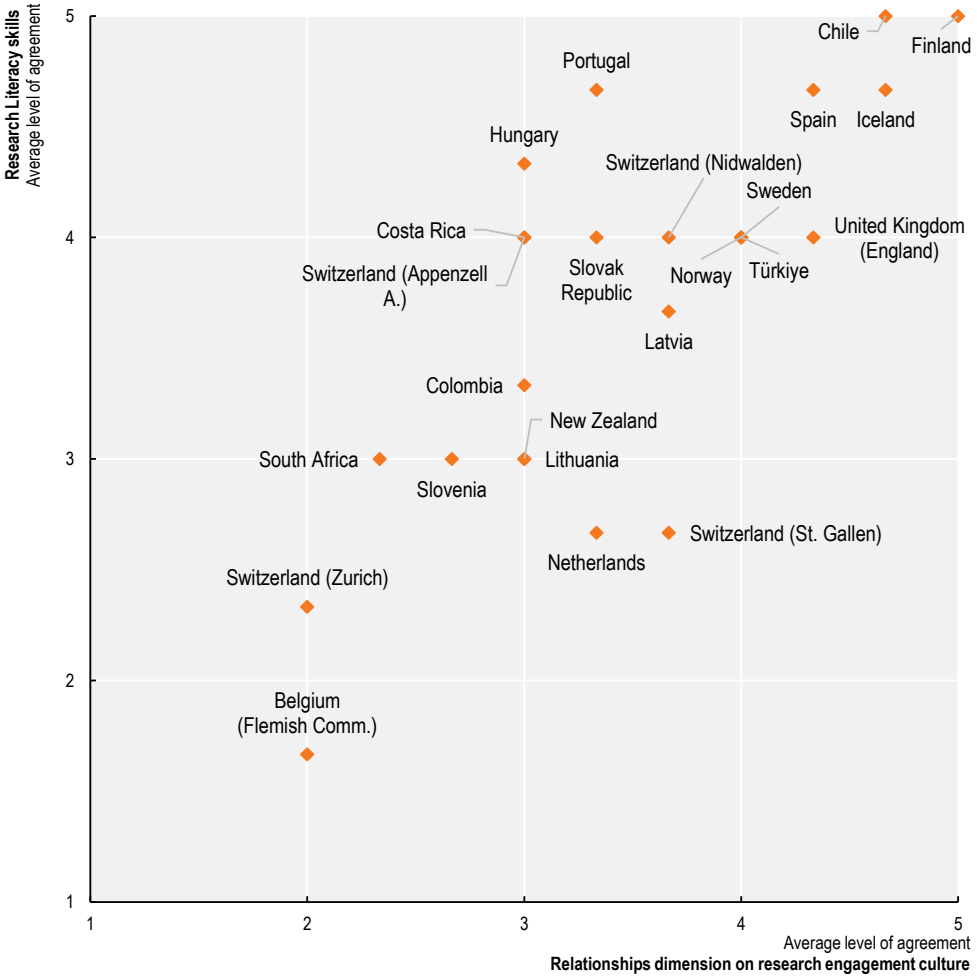
This section looks at relationships between the different themes related to culture and skills in the survey responses. See Annex 3.A for a description of the statistical tests and the results.

Culture and skills

The various aspects of culture and skills in policy seem to be strongly related.[3] For example, the higher the perceived levels of policy makers' research literacy, the more positive their relationships are with research and researchers (Figure 3.6). However, it is important to point out that, in this case, two-thirds of the systems still do not agree that policy makers' relationships with researchers are characterised by high levels of trust in research and mutual understanding (scores of less than four points).

Figure 3.6. Policy makers' research literacy and relationships with researchers

Level of agreement of respondent systems with statements related to research literacy skills and relationships, 2021.



Notes: The X-axis indicates the average level of agreement on a 5-point Likert scale (from 1. "Strongly disagree" to 5. "Strongly agree") of respondent systems with three statements related to the relationships dimension of a research engagement culture among policy makers (see Figure 3.1). The Y-axis indicates the average level of agreement on a 5-point Likert scale (from 1. "Strongly disagree" to 5. "Strongly agree") of respondent systems with three statements related to research literacy skills among policy makers (see Figure 3.2). Data collected at the national and sub-national levels. "Appenzell A." refers to the Swiss canton of Appenzell Ausserrhoden. "Flemish Comm." refers to the Flemish Community of Belgium. N = 24.
Source: OECD *Strengthening the Impact of Education Research* policy survey data.

StatLink https://stat.link/k1hur8

Resources, skills and culture

Respondent systems that perceive more adequate soft infrastructure also report that practitioners had greater levels of research literacy. This suggests that systems do recognise the role played by databases and journal subscriptions in providing access to research knowledge. It also indicates that networks and collaborative forums may play a valuable role, in line with the extensive literature on social processes and research engagement for practitioners. In this dataset, there were no statistically significant correlations between other resources and culture and skills. This may be puzzling, given the importance attached to resources in both the policy and practice literature and the differences in terms of culture and skills of the systems with mechanisms offering resources to practitioners. While this may simply be a limitation of the dataset, it may also suggest that current resources are not well-oriented towards fostering research engagement.

Conclusions and recommendations

This chapter explored the characteristics of research engagement culture and skills for policy makers and practitioners based on survey data from 37 education systems. A culture of research engagement was characterised by the three dimensions of motivation to use research, willingness to use research, and relationships with research and researchers. Skills were also characterised along three dimensions, related to research literacy, research use and research production. This chapter also sought to understand the connections between these dimensions and two systemic enablers, resources (human, financial, strategic and infrastructure) and learning opportunities for policy makers and practitioners.

Policy makers and practitioners are generally motivated to engage with research; however, many systems lack quality relationships to thoughtfully do so.

Despite the extensive literature emphasising the importance of viewing research engagement as a social process, practitioners, in particular, appear to lack the quality relationships needed. Systemic mechanisms promoting and supporting collaboration between policy makers, practitioners and researchers are crucial. However, they must be focused on promoting an environment where individuals have the time and space to come together and develop the trusting relationships needed to critically appraise research evidence and understand how it can be useful to them.

Research literacy skills are the most common skills among practitioners and policy makers; however, many other skills are still lacking, as well as learning opportunities.

Although most ministries report that practitioners' and policy makers' research literacy skills are sufficient, a significant number still report research literacy skills to be lacking. These skills are not necessarily intuitive, their development does not come naturally, and so they must be systematically taught and practised. To support a culture of research engagement, explicit, specific and adequate interventions must address educational systems' learning needs. Evidence-informed frameworks can help policy makers understand, track and tailor training regarding the research engagement skills of both policy makers and practitioners. These frameworks can then serve as tools for human resource strategies, including recruitment and individual and collective learning opportunities, including professional development.

The lack of adequate resources may be hindering the development of a research engagement culture and skills.

Respondent systems that indicated the presence of resources for engaging with research had noticeably stronger culture and skills. However, many systems reported that current resources are insufficient. Soft infrastructure is the most adequate resource according to ministries, and there was a link to levels of practitioner skills in the data, but its impact may be limited due to a lack of other resources. Human, financial and strategic resources are all interrelated and should work together to tackle big barriers, notably a lack

of time. More research is needed to understand these interconnections. Greater efforts should be given to dedicating time and space for the social processes behind research engagement to take root. Providing soft infrastructure should not be a box-ticking exercise; rather, it should support structured discussions among colleagues to promote quality relationships built around concrete challenges.

Policy and practice seem to face different challenges related to learning opportunities. Yet, more data are needed to demonstrate a connection between learning opportunities, skills and culture.

While policy makers appear better served than practitioners in terms of availability of learning opportunities, questions remain around the precise nature of learning opportunities and whether or not they are actually making a difference to culture and skills. Better understanding the content and quality of these programmes and how they are connected to skill needs would allow the improvement of intermediary activities, such as providing training in research. Further research should explore the nature of existing learning opportunities for both practitioners and policy makers to better map their current focus and intended impact with a view to increasing their overall quality.

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Annex 3.A. Statistical analyses

T-tests were calculated to see if there were any statistically significant differences between the items of research engagement culture and skills.

Annex Table 3.A.1. Relationships between research engagement culture items

Dimension		*Motivation*			*Willingness*			*Relationships*		
Items		*Using education research in the policy process is important for policy makers/ practitioners*	*Policy makers / Practitioners are expected to use education research in the policy process/ their practice*	*There is strong political will to use education research in policy/ practice*	*Policy makers/ practitioners are willing to use education research to question their ideas and preconceptions*	*Policy makers/ practitioners are willing to learn new skills for using education research*	*Policy makers/ practitioners are willing to try new ways to integrate education research into policy making*	*There is a high level of trust between policy makers/ practitioners and researchers*	*Policy makers/ practitioners and researchers have a shared understanding of education research and its use*	*There is a high level of trust in research amongst policy makers/ practitioners*
Number of respondent systems	***Policy***	26	26	26	26	26	26	25	26	26
	Practice	20	20	20	20	20	19	20	20	20
Average	***Policy***	4.46	4.04	3.73	3.50	3.69	3.73	3.52	3.27	3.65
	Practice	4.30	3.95	3.75	3.50	3.65	3.58	3.40	3.10	3.40
t-test (policy vs. practice)		**0.31**	**0.39**	**0.73**	**0.95**	**1.00**	**0.85**	**0.56**	**0.68**	**0.57**

Note: Data show the correlation coefficients with the following values of significance: * t < 0.1; ** t < 0.05; *** t < 0.01.
Source: OECD (2021[60]), *Strengthening the Impact of Education Research* policy survey.

Annex Table 3.A.2. Relationships between research engagement skills items

Dimension		Research Literacy			Research Use		Research Production	
Items		*To understand and interpret education research*	*To evaluate the quality of education research*	*To find and access research that is relevant for their needs*	*To translate and apply education research results to solve problems in their context*	*To communicate research for decision making*	*To co-design and co-conduct research with researchers*	*To formulate research needs and commission research based on needs*
Number of respondent systems	***Policy***	25	25	25	25	25	25	25
	Practice	20	20	20	20	20	20	20
Average	***Policy***	3.76	3.64	3.76	3.72	3.56	3.08	3.88
	Practice	3.50	3.25	3.55	3.25	3.35	3.15	3.40
t-test (policy vs. practice)		**0.31**	**0.21**	**0.40**	**0.06***	**0.43**	**0.81**	**0.07***

Note: Data show the correlation coefficients with the following values of significance: * t < 0.1; ** t < 0.05; *** t < 0.01.
Source: OECD (2021[60]), *Strengthening the Impact of Education Research* policy survey.

Notes

[1] Many responses to the survey were optional; this analysis will only report on answers given and will not make inferences regarding the number and composition of unanswered questions.

[2] These dimensions were constructed conceptually. The sample size did not allow for conducting factor analysis to confirm the constructs statistically.

[3] Although to note that the sample size did not allow for conducting factor analysis, therefore these findings are simply indications for further research.

4 The Dutch evidence journey in curriculum revision

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This chapter presents the use of knowledge within the Dutch Ministry of Education, Culture and Science based on a concrete policy case: the revision of the curriculum in primary and secondary education. Employing a framework for analysing "quality use of research evidence", the chapter shows what types of knowledge were applied in different stages of the revision process. It also describes the knowledge infrastructure surrounding this case and the culture within the ministry and the composition of the policy team. The analysis examines whether the provided (research) knowledge was appropriate and whether policy makers engaged with the evidence thoroughly and systematically.

Introduction

This chapter presents a reconstruction of how knowledge in general, and research knowledge in particular, was used in a specific policy case, the long-running policy initiative on curriculum revision. This policy initiative started in 2013 and was partly ignited by the reports of two strategic advisory councils that urged the government to assess and redesign the primary and secondary education curriculum. Both internal educational reasons and societal developments were driving the request for curriculum renewal. The curriculum revision process is particularly interesting because it was, and still is, a long trajectory that developed itself in a non-linear and sometimes even bumpy way, like so many policy initiatives in a field as highly complex as education. As this chapter will show, a variety of knowledge sources played a role during the renewal process. Furthermore, different sources of knowledge came to the fore in different stages. However, most of the time, a systematic appraisal of those different sources was lacking. This chapter will argue that for a thorough engagement with evidence, it is necessary to create specific structures and mechanisms within the ministry.

For the analysis, we applied the Quality Use of Research Evidence framework developed by Rickinson et al. (2020[1]) for investigating the use of knowledge in educational practice. The chapter will demonstrate that using this framework led to a more nuanced and rich perspective on the knowledge used during the policy process.

Before that, however, the chapter briefly describes the main characteristics of the Dutch education system and the most important elements of the knowledge infrastructure in education practice and policy.

Main characteristics of the Dutch educational system

One of the key features of the Dutch education system, guaranteed under Article 23 of the Constitution, is freedom of education, i.e. the right for any citizen to found schools and provide teaching based on religious, ideological or educational beliefs. The Dutch system also offers freedom of choice for students and their parents; they can choose the school that best fits their expectations and world views. The system contains both public schools as well as privately governed-publicly funded schools. Both types of schools are equally funded.

The Dutch education system is, therefore, a decentralised system with distributed responsibilities. The Ministry of Education, Culture and Science is responsible for national education policies. Boards are responsible for running the schools. “Freedom to organise teaching” means that schools are free to determine – within legal boundaries – what is being taught and how. The Ministry of Education, Culture and Science, however, sets quality standards that apply to both public and publicly funded schools since the ministry is ultimately responsible for the educational quality of schools. These standards prescribe the subjects to be studied; the attainment targets or examination syllabuses; and the content of national examinations, the number of teaching periods per year and the qualifications teachers are required to have, giving parents and pupils a say in school matters, planning and reporting obligations, etc.

The knowledge infrastructure: Actors and roles

A key actor in the knowledge infrastructure for education is the Netherlands Initiative for Education Research (NRO), a research funding organisation. The NRO funds fundamental or curiosity-driven research as well as policy and education practice-oriented research. In addition to the funding, the NRO is also tasked with disseminating and promoting the use of research. Among other activities, the NRO establishes thematic web pages on research, provides guidance reports and maintains a so-called

knowledge roundabout, an online platform where experts answer questions from practitioners and policy makers.

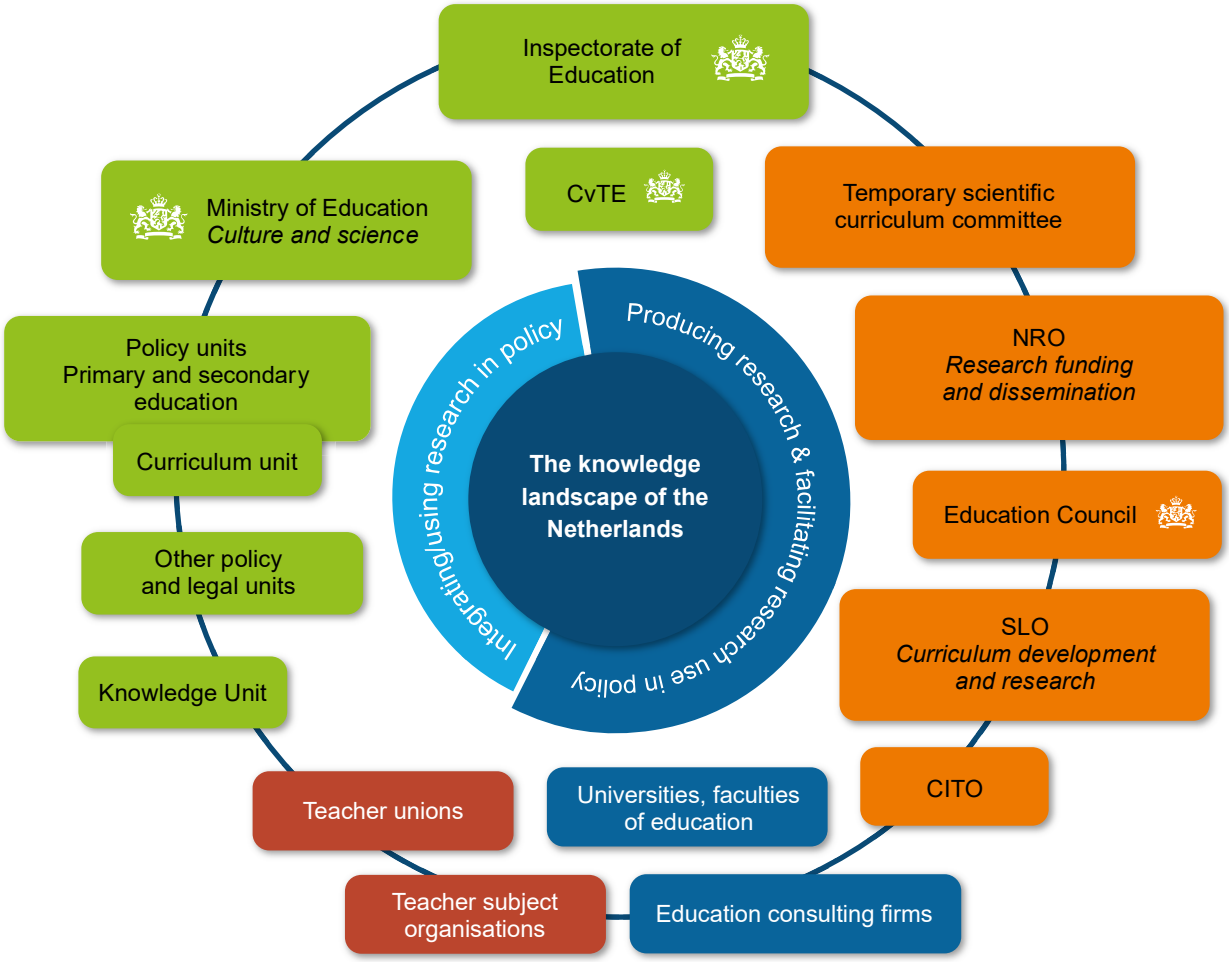
Other main parties include the Dutch Inspectorate of Education, which is responsible for the inspection and supervision of school governing boards and schools, and the Dutch Education Council, which advises the government and parliament on education policy and legislation. The council's work culminates in evidence-based studies and advisory reports focused on offering solutions for the long term.

Three quasi-governmental agencies are tasked with specific functions in the research and development infrastructure around schools and the ministry: Stichting Leerplan Ontwikkeling (SLO), Centraal Instituut voor Toetsontwikkeling (CITO) and College voor Toetsen en Examens (CvTE). The SLO is the Netherlands Institute for Curriculum Development. The SLO not only develops curricula but also performs research into the realisation of curricula in classrooms. CITO, the National Institute for the Development of Tests, gathers data on student performance from the CITO tests and examinations. Research and development is a core activity. The CvTE is the National Board of Tests and Examinations, responsible for the quality and proper administration of national tests.

At the central level, the Ministry of Education, Culture and Science's Knowledge Unit is responsible for the overall knowledge infrastructure. The knowledge advisors at the department work as brokers between research and policy and play an active role in advising policy makers during the different phases of policy development, particularly in integrating evidence in all phases.

In addition to the Knowledge Unit, research co-ordinators within the various policy directorates play an important role, particularly supporting policy makers with evaluations. The research co-ordinators form a network, which is co-ordinated by the Knowledge Department. Additionally, policy officers are supported by information specialists in the use of data. Figure 4.1 depicts the knowledge landscape and network of actors.

Figure 4.1. The knowledge landscape and actors



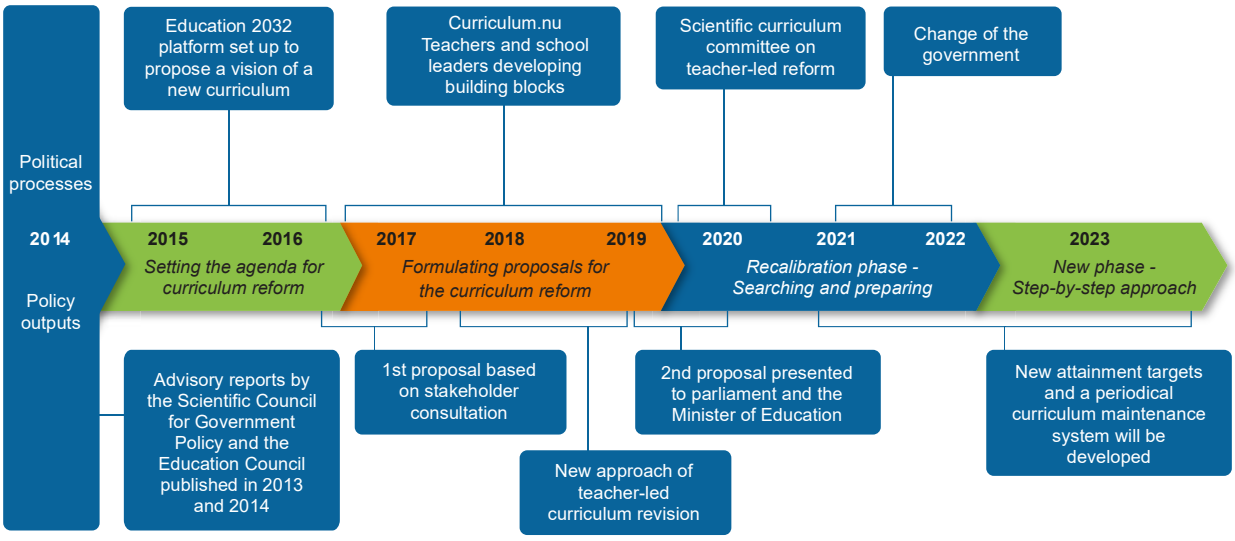
Notes: CvTE: National Board of Tests and Examinations; CITO: National Institute for the Development of Tests; SLO: Institute for Curriculum Development; NRO: Netherlands Initiative for Education Research. Green: governmental or government-funded institutions, departments and agencies; orange: independent national bodies; brown: research institutions and research consultancies; purple: practice-oriented bodies.

The case of curriculum revision

The story of curriculum revision in primary and secondary education illustrates the use and non-use of (research) knowledge in a concrete case. The case of curriculum renewal is interesting because different types of knowledge are involved in a highly politicised discussion about what students should learn. This section will first briefly sketch the revision trajectory before turning to the "knowledge arena" around the curriculum revision process and subsequently analyse the ways in which policy makers used the knowledge.

Broadly speaking, the curriculum revision process can be divided into three phases (Figure 4.2): the first phase was characterised by the highly participatory trajectory and subsequent publication of the advisory report *Education 2032*. In the second phase, the teacher-led development of so-called curriculum building blocks took centre stage, labelled as Curriculum.nu. After a rather critical assessment of the building blocks in parliament, and a political stand-still because of elections and the formation of a new government, we entered the current, third phase, a step-by-step approach to the revision.

Figure 4.2. Timeline of curriculum revision



The revision process started in 2014, partly based on the reports of two advisory councils. In response to both recommendations, the then State Secretary Sander Dekker gave the go-ahead to revise the curriculum of basic education in a letter to parliament on Future-oriented Basic Education. He established the so-called Education 2032 platform, led by a highly esteemed government advisor and senator. After a broad social dialogue, extensive stakeholder consultation, and the study of scientific insights and international comparisons, the committee published its report.

The report, however, received several criticisms in parliament (Box 4.1). Confronted with the critical position of the parliament, and after consulting teacher organisations and organisations of school boards, the State Secretary initiated a new approach: the teacher-led development of “building blocks” for the curriculum. The project was renamed Curriculum.nu.

Box 4.1. Critical voices in parliament

Members of parliament expressed criticisms concerning the curriculum revision process at various stages. Following the committee’s publication of a first proposal, some felt that teachers did not sufficiently support this initial report and that the report lacked scientific evidence. This criticism was partly inspired by teachers who were active on social media and were also invited to hearings in parliament.

In late 2019, several other points were raised in the debate. There was still concern regarding a perceived lack of scientific underpinning to the curriculum reform proposal and the issue of missing support among teachers. Additionally, parliament was worried about the necessary preconditions (time, space, resources) for implementation in a time of teacher shortages and high work pressure.

In 2018 and 2019, so-called developing groups, made up of teachers and school leaders from primary and secondary education, were busy formulating learning goals at regular intervals and consulting the field and the broader public. The results were presented to the Minister of Education end-2019, who sent the building blocks to parliament in December 2019.

Again, members of parliament were critical of the proposals (see Box 4.1). Several members of parliament insisted on establishing a Temporary Scientific Curriculum Committee to validate the proposals of the teacher-led teams. This committee was formed in September 2020 and published several reports in 2021

and 2022, including one about the usefulness of the proposals mentioned earlier and another report about the headlines of the revision of the curriculum goals.

In the meantime, the cabinet resigned and elections were held. As a consequence, the curriculum revision was declared "controversial" by the parliament and resulted in the development of the new curriculum coming virtually to a halt. Nevertheless, several discussions were held in parliament. Members of parliament continued voicing concerns about the over-ambition of a comprehensive reform and the support by teachers.

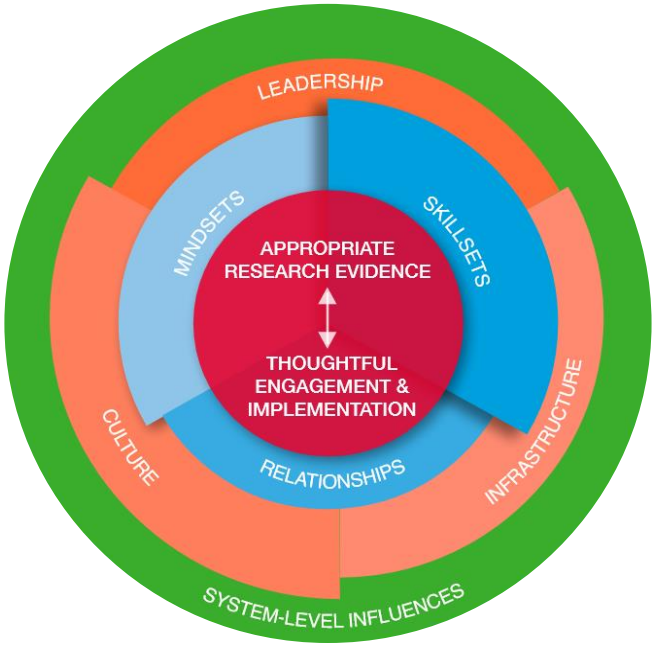
Only in 2022 did the newly appointed minister propose to parliament to revise the curriculum step-by-step, starting with the attainment targets for numeracy, literacy, digital skills and citizenship. Furthermore, the minister announced that he would develop a system of periodic curriculum maintenance to ensure that curriculum reform in the future takes place when necessary and more independently from political whim. Based on advice from the Scientific Curriculum Committee, this system is currently being developed.

The use of knowledge and evidence: A Quality Use of Research perspective

Analytical framework

This section briefly describes how various forms of knowledge were used by the policy teams who managed the curriculum revision process. We have applied the Quality Use of Research Evidence Framework (Figure 4.3), developed by the Australian researcher Mark Rickinson and his team (2020[1]). Although the framework was developed to assess the use of research knowledge in education practice, in our experience, it also proved to be highly valuable for self-assessment in policy processes.

Figure 4.3. The Quality Use of Research Evidence (QURE) framework



Source: Rickinson (2020[1]), *Using Evidence Better: Quality Use of Research Evidence Framework*, http://monash.edu/education/research/projects/qproject.

System-level influences

We will start our description with the outer ring. Several developments were relevant in the case of curriculum revision. In the beginning of the process, around 2013, the discourse on what could be called "future skills" was dominant. This discourse focuses on the changing society, economy and labour market, and the skills needed to flourish in a dynamic world. However, in the course of the revision process, the dominant discourse changed to one of lacking basic skills, particularly after the publication of the Programme for International Student Assessment's (PISA) results in 2018. PISA showed a sharp decline in reading skills in the Netherlands, which caused a lot of concern among politicians and influential opinion makers. In addition, the inspectorate repeatedly reported on decreasing basic skills, for example in its influential yearly *State of Education* report (Inspectorate of Education, 2022[2]). Additionally, the issue of teacher shortages became ever more urgent between 2013 and 2020. Combined with discussions about a heavy workload and teachers' salaries, this led to a waning appetite for a large-scale curriculum revision and paved the way for the step-by-step approach that is currently applied. Rather than a comprehensive revision at once, the curriculum is renewed subject by subject, starting with so-called basic skills: reading, mathematics, digital skills and citizenship skills.

Leadership, culture and infrastructure

A strong political-administrative orientation among directors-general, directors and heads of division within the ministry was observed. As the Advisory Council for Science, Technology and Innovation (AWTI) stated (2021[3]), much time and energy in the civil service is spent on incidents and short-term issues. This leads to a culture where political sensitivity is valued more than content expertise and knowledge, according to the AWTI. Human resource policies focus on recruiting and developing generalists and process specialists rather than recruiting content experts.

However, this is only one part of the story. There is also an undercurrent of strengthening the evidence base and investing in the knowledge infrastructure for both policy and practice. For example, in the case of curriculum revision, a research programme was developed together with the NRO, among others, to monitor and evaluate the introduction of the new curriculum.

In terms of leadership in the broader knowledge infrastructure, the ministry plays a leading role in arranging the system, facilitating the organisations to play their role in the system and regulating responsibilities. Specifically for the knowledge infrastructure in the domain of the curriculum, the Scientific Curriculum Committee stated that the ministry should more strongly co-ordinate and structure the "curriculum chain". According to the committee, knowledge ecosystem co-ordination was weak. There are several strong nodes of knowledge, like the SLO, the NRO and the inspectorate, but the links between those nodes are weak, resulting in a lack of knowledge circulation (SCC, 2022, pp. 17-18[4]). This analysis has led the minister to announce the establishment of a new co-ordination body to organise the information flows in the curriculum system.

Skillsets and mindsets

In terms of individual policy makers' skillsets and mindsets, we noted that the policy team within the ministry leading the curriculum revision had a good mix of skills, including skills in communication, education practice, research literacy, and programme and process management. Team members came from both policy and staff departments, i.e. the legal, communications and knowledge departments. Several team members had extensive experience in policy making and had developed a strong political-administrative intuition. Compared to other teams, this team was highly experienced with a diversity of expertise.

The mindsets within the team were a mixture of political-administrative orientation, sensitivity to stakeholder perspectives, sensitivity to the public, and media discourse and inquisitiveness to what works. To illustrate this last point, the team was very interested in knowledge about the implementation and

realisation of curricula in schools and wanted to learn from other countries' experiences. Research was thus commissioned into lessons from large-scale curriculum revisions across the globe (Nieveen et al., 2022[5]) and study visits were made to several countries.

Appropriate research evidence

We now turn to the centre of the framework. Could the team benefit from appropriate research evidence? It turns out that several types of knowledge were available to inform the policy, as shown in Table 4.1. Some of them are rather straightforward, such as scientific research, curriculum research, inspection research and international comparative research. This research provides insights into the implementation and realisation of the curriculum in schools and classrooms. Knowledge and experience drawn from practice can deepen these insights by adding a much more fine-grained picture of what happens in daily practice. Some academics and teachers also turned into advocates or activists, voicing their views in the (social) media, which also shaped the context for politics and policy.

Table 4.1. Types of knowledge

Type of knowledge	Provider
Trends/explorative/foresight	(Scientific) Strategic advisory councils: Scientific Council for Government Policy, Social-Economic Council, Education Council
High-level committee advice (mixture of practice expertise, scientific research, public consultation, political-administrative knowledge)	High-level committee e.g. Education 2032
Scientific research and advice (educational sciences, political sciences) "Shadow advice"/academic advocacy	Academics i.e. Temporary Scientific Curriculum Committee "Activist academics"
Curriculum research, e.g. implementation research	Academics and centres of expertise i.e. SLO
Practice expertise Advocacy	Teachers, school leaders "Activist teachers"
Inspection research	Inspectorate
International comparative research	OECD, IEA PIRLS, TIMSS, PISA

Notes: OECD: Organisation for Economic Co-operation and Development; IEA: International Association for the Evaluation of Educational Achievement; PIRLS: Progress in International Reading Literacy Study; TIMSS: Trends in International Mathematics and Science Study; PISA: Programme for International Student Assessment.

What is much harder to define is the knowledge produced by high-level committees and strategic advisory councils. Both are a mixture of scientific research, practice expertise, knowledge produced in public consultation meetings and inside political-administrative knowledge processed into "advice". Strictly speaking, this is not research evidence. However, for the development of policy most certainly in the Netherlands, in many cases, this type of knowledge proves to be crucial to proceed. As Geoff Mulgan argues, policy making is highly dependent on policy makers' synthesis capacity (Mulgan, 2021[6]). In a way, advisory committees and advisory councils do part of the synthesising. To be clear, this is not a pure research evidence synthesis but an exercise where different kinds of knowledge are combined and complemented with more value-driven advice.

Turning back to the question of appropriate research, in a critical appreciation of the knowledge system around curriculum, the Scientific Curriculum Committee identified several gaps. According to the committee, the evaluation of both the intended as well as the realised curriculum was limited, i.e. little is known about the way teachers implement curriculum goals and materials in classrooms. The inspectorate provides some insights, but there is room for improvement. Furthermore, the committee observed that teachers' experiences with the curriculum are not gathered and analysed systematically (SCC, 2022[4]).

Most interestingly, it seems there was a dynamic in time in the use of the types of knowledge. As described above, this dynamic was mainly caused by a shift in the political-public discourse on education; roughly speaking, a shift from 21st century skills to basic skills. In the first stage of the curriculum revision process, explorative and foresight types of knowledge prevailed, while in the latter stages inspection research and international comparative research dominated the discussions.

Thoughtful engagement with research

How did the curriculum team engage with knowledge from these different sources? Four observations can be made.

The first is that (research) knowledge was often used pragmatically, with a sharp eye for the political- administrative context and the situation and opinions of schools and teachers. Politics and (research) knowledge are closely intertwined, and it is hard to say what comes first, the policy or the knowledge. A clear, linear interaction between knowledge and policy is non-existent.

Second, more often, specific pieces of analysis were applied rather than an assembly of research pieces.

Third, as a consequence, the use of knowledge was quite fragmented, both in time and through time. As was argued above, different types of knowledge were dominant in policy preparations and political and public discussions in different stages of the curriculum revision process. In time, mostly single pieces of evidence were referred to rather than assemblies of various research pieces. And although one of the team members was from the Knowledge Unit, and there were sometimes presentations on research, overall, the use of research was more intuitive and implicit, dependent on and mingled with the (tacit) knowledge of individual team members.

Fourth, from 2020, the Temporary Scientific Curriculum Committee was explicitly tasked with advising the government on a scientific basis. The committee produced several thematic reports that were used in policy development, among others, in developing the overarching framework of curriculum development. As already described above, it could be argued that the synthesis of research was outsourced to the committee: within the ministry, the committee's analysis and recommendations were discussed intensively and incorporated into policy. Both the advice and its use in policy were reported to parliament.

Conclusion

What have we learnt from reconstructing the use of evidence in the case of the curriculum revision process? First, using the QURE framework deepened our insight and led to a more nuanced view of how different types of knowledge were applied during the process. Particularly reflecting on the questions of whether the knowledge was appropriate and whether the team engaged thoroughly with evidence were highly valuable. The reconstruction made us even more aware of the dynamics through time: different types, and even more specifically pieces, of knowledge were prominent in different phases of the revision process.

Additionally, the framework showed us that a structure for collating and appraising research and knowledge was lacking. The Scientific Curriculum Committee also observed this in its advice on a system for periodic curriculum maintenance. The committee concluded that while various players in the curriculum system carry out relevant research, a “standardised working process with regular intervals of monitoring, analysis, evaluation, and decision making” is missing (SCC, 2022, p. 18[4]). This leads to a lack of “effective knowledge circulation and collaborative use of information” (SCC, 2022, p. 17[4]). There was no structure or mechanism in the ministry for systematically gathering, accumulating and weighing all the relevant pieces of knowledge and explicitly judging what it means for policy.

Recently, the lack of structure within the ministry has been taken up in several policy projects. For example, in the National Program for Education, a big COVID-19 recovery impulse, progress reports are sent to parliament twice a year. To prepare for the report, all the involved policy makers gather and present the state of play regarding their topic based on the most recent research. Furthermore, the Knowledge Unit is aiming for a series of collaborative evidence appraisal meetings to promote the uptake of policy evaluation and research. Evidence appraisal meetings should combine two functions: 1) make an evidence synthesis; and 2) have a well-structured dialogue about the implications for policy. Most important is that these meetings lead to a "genuine exchange" with evidence and with researchers (Knight and Lyall, 2013, p. 310[7]). "Having the opportunity to discuss research helps practitioners (in the context of policy, this would be policy makers) gain a deeper understanding and sense of ownership of the findings, and in doing so, enables evidence to be integrated more relevantly and sensitively in professional settings" as Sharples observes in his account of what it takes to make evidence relevant for the frontline of social services (Sharples, 2013, p. 18[8]). What should happen at these meetings might be called a "percolation" of evidence into policy making. This means that the use of evidence is not to be understood mechanically as a consequence of a single study or even a body of knowledge, but rather more indirectly as a shift of thinking about issues, based on "lengthy interaction rather than one-way conversation" (Brown, 2012, p. 457[9]).

The reconstruction of evidence use also underlined the need to invest in strategic human resources policies. In the curriculum revision process, the team was highly experienced and had different expertise and specialist knowledge. But this is not always the case, and due to high turnover, it is hard to build and preserve deep knowledge about policies, which complicates the possibility of composing well-balanced teams. Moreover, as was already argued above, the human resource policy in the Dutch civil service was characterised by a focus on generalists for several decades. To promote the use of research, a shift is needed to recruit and develop more content specialists and knowledge workers. A well-rounded policy maker is capable of innovative policy making, as stated by a recent report from the European Commission's Joint Research Centre (Schwendinger, Topp and Kovacs, 2022[10]). According to the researchers, working with evidence is one of the seven clusters of competences, which includes futures literacy and engagement with citizens and stakeholders (Schwendinger, Topp and Kovacs, 2022[10]). The Knowledge Unit is currently exploring together with the Human Resources Management Department how these insights can feed into training for policy makers, and also into the ministry's strategic human resources policy, e.g. the recruitment, development and career paths of policy makers.

Lastly, the reconstruction of evidence use in such a long policy process led us to the metaphor of the journey to describe and analyse the application of knowledge in policies. Evidence travels through policies and politics, so to speak, most of the time not in a very linear way but with many detours and hilly tracks. Following the journey of knowledge through policies leads to more insights into how evidence is actually being used, and under which conditions, rather than only if it is being used. This kind of research relies on "in-depth descriptions", answering "questions about when, why, how and who finds what type of knowledge sound, timely, and relevant at different stages of the policy cycle" (Oliver, Lorenc and Innvaer, 2014, p. 8[11]). This chapter only reported about a first, cursory exploration of such an approach. We are planning to use it more often to enrich our understanding of how to strengthen the impact of research in education policy.

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5 Evidence use in implementing standardised testing in the Flemish Community of Belgium

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This chapter analyses the use of evidence in the policy-making process of implementing standardised testing in the Flemish Community of Belgium. It uses the OECD Framework of Strategic Education Governance to analyse the evidence use journey. The chapter starts with an introduction to the broad context of evidence use in the Flemish education system. It then focuses on the actors and their roles in using evidence in policy making. The chapter gives a short introduction to the policy reform and analyses the use of evidence in this process from a governance perspective considering the knowledge governance, the capacity within the system, stakeholder involvement and the whole-of-system perspective. The conclusion reflects upon how these different building blocks work together.

Introduction

This chapter focuses on strengthening the use of evidence in policy making in the Flemish Community of Belgium. Key characteristics of the Flemish system are freedom of education[1] and high levels of school autonomy.

The Flemish education system currently faces several challenges. These include declining student outcomes (such as falling literacy standards); significant teacher shortages; and educational inequality related to socio-economic status, migrant background and segregation within the system. A challenge not unique to Flanders is that policy making is a highly complex process involving diverse actors with diverse interests. The new attainment targets, for example, were annulled by the constitutional court after complaints by some education providers that they constituted an infringement of the freedom of education.

The nature and extent of evidence use in decision making is currently rather diverse and *ad hoc* in Flanders. The drive to use evidence in policy and practice has systematically been gaining momentum in the Flemish Ministry for Education and Training. Important steps have been taken to produce evidence for policy and practice. However, some major challenges remain. The use of research results is not yet a systematic practice. There remains a risk of fragmented use of research results and "cherry picking" of research findings and evidence. Research and evaluation are sometimes used as a tool for negotiation driven by political agendas rather than as an instrument for development. Policy makers sometimes lack the necessary capacities and time to gather and use evidence. At the same time, the research capacity to conduct policy and practice-oriented research is also rather limited.

Actors and their roles in the use of evidence in policy making

The use of evidence in policy making is embedded into the professional standards that civil servants working in the Flemish Ministry of Education should adhere to. Every policy advisor is expected to use valid and reliable evidence related to their topic and keep abreast of recent research related to their field. Furthermore, they are expected to suggest themes for further research and maintain their network of contacts within the field of education and research.

The Ministry for Education and Training's Department of Education and Training is responsible for policy development. Within the Department of Education and Training, a small team works on policy research and evaluation to support policy makers and policy advisors in collecting and making use of valid and reliable knowledge. The Research and Policy Evaluation Team is part of the larger Strategy and Knowledge Division, where knowledge and long-term policy planning come together (Figure 5.1). Other teams in this unit are the Legal Advice Team, the International Education Policy Team, the Strategic Planning Team and the Data Team. The Data Team supports policy makers with data and data analysis.

Figure 5.1. Strategy and Knowledge Division within the Department of Education and Training

The Research and Policy Evaluation Team identifies and formulates knowledge needs. It supports the development of further knowledge primarily by tendering external research (policy and practice-oriented research and international research), occasionally conducting research (e.g. providing support to evaluation commissions) and fostering networks such as contact with researchers (to learn about research that has been conducted with other funds). The team supports the mobilisation, dissemination and use of knowledge through tools and mechanisms such as a website, one-off events and seminars with brokers. The team brokers research to colleagues in the Ministry for Education and Training. The team members are experts in educational research and evaluation and mainly have a research background but do not necessarily have expertise in a specific domain of educational policy. Research initiated by this team has a strong link to the policy agenda and is organised in line with the policy cycle. The Research and Policy Evaluation Team builds bridges within the ministry and between the ministry and other actors.

The case of implementing standardised testing

Flanders has no real tradition of standardised testing. In primary education, there has been a tradition of administering tests developed by two of the umbrella organisations for schools. Since 2018/19, primary schools are required to administer tests to students in Grade 6 and must choose from a toolkit of validated tests, which includes the central parallel tests and tests of the umbrella organisations. In 2019, the new coalition government agreed to introduce standardised assessments. From the 2023-24 school year onwards, primary and secondary schools will therefore be implementing the first Flemish tests. Flemish tests are standardised and validated cross-network and cross-sector tests, whose primary aim is to support the internal quality assurance of schools and thus help to improve educational quality. Standardised testing monitors learning outcomes and measures pupils' progress. This knowledge can contribute to schools' internal quality assurance system and the external quality control by the inspectorate. It also helps the pedagogical guidance services to provide support to schools. The tests are set up centrally, taken digitally, and will be analysed and reported on in a dashboard. They are initially limited to Dutch (reading comprehension and writing) and mathematics.

The key driver for introducing standardised tests in Flanders was a decline in student attainment. International assessments such as the Programme for International Student Assessment (PISA), Trends in International Mathematics and Science Study (TIMSS) and the Progress in International Reading Literacy Study (PIRLS) have indicated a gradual decline in literacy and numeracy, and this trend has been reflected in national sample-based assessments ("*peilingen*").[2]

While the research clearly indicated a decline, it took time for this trend to be acknowledged by the general public and in the educational field. There was initially no consensus that student results were declining, although this shifted in 2017 when the results of PIRLS 2016 were released and a "PIRLS shock" occurred in Flanders. Nonetheless, several voices in Flemish education remained convinced that the quality of

education is still high (citing the very high results in PISA in 2003). There has been more awareness in recent years of the decline in results, thanks in large part to the media fostering awareness among the general public. Moreover, recognising the decline and the ambition to turn the tide has become a very important element in the political discourse.

The use of knowledge and evidence: A governance perspective

Analytical framework

To analyse the evidence use journey, we use the OECD Framework of Strategic Education Governance (Shewbridge and Köster, 2019[1]). This framework explores how to best achieve policy objectives for an education system characterised by multi-level governance structures and a multitude of stakeholders. The framework identifies six interrelated domains that collectively promote more effective governance processes: accountability, capacity, knowledge governance, stakeholder involvement, strategic thinking and a whole-of-system perspective (Figure 5.2). These domains of strategic education governance can help government authorities steer complex education systems towards established goals. We examine four of these domains separately in our analysis of evidence use in a policy process. The other two domains, accountability and strategic thinking, are mentioned in a cross-cutting way across the different sections.

Figure 5.2. OECD Framework of Strategic Education Governance

Source: Shewbridge and Köster (2019[1]), *Strategic Education Governance*, https://www.oecd.org/education/ceri/SEG-Project-Plan-org-framework.pdf.

Knowledge governance

Research base

Several years before the introduction of standardised testing, a strong knowledge base was built around evaluation and assessment in Flanders. In 2011, Flanders participated in an OECD Review on Evaluation and Assessment. The OECD recommended that the Flemish Community seek ways to collect more

performance information to support school evaluation (Shewbridge et al., 2011, p. 112[2]). In the following years, several Flemish studies explored the possibilities for implementing standardised tests specifically in the Flemish context. These include:

- A study commissioned by the Flemish government and conducted by researchers at the University of Antwerp showed that the general aversion in Flanders to standardised tests had diminished, and there was more positive commentary about standardised tests (Penninckx et al., 2017[3]). The study laid out the possibilities for large-scale testing and highlighted possible scenarios for Flanders based on a detailed analysis of case studies of standardised tests in other countries.
- A feasibility study was carried out in 2020 by independent researchers and focused on the impact of testing, the organisational aspects, legal issues and technological challenges.

The design for the new standardised testing in Flanders drew on these pieces of research evidence and other studies on testing. Policy makers grappled with conflicting research evidence on high-stakes testing. They considered the ample evidence from international research that shows that high-stakes testing can lead to unintended use (Box 5.1), such as fraud and student selection. The research on the beneficial effect of high-stakes testing on student allocation to educational tracks was considered, but conflicts with the tradition of free track choice in Flanders.

Box 5.1. International research on standardised tests

Examples from abroad demonstrated that publishing school rankings and naming and shaming schools based on results is counterproductive. There is also evidence that high-stakes testing leads to more "shadow education" – the phenomenon of private tutoring covering subjects already taught in school (Carnoy and Loeb, 2002[4]). On the other hand, high-stakes testing has been shown to be beneficial for equity in student allocation, as students are more objectively allocated to study programmes, and there is a lower impact of socio-economic status in this allocation (Bol et al., 2014[5]).

Another important challenge that policy makers faced was that the topic of standardised tests showed some polarisation among academics. It seems that researchers are often either explicitly in favour of, or against, standardised testing, and express a strong ideological stance on the issue.

Consequently, it was decided that the implementation of the standardised tests would be scientifically monitored to evaluate to what extent intended and unintended effects occur.

Contextual knowledge in designing the tests

The approach to standardised tests in Flanders is also rooted in policy makers' strong understanding of the Flemish cultural context. The result of the decision to combine insights from research with an understanding of what can be achieved given the cultural context is that the proposed tests will be **low stakes** (Box 5.2).

Cultural perceptions of accountability: The decision to propose low-stakes tests reflects in part the still predominant cultural aversion to accountability measures in education among Flemish stakeholders. The dislike of accountability in an educational context is linked to the concept of freedom of education as a constitutional right in Flanders. Moreover, accountability is often perceived as creating more work for teachers. Accountability is often construed as "vertical accountability" (top-down), while there is no strong tradition of horizontal accountability in Flanders.

Tradition of free track choice: While Flemish policy makers were aware of the research on high-stakes tests and equity in study programme allocation, the decision was taken to uphold the Flemish tradition of allowing free choice of study options.

Involving the inspectorate: Recommendations from different studies suggested that giving the inspectorate access to school results would highlight the accountability component of the tests. The OECD, on the other hand, saw opportunities to place standardised tests within the strengths of the current accountability system that focuses on dialogue for improving practice (Shewbridge and Köster, 2021, p. 69[6]). It was decided that the inspectorate would receive the results of all schools every year thus allowing it to use the results as input for school visits and perform their work more efficiently.

Box 5.2. Research evidence and cultural context

Combining insights from research with an understanding of the cultural context, it was concluded that low-stakes tests would be the most appropriate approach. Striking a balance between research arguments on the one hand and cultural/practical arguments on the other requires dialogue and openness towards other perspectives and concerns. This is generally a time-consuming exercise to reach a compromise. In the Flemish case, it is sometimes unclear who can take the final decision.

For example, researchers from the Research Centre have argued in favour of digital writing assignments in Grade 4. They carried out a pilot in a small sample of schools that was successful. However, many stakeholders were reluctant and argued that this would mainly measure typing skills in 10-year-olds. The researchers then decided not to include writing assignment testing in primary schools in 2024. The topic will be rediscussed at a later stage.

Generally, the Research Centre writes a report (e.g. on testing students with special educational needs, testing assistants or data literacy) that is discussed in the steering committee. During the discussion, arguments are given on feasibility, workload and impact on schools and teachers. Sometimes the researchers are asked to update their report. When the topic is considered strategic, policy advisors at the ministry summarise all the information for the minister with suggestions for policy decisions. The minister takes the final decision.

In Flanders, many staff members of umbrella organisations and teacher unions have a research background. And some researchers and policy makers have a teaching background. Most test developers have been teaching Dutch or mathematics. This helps understand each other's perspective and can also impact the process of decision making.

Having readily available evidence is, however, not sufficient. It is important to compile and synthesise evidence to make a strong case. Policy makers and stakeholders involved reflect upon the different pieces of evidence in diverse ways, all with their own interests and opinions. In addition, research evidence rarely translates into simple conclusions or statements.

Capacity within the system

Policy team: A small policy team made up of civil servants from the Department of Education and a contracted IT business analyst supervises the introduction of the standardised tests. This team collaborates intensively with other colleagues within the ministry with specific expertise, such as communication, curriculum, legal issues, technology, the inspectorate's role, etc. The project leader has a strong academic background in educational effectiveness research. This is an important asset in building bridges between researchers and policy makers.

While there is a strong mix of skills within the team, the number of full-time staff is limited for the complexity of the reform project. This makes implementation challenging. Civil servants give evidence-informed advice to political decision makers. However, their role requires them to be committed to loyally implementing political decisions that have been taken, making them distinct from researchers who have academic freedom. This requires civil servants to have skills in working with evidence, communicating, collaborating

and advising the political level (European Commission, 2023[7]). These skills are necessary to be able to act as boundary spanners, bridging science and policy by gathering relevant external scientific knowledge and communicating it to the relevant users within the public policy organisation.

Stakeholders: Capacity to understand and interpret scientific evidence varies. Discussions on standardised testing can be highly technical and require a scientific background. At the same time, stakeholders have strong opinions on this topic, according to their specific interests.

Researchers: The Flemish Research Centre for Central Assessment in Education (Box 5.3) was established to develop the tests. Academics (e.g. psychometricians, psychologists, mathematicians, educational scientists) in Flanders are strongly involved in the policy development on this topic. However, academic reports must be translated into policy decisions. This is a complex and multi-layered process. One example is the policy decision process on measuring student learning gains over time (see Box 5.4).

In addition, researchers' views and opinions are sometimes ideologically driven and can be opposed to the political vision. More generally, vulnerability to ideological and political bias among researchers has been flagged as an issue of research production in education and other social sciences (van Damme, 2022[8]).

Box 5.3. Flemish Research Centre for Central Assessment in Education – The "Steunpunt"

The Flemish Research Centre for Central Assessment in Education is a consortium of 40 academics from all Flemish universities and two universities of applied sciences. It was a deliberate decision to opt for capacity building in the academic world rather than outsourcing the development to a commercial test development partner to develop valid, reliable tests and keep up with new developments in educational measurement, adaptive testing and artificial intelligence applications.

The centre develops the test items. The researchers also produce academic reports on crucial topics, such as measuring learning gains, standard setting and test validity for students with special needs. The reports generally do not support one clear "best evidence buy" but describe different scenarios and their implications. The research reports are discussed in a steering group made up of policy makers, researchers and stakeholders. The steering group's role is to give advice, drawing on the expertise of its members.

The work environment can be challenging for researchers engaged in the centre. Standardised testing is a highly politicised and strongly debated subject in Flanders, and researchers often have to defend their positions.

The following capacity challenges were highlighted in relation to researchers and academics in the Flemish context:

- The number of researchers working on these topics is limited compared to other (larger) systems.
- Few researchers carry out educational policy research (research to support educational policy making). There is a perception that this type of research is not highly valued in Flemish academia, despite ample funding made available by the ministry.

Box 5.4. Reconciling research and stakeholders' views: The example of measuring student learning gains

In 2022, the Flemish Research Centre for Central Assessment in Education wrote a technical report on measuring learning gains. Researchers and stakeholders discussed the report at the steering committee meetings. Stakeholders appreciated the researchers' technical and academic input, but their own perspective is more value-based and predominantly concerned with the effects of this measurement on teachers and school leaders. In particular, several stakeholder groups (teacher unions, umbrella organisations, the Flemish Education Council) expressed great concerns about the measurement of learning gains. The researchers highlighted that learning gains are the best measure of true school effects, but stakeholders feared that school quality would be narrowly judged based on student learning gains.

The policy team at the ministry summarised both the research evidence and the concerns to support the minister in his decision making. This summary report, which provided policy advice, was written for the minister but also shared with the researchers. The researchers' reaction was rather negative, saying there was no correct balance between their research input and stakeholders' concerns. In their view, the policy advice was too concerned with pragmatic and feasible solutions. In the end, the minister decided that in the first years, learning gains would only be measured between Grades 4 and 6 for school feedback and in parallel the researchers will study if and how feedback on learning gains in secondary schools might be implemented in later years. This illustrates the types of compromises decision makers make to reconcile evidence and the nature of policy making.

Capacity building is thus an integral part of the knowledge governance and stakeholder engagement processes to develop and use research evidence for policy-making purposes.

Stakeholder involvement

Implementing standardised testing is a very complex, technical and time-consuming process which is also highly value-laden. To successfully implement the standardised testing within the agreed-upon time frame, policy makers had to start almost immediately by establishing the Research Centre that would be in charge of developing the tests. There was no time for in-depth consultation with stakeholders on the introduction of the standardised tests, which gave stakeholders the feeling of being faced with a *fait accompli*.

Different platforms for stakeholder involvement have been established along the way. One such platform is a high-level forum established by the ministry to act as a feedback mechanism between stakeholders regarding the tests. The forum meets to discuss specific topics at key stages of the policy-making process. Another example of stakeholder involvement is the steering group that discusses the work of the Research Centre for Central Assessments. In addition, there are "satellite steering group meetings" to discuss very specific topics, such as the automatic scoring of writing assignments. All of these platforms involve the researchers to provide evidence and stakeholders are invited to collectively appraise these pieces of evidence. Moreover, staff in several stakeholder organisations include former academic researchers involved in these platforms.

Schools, as the end users of the tests and the feedback reports, are also consulted in the decision-making process by the Research Centre (through "*denk tanks*"; see Box 5.5) and by the ministry (for example, through webinars with Q&A sessions).

Box 5.5. Stakeholder engagement through *denk tanks*

In the present stage of the proposed reform, stakeholder engagement takes place through *denk tanks* – user groups organised by the Research Centre. The topics for discussion in the *denk tanks* are the test items (for mathematics and Dutch) and the visualisation of the school feedback dashboards. The *denk tanks* are stakeholder dialogue mechanisms that emphasise co-creation – they present a way of checking proposals from researchers with professional knowledge. These user groups are comprised of teachers, school leaders, counsellors, teacher trainers and inspectors. The researchers present their ideas and proposals and the user groups give their advice based on their practical knowledge of daily life in schools.

Engaging stakeholders poses multiple challenges. First, discussions at the steering group sometimes become highly technical and difficult to follow for stakeholders that lack a scientific background. Strong brokerage skills are thus very important for the policy team to keep everyone aboard.

Second, while each platform has clearly defined goals, in practice they become blurred. For example, a process of providing feedback on a report can devolve into a negotiation process. It is important to try and find common ground in dialogue and listen to concerns. The highly technical nature of the project also proved challenging in this regard. A lot of misconceptions exist about the tests, making it challenging to develop a common language.

The third difficulty is that stakeholders consulted in dialogues do not necessarily represent the diversity of opinion within the groups they represent. For example, the Flemish Education Council has written four pieces of critical advice on introducing the tests. The discussions on the last text did not result in a consensus with respect to how the text could be revised to reflect the diversity of all stakeholders. Ultimately, the advice text highlighted the risks and disadvantages of the Flemish tests. This text was approved by the majority of stakeholders yet a few stakeholders added a letter to the text in which they expressed an opposing view.

In conclusion, stakeholder engagement is closely linked to knowledge governance in the sense that thoughtful engagement with research evidence requires stakeholders to have opportunities to collectively appraise evidence while bringing their own contextual and professional knowledge to the discussion. Different platforms have been installed to give stakeholders these opportunities. However, stakeholders have voiced criticism of their involvement in the standardised tests reform. While the current *denk tanks* (Box 5.5) represent a promising avenue for strengthening stakeholder involvement, there is a perception that more could have been done to engage stakeholders early in the process.

Whole-of-system perspective

The implementation of the tests is closely linked to a number of other large and complex policy dossiers. In particular, three other major developments affect the implementation of the tests: 1) the revision of the curriculum (and the introduction of new attainment targets); 2) the reform of the pedagogical guidance services; and 3) a significant shortage of teachers. Concerning the shortage of teachers, stakeholders have raised the question of whether the tests can have an impact on the attractiveness of the teaching profession.

It is challenging to align these different developments in the various policies due to the strict time frame of the implementation of the standardised tests and the highly value-laden and sensitive character of the curriculum reform. However, within the Ministry for Education and Training, there is very close co-operation between the teams working on the Flemish tests and the team working on curriculum development, exchanging information and sources of evidence. Given the small scale of the Flemish education system,

there are also researchers involved in both the process of test development on the one hand and the new curriculum development on the other.

To maintain a whole-of-system perspective, the standardised tests need to be linked to other policy goals. It will be very important to clarify for schools how the standardised tests will be linked to attainment targets and the broader educational quality reference framework (see: https://www.onderwijsinspectie.be/en). There are roles here for the Flemish Education Inspectorate and the pedagogical guidance services to document expectations of how schools can interpret and position the data from the standardised tests in a broader array of evidence (Shewbridge and Köster, 2021, p. 8[6]).

Conclusion

The process of introducing standardised tests in Flanders has drawn on strong evidence, including from other countries. Background research was undertaken that subsequently informed the design of the proposed reform. The decision to make the tests low stakes reflected policy makers' engagement with research evidence but also their own knowledge of the Flemish cultural context. The decision-making process on the design of the tests was a case for thoughtful engagement with research in the policy community in the sense that the decision makers combined research evidence, contextual knowledge (e.g. stakeholders' beliefs and practice) and political values. The Council of State recognised this in its advice on the decree on standardised testing, stating that the policy decision to provide an exception on public transparency in order to avoid public rankings was built on evidence from research.[3]

We can conclude that having readily available evidence is not enough – it is important to compile and synthesise evidence to make a strong case. Policy makers and stakeholders reflect upon the different pieces of evidence in diverse ways, all with their own interests and opinions in mind. In addition, research evidence rarely translates into simple conclusions or statements. Despite this, the ministry was successful in "speaking as one voice" throughout the reform process. However, stakeholders perceived this as a top-down discourse. Flemish policy makers spoke about "informing" teachers and stakeholders and "explaining" aspects of the tests to them. Discussing with or entering into dialogue with teachers was not part of their discourse.

Flemish policy makers had to cope with the challenges of time pressures and expectations of delivering the reform within a given time period while also effectively engaging stakeholders, which also requires time. The implementation of the Flemish tests has taken place within a tight and ambitious time frame, and the first large-scale test for 140 000 students in two subjects is planned for May 2024. The tests are expected to be modern, digital and adaptive, and all IT systems and supporting databases must be operational within this timeline. There is an important balance to strike between investing the necessary time in stakeholder engagement and building trust while delivering reform within an acceptable time frame. These conclusions demonstrate the ways in which the different components of the Strategic Education Governance Framework play out in close combination. Stakeholder engagement is closely linked to knowledge governance in the sense that thoughtful engagement with research evidence requires stakeholders to have opportunities to collectively appraise evidence while bringing in their own contextual and professional knowledge. Such opportunities for collective appraisal of evidence involving various groups of stakeholders can help build a better understanding of evidence as well as trust in the process. However, these were notably absent in the Flemish case throughout the process of introducing standardised tests. Knowledge governance is, in turn, linked to capacity, both because creating such opportunities requires central (policy) capacity and because stakeholders also need special competences to be able to engage with research. Capacity building is thus an integral part of the knowledge governance and stakeholder engagement processes.

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Notes

[1] Freedom of education means that anyone can start a school and receive government financing as long as a core set of requirements is fulfilled and there is freedom of choice for parents and students.

[2] *Peilingen* are annual national sample-based tests. They are developed each year for the sixth grade of primary education and the second, fourth or sixth grade of secondary education. Every school year, one subject is tested in primary schools and one in secondary education (Shewbridge and Köster, 2021[6]).

[3] Council of State section Legislation opinion 72.476/1 of 31 January 2023 on a preliminary draft decree on Flemish tests in education.

6 Engaging with research to understand research use: The value of evidence use journeys

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This chapter shows how the analysis of evidence use journeys can bring us closer to a deep understanding of systematic and high-quality evidence use and support us in identifying factors that enable the development of a culture of research engagement in policy organisations and processes. It does so by providing a comparative analysis of the Dutch and Flemish evidence use journeys presented in Chapters 4 and 5. The chapter explores how the two frameworks and corresponding analyses enable understanding evidence use. It reflects on the exercise itself and describes the Dutch and Flemish analyses as policy action research. The chapter concludes with reflections on the exercise of conducting self-reflective evidence use journeys.

Introduction

Developing a culture of research engagement requires understanding what it means to use evidence "systematically and well". A group of civil servants from the Netherlands and Flanders[1] (Belgium) decided to explore this by investigating the use of evidence in two policy processes: curriculum revision and introducing standardised testing, respectively. The two systems decided to engage in an honest self-inspection and – accepting their vulnerability – ask peers from three countries (Finland, Ireland and Norway) to help them reflect. They each hosted a learning seminar co-organised with the OECD as a platform for reflection.

The two systems also used research to guide their reflections by using a conceptual framework to analyse their evidence use. The Netherlands used the Quality Research Use (QURE) framework developed by Mark Rickinson and his team at the Monash Q University in Australia to understand how research can be used *well* in schools (Rickinson et al., 2022[1]). Flanders used the OECD/CERI Strategic Education Governance (SEG) framework developed by Claire Shewbridge and Florian Köster (Shewbridge and Köster, 2019[2]), building on Tracey Burns' earlier work on governing complex education systems (Burns and Köster, 2016[3]). The self-reflective analyses were coined "evidence use journeys" by Rien Rouw and draw on the peer reflections generated by participants in the two learning seminars. This metaphor reflects the fact that using evidence in policy is not a linear and straightforward process.

This chapter compares the two analyses and explores the affordances of each framework: what kinds of reflections do they enable with respect to understanding evidence use and what are their limitations? It aims to show how the analysis of evidence use journeys can bring us closer to a deep understanding of systematic and high-quality evidence use and support us in identifying factors that enable developing a culture of research engagement in policy organisations and processes. The chapter also reflects on the exercise of conducting self-reflective evidence use journeys.

Context and landscape

The overview of the Dutch and Flemish education systems reveals many similarities, which make the two evidence use journeys somewhat more comparable. The descriptions of the context in which the given reform took place highlighted the strongly politicised nature of policy making. In both systems, reform was motivated by strong signals that standards were dropping (e.g. as measured by international student assessments).

However, several differences can be observed in the way the context and the landscape were presented between the two cases. First, the timelines and process of the respective reforms were very different. In the Netherlands, it has been almost a decade (since 2014), albeit with irregular intensity and a changing focus, starting with a participatory approach. In contrast, the starting point of the Flemish case description is the governmental decision to introduce standardised tests in 2019.

Second, the presentation of the landscape of actors differs. The Dutch case describes a wide scope of actors, including central government, government-funded independent bodies, and research institutions and practice-oriented organisations. The Flemish case focuses on central actors and presents relevant units of the ministry. It includes other actors, such as research centres, umbrella organisations of schools, and other bodies and organisations later in the analysis.

Finally, the description of the reform context has different emphases. There is a bigger emphasis on the political process in the Dutch case, which references major political decisions and decision makers' names. The Flemish description centres more on the context of education policy: the drivers of the reform and the main determining contextual elements, such as the culture of using tests and accountability, while the political process is present to a lesser extent.

Two frameworks, two tales

To identify the respective benefits and limitations of each conceptual framework in better understanding evidence use in policy, this section compares the two analyses with respect to key components of both frameworks.

The similarities and differences between the two frameworks are mirrored in the respective analyses. Each framework has a clear **purpose**, which provided the authors with a clear structure for conducting their analysis of evidence use. However, the different purposes of the two frameworks resulted in different sorts of analyses. The QURE framework is a better fit given that it aims to support reflections on the quality of research use, which is precisely the purpose of the evidence use journey analysis. The Dutch analysis could rely on the descriptions of its dimensions and apply them directly. The SEG framework has a broader scope to support education governance, with knowledge governance being one of its dimensions that directly relates to the purpose of this analysis. The Flemish analysis adapted three additional dimensions: capacity building, whole-of-system perspective and stakeholder involvement by narrowing the focus of these broad dimensions to evidence use. This exercise appeared to be easy for capacity building but perhaps slightly less straightforward for the other two dimensions. Accountability from a governance perspective was a key piece in introducing standardised tests and was addressed in the analysis as a factor influencing research use. In the QURE framework, this would have been labelled as a systemic influence. Strategic thinking remains implicit in the analysis, but its descriptors are present. For example, crafting and consolidating a system vision, and balancing short- and long-term priorities, both influenced decisions and research knowledge.

Second, the **context** for which the frameworks were originally developed influenced the required extent and nature of adaptation. The QURE framework was developed for the context of practice (schools), while the SEG framework was developed for policy. Adapting the former for policy in the Dutch analysis seemed straightforward: the framework's key dimensions and elements could be easily interpreted for a policy process and the ministry. However, the SEG framework captures the policy context better than the QURE framework does. This resulted in more concrete examples of the challenges of balancing knowledge of context with research evidence in the Flemish evidence use journey. Third, the overlaps and differences in the **content** of the frameworks are reflected in the structure and focus of the two analyses. The sections below elaborate on the key aspects of content.

Evidence and other types of knowledge: Determinants of thoughtful engagement

Both accounts include a reflection on the evidence itself, the types of knowledge used and how knowledge influences decisions. In the Dutch case, this is prompted by the QURE framework's two core elements: appropriate research evidence and thoughtful engagement with this. In the Flemish case, it is stimulated by the SEG's framework knowledge governance piece.

The analyses are in many ways similar and, unsurprisingly, very much in line with recent research on evidence use in policy. They present how different sources of knowledge interact in complex ways in policy making. Policy decisions often follow a pragmatic approach, in which evidence, context, interests and values are combined according to both accounts.

However, they each highlight a few distinct features of evidence journeys. The Dutch case emphasises the difficulty of tracing the use of research evidence because what reaches policy makers and politicians are often reports that combine different sources of knowledge. As a result, it is hard to know if and to what extent a particular decision drew on research evidence. In addition, the Dutch analysis notes the varying uses of different sources of knowledge over time. This analysis is more an original idea of the authors rather than the result of the QURE framework, which does not naturally lend itself to analysing change over time. The Flemish case demonstrates the balancing act between research and contextual knowledge

through a few concrete examples. It also points to the fact that research itself is often value- or even belief-driven (Cairney, 2019[4]).

While both frameworks stimulated a rich discussion on the complexity of knowledge use, the QURE framework's concept of thoughtful engagement also generated a reflection on the quality of evidence use. A common conclusion was the need for better evidence synthesis.

Capacity building

Capacity building was a common element explored in both analyses with respect to policy makers' skills to thoughtfully engage with research evidence. Both analyses reflect on the collective skills of teams rather than just individual policy makers' skills. In the Dutch analysis, this is an addition to what the QURE framework explicitly says, where skills and mindset are labelled as "individual enablers" (Rickinson et al., 2022[1]). Resulting from its system focus, the SEG framework takes a broader perspective, where capacity relates not only to individuals, but also organisations and the system, and specifically asks for horizontal capacity building. This prompted the Flemish case to also discuss the skills of researchers and other stakeholders. It is also worth noting that both analyses go beyond research literacy skills and point to more complex competences of policy makers. These include sensitivity to different perspectives and inquisitiveness in the Dutch case and communication, boundary spanning and political advisory skills in the Flemish case. Importantly, both these descriptions refer to a new civil service competence framework recently developed by the European Commission's Joint Research Centre.

Stakeholder engagement

Both accounts describe stakeholder engagement as a key component. In the Flemish case, this is a direct consequence of the SEG framework's corresponding dimension and is discussed with respect to the intensity and nature of involvement in the different stages of the policy process, along with the associated tensions and challenges. The Dutch analysis discusses it in less detail and in a cross-cutting manner: as part of the context, skills and conclusion. Both cases dedicate a section of the conclusion to the collective appraisal of evidence by stakeholders. Using the literature on evidence-informed deliberative dialinvaliogues from the health sector, this method was presented in the learning seminars to explore its feasibility for education policy making (Box 6.1). Flanders concluded that stakeholders' involvement could benefit from a more structured approach throughout the whole policy process: one which allows them to engage with evidence, reflect on their own preconceptions and contribute with their consolidated deliberation. The Netherlands has so far focused more on the dialogue between researchers and policy makers and set out a plan for a series of collaborative evidence appraisal meetings with respect to the theme of policy evaluation.

Box 6.1. Collective evidence appraisal: An example of deliberative stakeholder engagement from the health sector

Evidence-informed deliberative dialogues are a stakeholder platform used mainly in the healthcare sector. They are a group of approaches for structuring conversations between stakeholders to discuss the best available evidence and inform policy making in a controlled way on an identified topic. They share conceptual foundations with other deliberative democratic methods (e.g. community panels, citizen assemblies) where "a broadly representative body of people weighs evidence, deliberates to find common ground and develops detailed recommendations on policy issues for public authorities" (OECD, 2020, p. 195[5]).

These approaches have been used in a variety of healthcare systems to: determine funding and eligibility for treatments, identify and assess new technology, optimise service provision, design and implement visions and strategies, inform the content of professional development and modernise workforce training, oversight and planning (The ASTUTE Health study group, 2014[6]; Oortwijn, Jansen and Baltussen, 2021[7]; McMaster Health Forum, 2021[8]).

In deliberative approaches, the definition of evidence is broader than just research evidence. Culyer and Lomas (2006[9]) classify evidence into three types: 1) context-free scientific; 2) context-sensitive scientific; and 3) colloquial. Colloquial evidence is informal evidence from experts, professionals, lobby groups, etc. and provides context to scientific evidence in healthcare policy making (Sharma et al., 2015[10]).

How do they work?

To maximise the effectiveness of deliberative dialogues, they should:

- be informed by pre-circulated packaged evidence summaries
- ensure fair representation among policy makers, stakeholders who could be affected by the outcome and researchers
- engage one or more skilled facilitators to assist with the deliberations
- allow for frank, off-the-record deliberations by following the Chatham House rule
- not aim for consensus (Boyko, Lavis and Dobbins, 2014[11]).

Impact on decision making and participants

With respect to their impact on decision making, deliberative processes have been found to:

- enhance the legitimacy of policy design based on deliberation between stakeholders to identify how values can be combined with evidence to arrive at a decision (Oortwijn, Jansen and Baltussen, 2021[7])
- facilitate discussions of evidence between stakeholders on high-stakes topics
- inform ethical, accountable policy decisions in highly emotive or politicised policy areas (The ASTUTE Health study group, 2014[6]).

Positive impacts on participants include:

- the acquisition of new knowledge by participants, a stronger culture of research use within stakeholders' organisations and concrete actions aimed at implementing recommendations emerging from deliberative dialogues (Moat et al., 2014[12]; Ridde and Dagenais, 2017[13])
- participants report being more likely to use research in their own organisations immediately following such dialogues (Lavis, Boyko and Gauvin, 2014[14])
- improved stakeholder involvement in, and satisfaction with, strategic planning processes (Moat et al., 2014[12]).

Culture and infrastructure

As a result of the QURE framework's explicit focus on culture, the Dutch analysis included an appraisal of the existing culture of evidence use within the ministry. Beyond the actual analysis, it is worth noting that terms such as "knowledge infrastructure" and "knowledge ecosystem", as well as the generally strongly self-reflective nature of the Dutch case, suggest that the Netherlands has been investing in the development of a research use culture. In comparison, the Flemish case does not have an explicit

discussion on culture, leadership or infrastructure, which may be the result of the different focus of the SEG framework.

Systems perspectives

Evidence use journeys are influenced by systemic factors and need to be interpreted as part of the education system. A systems perspective is explicit in both frameworks and thus is included in both accounts. In the QURE framework, it is present as system-level influences, and the Dutch case analyses the ways in which the political discourse influenced the curriculum revision process. This is an interesting adaptation of the QURE framework for the context of policy. The whole-of-systems dimension of the SEG framework calls for developing synergies across the system and overcoming systemic inertia. Accordingly, the Flemish case discusses the ways in which different policy processes are interconnected. However, a systems perspective is also present in the description of the respective contexts in both analyses. These include political developments that posed challenges to the reform process, influential political leaders, and the political discourse and the influence of the media.

Policy action research

The two evidence use journeys demonstrate the way in which research can directly assist policy making. More specifically, in these cases, conceptual research – two frameworks – and a reflection on policy making by policy makers contributed to improving "the practice of policy making". This is apparent in the Dutch case, where the ministry started to put the conclusions of this analysis into action: they have been exploring human resource policies in the ministry and designing structures and processes that will support a more systematic and higher quality use of research.

In fact, we could call these analyses policy action research or collaborative enquiry in policy. Action research can be defined as a "systematic process of practitioner problem posing and problem solving" (Kuhne and Quigley, 1997, p. 23[15]). In the context of teaching practice, its main goal is to better understand teaching and learning-related problems and improve practice. This was exactly the driver of the evidence use journeys for policy: the problem being the fragmented use of research evidence and the desire to improve it. A more recent adaptation of action research is collaborative enquiry, in which teams of teachers explore and answer questions about their professional practice (Townsend and Adams, 2014[16]). It has been described as "a process of knowledge generation, occurring when researcher and practitioner knowledge meet in particular sites, aimed at producing new knowledge about ways in which broad values might better be realised in future practice" (Ainscow et al., 2016, p. 10[17]). Again, something very similar happened in these cases: a team of policy makers, mostly (although not exclusively) from the respective knowledge units of ministries, explored a question about their own policy-making practice. They mobilised research knowledge and their knowledge of their own context and created new knowledge: specifically about ways in which evidence can be used more systematically and better.

Action research has been extensively criticised for lack of rigour and labelled by many as low-quality research. However, action research can also be considered as engagement with research rather than as research production. In this sense, the primary goal is to improve practice – which in this case is policy – not necessarily to add to the body of academic research knowledge. Collaborative enquiry may then be a better term to avoid associations with academic research production. Research engagement is apparent in both cases and goes beyond using the two frameworks. Examples include using literature on knowledge mobilisation and complexity science as well as recent developments, such as the application of the Joint Research Centre's competence frameworks. Furlong and Oancea (2005[18]) underline that the quality of applied and practice-based research should also be assessed with respect to social and economic robustness in addition to scientific robustness (Table 6.1).

Table 6.1. Dimensions and sub-dimensions of applied and practice-based research quality

Scientific robustness	*Social and economic robustness*		
Epistemic: Methodological and theoretical robustness	**Technological**	**Capacity development and value for people**	**Economic**
Trustworthiness	Purposefulness	Plausibility	Marketability and competitiveness
Builds on what is known + contributes to knowledge	Salience/timeliness	Partnership, collaboration and engagement	Cost-effectiveness
Explicitness	Specificity and accessibility	Reflexivity, deliberation and criticism	Auditability
Propriety	Concern for enabling impact	Receptiveness	Feasibility
Paradigm-dependent criteria	Flexibility and operationalisability	Transformation and personal growth	Originality

Source: Adapted from Furlong and Oancea (2005, p. 15[18]), *Assessing Quality in Applied and Practice-based Educational Research*.

Clearly, many of the criteria for social and economic robustness are met by the two evidence use journeys. They have a clear purpose, and are saliant and timely, specific and accessible. They enable capacity development and are of clear value to policy makers and policy organisations, possibly also for researchers and other actors. They seem to indicate personal growth (of colleagues involved in the analysis as well as of the participants of the learning seminars) and a potential for transformation. The economic criteria may be more difficult to assess in the short term.

In addition to their social value and quality, the two evidence use journeys also have the potential to contribute to research itself. The application of the respective frameworks highlighted different affordances and limitations. These could drive further refinement of each framework and possibly the development of a QURE framework for policy. For instance, the use of different types of knowledge over time and throughout the stages of a policy process in the Dutch analysis may prompt the development of a more dynamic tool than a static framework. Both analyses highlighted nuances that may motivate further specification of some of the dimensions and descriptors. This demonstrates that while the primary goal of applied research is improving practice, it can also contribute to developing theoretical knowledge (Furlong and Oancea, 2005[18]).

Conclusions: The value of self-reflective evidence use journeys

This chapter is a meta-analysis, not in the research sense, but in the everyday one: it provided a comparative analysis of two analyses. In addition, it reflected on the process and value of countries' self-analysis of evidence use journeys.

Evidence use in policy making is complex, but there are concrete ways to improve it

Both analyses demonstrated the complexity of knowledge governance and evidence use, showcasing the ways in which different sources of knowledge, political values and stakeholders' interests interact [see also (Garrison, 2005[19])]. Nevertheless, they brought more clarity on what thoughtful engagement with research evidence may mean in policy making. They also proposed concrete ways in which this can be improved:

- They both call for more evidence synthesis, noting that this was largely missing in both contexts. Evidence synthesis requires adequate processes that provide relevant insights in a timely manner.

- They suggest that, similarly to the health and other sectors, a collective appraisal of evidence by stakeholders can increase quality research use in education policy. It can also enable a more meaningful and systematic integration of stakeholders' professional and contextual knowledge in policy decisions.
- Collective capacity development within policy organisations to build research engagement skills and other competences that are necessary to bridge evidence and policy is key. Such competences should be identified and integrated into human resources policies (e.g. recruitment, development, building policy teams for a specific process).

Guided self-reflection is a valuable complement to policy advice

Finally, we would like to reflect on the nature of this guided, self-reflective analytical exercise as opposed to more standard policy advice. Consultancies and international organisations generally support countries and specific policies through policy reviews and advice. This typically includes reviewing the evidence, investigating the country's context and policy, conducting desk research, collecting data (e.g. through surveys, interviews), and analysing all of this to draw recommendations.

However, the process, originating in the learning seminars, was country-driven in this case. The OECD provided insights from research, facilitated discussions at the learning seminars to enrich the Dutch and Flemish self-reflection with peer feedback, and supported the framing of the analysis. To reflect and further strengthen countries' self-reflection journey, instead of giving them direct advice, we asked the Netherlands and Flanders to write their own analyses and both countries came up with their own recommendations. As opposed to policy advice, this sort of "policy coaching" builds on countries' willingness to change and supports policy action research as a tool for improvement. While a neutral, external perspective with traditional policy review and advice remains important to countries, it could be complemented with guided self-reflection (or policy coaching) approaches.

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Notes

[1] In this chapter, the Flemish community of Belgium will be referred to as Flanders for simplicity.

7 Research use in education policy making in Norway: A case study

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This chapter examines the use of research in governing and developing the education sector in Norway. It maps the landscape of education research stakeholders and strategies in the policy arena and provides an overview of the status quo of education research in Norway. It presents an analysis of policy makers' use of education research and perceptions of the strengths and gaps in using knowledge and evidence in education policy making in Norway. The chapter details the main processes and structures that Norway has put in place to facilitate the use of education research within the public sector and explores the public sector PhD programme as a particular example of a promising practice. It concludes with some key takeaways.

Introduction

The two OECD/CERI learning seminars hosted by the Netherlands and Flanders in 2022 were attended by delegations from peer countries, including Norway, who discussed practices, processes and structures to promote and facilitate evidence use in their systems. Following the two evidence use journeys in Chapters 4 and 5, this chapter is another type of output that emerged from the learning seminars, namely, a case study of research use in education policy, and policy for education research in Norway. It contextualises survey data collected from Norway in the OECD *Strengthening the Impact of Education Research* policy survey (see Chapter 1) as well as drawing on OECD follow-up communications in 2022 with officials in the Ministry of Education and Research. It features key processes and structures that promote a culture of research engagement at the system level in Norway.

A system overview of Norwegian education governance

Features of the Norwegian education system

A decentralised system

The governance and funding of Norway's education system reflect a long-established tradition of decentralisation. Municipalities have a high level of autonomy in implementing policy reforms and the day-to-day operation of schools. The Ministry of Education and Research steers national policy on education and supervises local governance. It also has direct responsibility for public higher education institutions, which receive public funds but operate with relative autonomy within a regulatory framework. In Norway, schools' autonomy over resource allocation (such as hiring and dismissing teachers) is around the OECD average, while autonomy over curriculum and assessment is below average (OECD, 2020[1]). The Directorate for Education and Training and the Directorate for Higher Education and Skills also play a major role in Norwegian education governance. The Directorate for Education and Training is responsible for inspecting kindergartens and schools and ensures that Norwegian education policy is implemented. The Directorate for Higher Education and Skills, established in July 2021, is the executive agency for the Ministry of Education and Research, and is responsible for the national skills policy.

High public spending on education and education R&D

Norway's overall education expenditure is among the highest in the OECD, with 4.6% of gross domestic product spent on education in 2018 (OECD, 2022[2]). Total spending on education research more than doubled in the period 2007-19, at NOK 2.49 billion (Norwegian kroner) in 2021 (Statistics Norway, 2023[3]), with more than half of education research carried out by state universities (Statistics Norway, 2023[3]).

Recent challenges and improvements

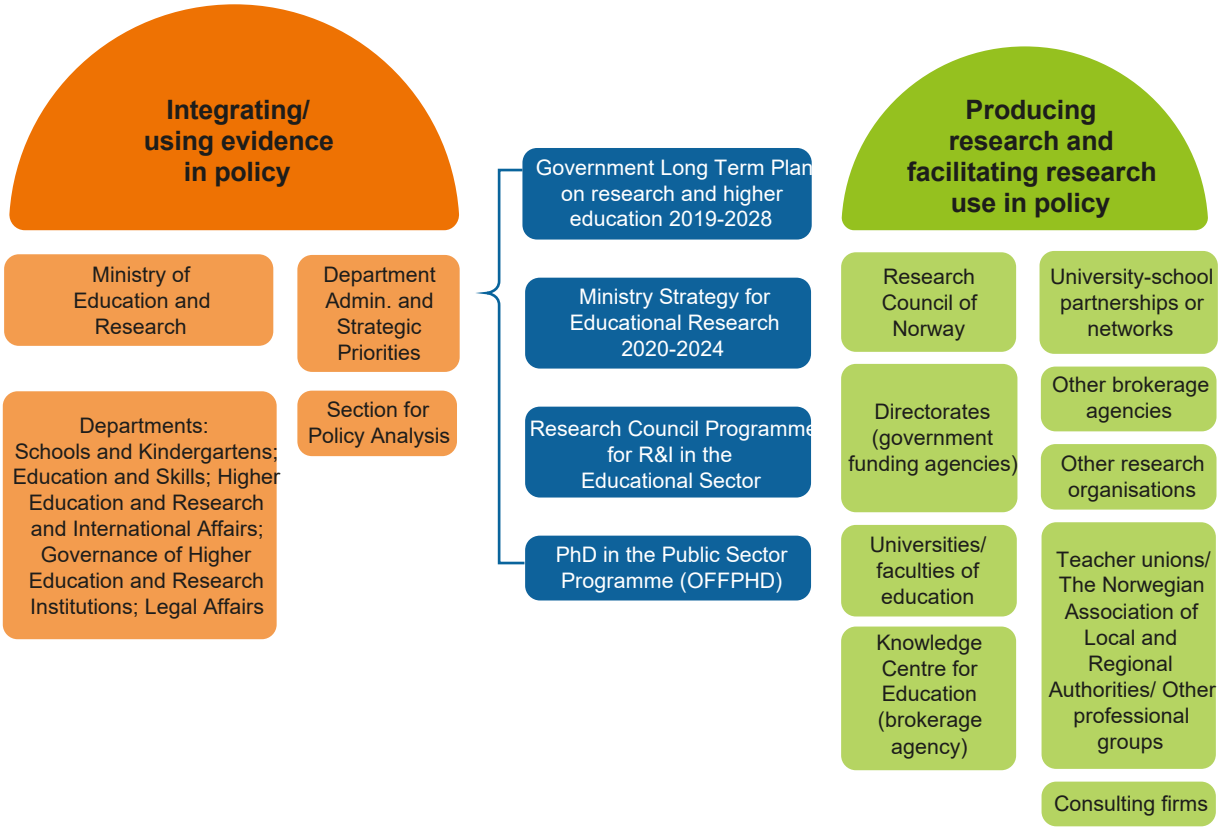
The OECD (2020[1]) analysed the Norwegian educational context in 2014 and subsequently in 2020, assessing its strengths and challenges. It called for greater alignment of different levels of governance and resources to ensure effective policy implementation across Norway's decentralised education system. It has recommended developing clear implementation strategies that engage different stakeholders, reinforcing the role of key actors at different levels, and developing a culture of evidence in which data are used strategically. Norway has developed a competence development model for schools and has subsequently worked on an implementation strategy with the OECD. The OECD review recommended a clear data framework to follow up on progress in implementation and suggested the Directorate for Education and Training could play a leading role in exploiting data to depict the nuanced landscape of education in Norway and thereby help school owners (OECD, 2019, p. 16[4]).

While a high level of decentralisation has its advantages, Norway has also encountered challenges in aligning local and national goals and ensuring the consistent implementation of policy reforms. The OECD also previously identified a need to expand data collection and exchange in areas such as evaluating lifelong learning programmes (OECD, 2020[1]).

Actors in education research and knowledge mobilisation

Figure 7.1 depicts the landscape of education research stakeholders in Norway, both within the ministry and beyond. It also shows the ministry's currently active strategies for education research, of which two – its Strategy for Educational Research and the PhD in the Public Sector Programme (OFFPHD), are examined in more detail in this case study (see Figure 7.1).

Figure 7.1. The education research landscape: Stakeholders and strategies



Note: R&I: research and innovation.
Source: Developed by the Norwegian Ministry of Education and Research for an OECD learning seminar held in the Netherlands on 2-3 June 2022.

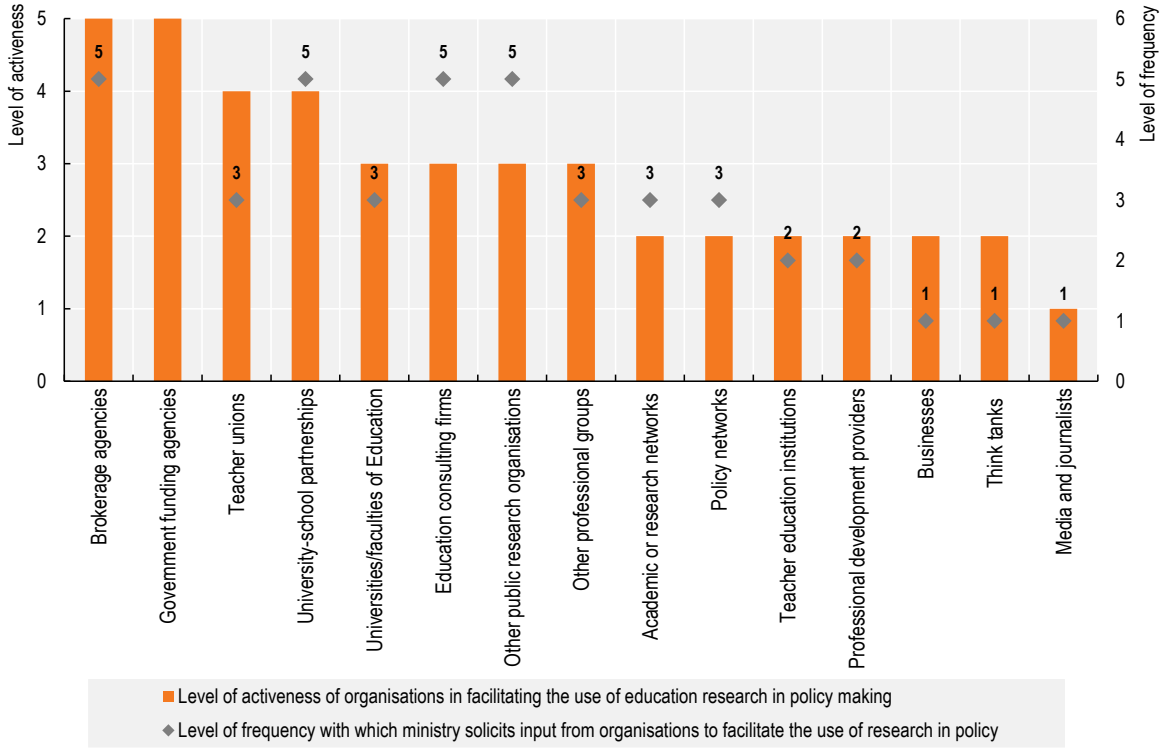
The landscape of actors in knowledge mobilisation

The Norwegian Ministry of Education and Research's response to the 2021 *Strengthening the Impact of Education Research* policy survey noted that some organisations were very active in facilitating the use of education research in policy making (outside of the ministry itself, these included brokerage agencies and government funding agencies; see Figure 7.2). Teacher unions and universities were also perceived as being active in this area. In contrast, academic associations, businesses and think tanks were not considered very active. Media organisations were not considered active at all.

The ministry has particularly strong relationships with some institutions when it comes to research use in policy making. However, it perceives some of these organisations as only moderately active despite their input being routinely sought. For example, the ministry solicits research-related inputs from public sector research organisations and education consulting firms quite frequently (every month or two) yet perceives these actors to be only moderately active in facilitating the use of research in policy.

Figure 7.2. Activeness of organisations and frequency of input

Norway's perception on organisations' activeness in facilitating research use in policy and on the frequency that they solicit their facilitation, 2021.



Notes: Data show the level of activeness of the given organisations in facilitating the use of education research in policy perceived by Norway on a 5-point Likert scale (from 1. "Not active at all" to 5. "Very active") and the level of frequency/intensity that Norway's Ministry of Education solicits the given organisations to facilitate the use of research in policy on a 6-point Likert scale (from 1. "Never" to 6. "Very frequently"). Norway did not indicate how frequently/intensively the Ministry of Education and Research solicits input from government funding agencies to facilitate the use of research in policy.
Organisations are ranked in descending order of their activeness in facilitating research use in policy making reported by systems.
Source: OECD *Strengthening the Impact of Education Research* policy survey.

StatLink https://stat.link/8qun3h

Key knowledge brokerage organisations

Knowledge brokerage agency

The Knowledge Centre for Education was established by the Ministry of Education and Research in 2013. Between 2013 and 2019, it was hosted as a unit within the Research Council of Norway (RCN). It is now

a research centre within the Faculty of Education and Arts at the University of Stavanger. It receives funding directly from the ministry.

The centre produces research syntheses for the entire education sector – from early childhood through to higher education – for practitioners, researchers and policy makers; disseminates research syntheses in ways that enable engagement and understanding; and increases knowledge about systematic syntheses of research – their relevance, their use, and how to do systematic research reviews and syntheses. Under the ministry's most recent Strategy for Educational Research, a key task is strengthening the centre to support the further development of its role as a knowledge broker.

Government funding agencies

The Directorates for Education and Training and for Higher Education and Skills commission research on education and engage in knowledge brokerage. These government agencies have responsibility for ensuring that relevant research is made easily accessible to the ministry and policy makers and that research is communicated in a way that facilitates understanding.

In 2022, the Directorate for Education and Training commissioned research for approximately NOK 81 million and the Directorate for Higher Education and Skills for approximately NOK 30 million. In reporting results from research projects to the ministry, the directorates summarise reports and articles and provide an assessment of the quality of specific studies and of the policy implications of research findings.

In 2022, the RCN issued calls for research and funded ongoing research projects in education, spending approximately NOK 400 million. RCN also collaborates with The Knowledge Centre for Education on the Programme for Research and Innovation in the Educational Sector (FINNUT) Web-database. The database gives access to all scientific publications funded by the FINNUT programme (see section below in this chapter) including peer-reviewed articles, books, book chapters and reports (EPPI-Centre, 2023[5]).

Teacher union

The largest teacher union in Norway, Utdanningsforbundet, hosts a digital research portal which aims to provide easy access for teachers and other employees to research that is relevant to their profession (Utdanningsforbundet, 2023[6]). The portal hosts 3 000 freely accessible and searchable articles on education research. While the union's main target group is practitioners, the research presented is also intended to inform policy – especially school owners at the municipality level.

The Norwegian Association of Local and Regional Authorities

The Norwegian Association of Local and Regional Authorities (KS) is the organisation for all local governments in Norway (Norwegian Association of Local and Regional Authorities, 2023[7]). All municipalities and county councils (school owners) are members. A large part of KS' development work is organised as networks and meeting places where members with similar challenges share their experiences and knowledge, including those specific to education. KS is the secretariat for various clusters for political and administrative leaders, also within education.

Scope for using education research: What is the status quo?

Norway reported in the policy survey that around 90% of education research undertaken in the country is publicly funded (Rørstad et al., 2021, p. 103[8]). Norway has made clearly targeted investments in research and innovation in the educational sector over the years and has undertaken strategic planning to increase and improve the production of educational research.

A 2018 evaluation of the state of education research found positive developments and areas for improvement (Research Council of Norway, 2018[9]). These are summarised in Table 7.1.

Table 7.1. Evaluating the status of education research in Norway

Positive developments	Ongoing challenges/areas for improvement
Increased volume of research on education	Approval rate for key funding schemes remains low, and many strong and relevant research proposals do not receive funding
Improvements in the quality of research, including an improved scope of publication of peer-reviewed articles	Imbalance of research themes reflected in funded research projects, with some areas dominating (e.g. research on primary education)
Increased relevance, with evidence that research has a high level of impact on policy and practice, and schools	Research collaboration with partners/institutions in other countries to strengthen the profile of Norwegian education research

Source: Adapted from Research Council of Norway (2018[9]), *Evaluation of Norwegian Education Research*, www.forskningsradet.no/om-forskningsradet/publikasjoner/2018/evaluation-of-norwegian-education-research.

Strengths and gaps in knowledge mobilisation

Survey data show that the Ministry of Education and Research perceives the following strengths and areas for improvement for using research in policy making.

Resources and infrastructure are generally a strength in the system. There are adequate human resources (individuals/organisations) as well as financial resources to effectively integrate education research into the policy process. There is adequate soft infrastructure (e.g. networks, databases, journal subscriptions, collaborative forums) to support the use of research. However, it was felt that policy makers generally do not have sufficient time to access and use education research.

The competences of policy makers that have specific research use roles are strong. They have appropriate knowledge and skills to understand and interpret education research; evaluate the quality of education research; and find and access research relevant to their needs. This group of policy makers also has access to extensive learning opportunities specifically tailored to developing (or maintaining) research knowledge and skills, including in-house courses arranged by the ministry and training delivered by external providers; and opportunities for secondments to national and international institutions. In addition, the ministry considers that the vast majority of policy makers in Norway have the skills and knowledge to communicate research for decision making and formulate research needs effectively.

The survey shows that the Ministry of Education and Research is quite satisfied with the extent to which policy makers use research in policy processes, and the ways in which policy makers use and access research. Overall, Norway has taken steps to ensure research evidence is systematically used in education policy. Overall, the ministry considers the following factors to be the top three barriers to increasing and improving the use of education research in policy making in Norway:

1. lack of time to access and engage with research;
2. lack of appropriate mechanisms or processes;
3. low accessibility of research (research evidence is often not in formats that facilitate its use in policy making).

These barriers are not unique to Norway: the survey data show that these are among the most common barriers to increasing the use of education research in policy in the surveyed systems.

Processes to increase the use of education research

Several promising processes are in place in Norway to facilitate the use of education research in policy. According to the policy survey data and OECD communications with officials at the Ministry of Education, Norway systematically:

- identifies policy makers' needs in terms of research knowledge
- identifies research gaps that are relevant to policy
- commissions research to address policy needs
- provides targeted funding for research on specific topics (issuing calls for research).

Norway has also established the following processes:

- programmes and projects that encourage interactions among actors (for example, a partnership or network) to facilitate the use of education research in policy making
- legislation, laws or guidelines to promote the use of education research in education policy
- a system-wide strategy for facilitating the use of education research in policy
- regular and system-wide activities to monitor and evaluate the impact of education research in policy
- regular and system-wide activities to build capacity and develop skills among policy makers to use education research
- tools, toolkits and online platforms for policy makers that synthesise and disseminate education research findings and are user-friendly.

Sectoral approach to using evidence

Specific to the Norwegian context is the "sector principle" for research. Following this principle, each government ministry is responsible for research undertaken within its area of jurisdiction. The Ministry of Education and Research is thus responsible for research on, and for, the education sector. This principle requires individual ministries to maintain an overview of the sector's knowledge needs and communicate these needs to research institutions. It also ensures that ministries systematically consider research as a tool for achieving policy goals.

The policy survey data suggest a high level of trust in research among policy makers and a high level of trust between policy makers and researchers.

In practice, the approach taken by government ministries varies. Norwegian ministries have organised themselves very differently in how they make use of research and knowledge, and there is no common organisation or structure in place across ministries to draw on evidence for policy making.

The Strategy for Educational Research

The Ministry of Education and Research has had a Strategy for Educational Research since 2008. The strategy aims to facilitate reliable and relevant education research that reflects current issues of interest and to provide a solid knowledge base to inform policy and practice in the longer run. The current strategy, which is the third, covers 2020-24 and builds on the two preceding strategies (see Box 7.1). The strategy for educational research was externally evaluated in 2018.

Compared to the two previous strategies, the current strategy emphasises dissemination and mediation of research findings: there is a sub-section on dissemination and user participation, with the stated aim also of strengthening the Knowledge Centre for Education to improve dissemination. It builds on the evidence

production-to-use model (as defined in the strategy document) that draws conceptually on the work of Gough et al. (2011[10]).

The strategy defines the core purposes of the main funding channels for education research, which complement the basic grants to education research institutions. The strategy sets an agenda for research and lays out research gaps, pointing out topics where there is a clear need to grow the research base for evidence-informed policy making and practice (Box 7.1).

Box 7.1. The development and content of the 2020-24 Strategy for Educational Research

The current strategy is in place for four years (2020-24) and is due for renewal in 2025. In the process of renewing the strategy, the Ministry of Education and Research defines key questions and invites written inputs to these questions. It also organises meetings with stakeholders to encourage dialogue. These various inputs are then used as a basis to produce a draft strategy which is shared internally within the ministry for feedback. Underlying agencies such as the Directorate for Education and Training and the Directorate for Higher Education and Skills, and the RCN, will also be providing input and feedback during this process.

How was the strategy developed?

The ministry defined a number of key questions in the preparation of the latest Strategy for Educational Research document that were based on the findings of the 2018 Research Council of Norway's evaluation report, the two preceding strategies, and general insights from staff at the ministry. Key questions included: *How can we stimulate research collaboration; across disciplines, and internationally? Is there a need to strengthen educational research in certain areas? If so, which ones, and how?* These questions were posed to researchers, collaborators at the Research Council of Norway, the Norwegian Directorate of Education and Training, teacher education institutions, the Norwegian Teacher Union, and other stakeholders in the education research environment. After obtaining inputs to these questions, the ministry organised meetings and seminars with individual groups of stakeholders to promote the work being undertaken on the strategy, encourage dialogue around the key questions, and understand the needs of each stakeholder group. In these meetings, stakeholders were invited to give a presentation to the ministry. After each meeting, a written summary was produced. Ultimately, the priority areas were defined using input from stakeholders and from within the ministry.

The ministry plans to repeat this process starting in 2023 for the next education research strategy.

What are the current strategy's aims?

- Raise the quality and increase the scope of research in selected areas.
- Promote user participation and practice-oriented issues in education research.
- Stimulate method and theory development in education research.
- Facilitate the availability and sharing of research data.
- Facilitate more reviews/summaries of research.
- Further develop research competence in teacher education.

What focus areas does it define?

Research areas defined include:

- integration (throughout the entire education system and adult learning)
- teacher education, including kindergarten education

- co-operation between educational research and teacher education (and how such co-operation takes place)
- the implications of digitalisation with regard to teaching and pupil learning
- statistics on adults and their education at primary and secondary school level
- data collection on higher vocational education, and in particular pedagogy and online teaching
- special needs pedagogy and inclusion, and research on learning difficulties
- quality in higher education, such as transitions to higher education and school dropouts.

Sources: Norwegian Ministry of Education and Research (2020[11]), *Research, mediation and use: Strategy for educational research 2020-2024,* www.regjeringen.no; communications with officials at the Ministry of Education and Research (July-October 2022).

Structures that foster evidence use in policy

Within the Norwegian public sector infrastructure, we draw special attention to four structures that promote the use of research evidence in educational policy.

Section for Policy Analysis (ARK) within the Ministry of Education and Research

ARK's aim is to ensure that policy development and administration are based on relevant and reliable knowledge. The section employs researchers, statisticians and PhD candidates that are especially equipped to understand and interpret education research, evaluate the quality of education research, and find and access research that is relevant for policy making in the ministry.

ARK provides analytical support for policy making, reports on and follows up on international research, and facilitates strategic discussions in the field of education research. It also aims to strengthen the profile of Norwegian education research and foster a long-term perspective, i.e. through setting initiatives in the ministry's Strategy for Educational Research, and following up on these.

Box 7.2. Example activities organised by the Section for Policy Analysis

Meeting Ground R&D. Researchers and statisticians are periodically invited to present their research to ministry staff. The rule of thumb is that the topic/research must be of interest to at least two departments. Themes are often relevant for the ministry's concrete policy areas but can also be selected for being novel or interesting research fields. Staff within the Section for Policy Analysis and across the departments in the ministry can suggest or request topics. Topics are also varied so that there is something relevant to each department over the course of the year.

"Research Says (…)" series. The Section for Policy Analysis organises the weekly production of a synthesised research brief on a recent study or research article. The synthesis is usually a one-page brief to ensure accessibility and is sent by email to the politicians and administrative leaders in the ministry. Each week a different staff member chooses the topic for this series and takes responsibility for producing the synthesis (the topic might be chosen from a newsletter, a recent publication or a news item from one of the 11 national research centres). It also goes on the ministry's internal website for all staff to access. As with Meeting Ground R&D, topic selection varies to offer something relevant for each department of the ministry over time.

Source: Interview with an employee in the Section for Policy Analysis, Ministry of Education and Research, 29 July 2022.

Units for research and statistics in policy organisations

Units for research have been established at both the Directorate for Education and Training and the Directorate for Higher Education and Skills (the latter established in July 2021).

The directorates are executive agencies for the Ministry of Education and Research in kindergarten and primary/secondary education, and higher education and skills, respectively. They advise the ministry and initiate research and evaluations to promote evidence-based policy development of the educational sector and ensure that children, students and apprentices receive the high-quality education they are entitled to. In collaboration with Statistics Norway, the directorates are responsible for all national statistics concerning kindergarten, primary and secondary education; higher education; and for the national skills policy.

The Programme for Research and Innovation in the Educational Sector

The Programme for Research and Innovation in the Educational Sector (FINNUT) is a programme based at the Research Council of Norway.

It is a key financial instrument for following up on the government's current policy for research on the educational system. It is a large-scale, long-term programme that promotes innovation in the educational sector and fosters collaboration among key actors, such as the Knowledge Centre for Education and the Directorate for Education and Training. It also links with other programmes, such as the OFFPHD. The programme calls for research projects within four broadly defined areas (Research Council of Norway, 2017[12]):

1. learning processes, forms of assessment and learning outcomes;
2. professional practice and competence development;
3. governance, management, organisation and achievement of results;
4. education, society and working life.

The FINNUT programme explicitly focuses on communication and dissemination among actors in the field of education as one of its core tasks. Projects funded under FINNUT must have clearly defined plans for communication and dissemination where target groups include the research community, the public administration, practitioners and the general public.

Outside of government infrastructure, the Ministry of Education and Research has established 10 national centres through the Directorate for Education and Training (Box 7.3), whose mandate is to provide professional development; knowledge dissemination; and support for research-based practice in pre-schools, schools and municipalities, thereby contributing to the implementation of the Norwegian education policy. The centres are embedded in the higher education system and offer digital resources and tools in their specific fields.

Box 7.3. Examples of national centres and education research centres established in universities

National centres

The Centre for Natural Sciences at the University of Oslo, Faculty of Mathematics and Natural Sciences' research focuses on understanding the characteristics of teaching that contribute to deep learning in science.

The Norwegian Reading Centre at the University of Stavanger, Faculty of Arts and Education, is a multi-disciplinary centre whose research concerns language and literacy development and assessment in educational contexts from kindergartens to the workplace.

The Centre for Learning Environment and Behavioural Research in Education at the University of Stavanger produces research on learning environments in schools and on socio-emotional developmental challenges among children and youth.

Education research centres

The Centre for Educational Measurement at the University of Oslo, Faculty of Educational Sciences, advises the Norwegian Ministry of Education and Research and the Norwegian Directorate for Education and Training in its area of competence.

The Centre for the Science of Learning and Technology at the University of Bergen, Faculty of Psychology, is an R&D learning sciences unit focused on the use of data approaches in understanding education and lifelong learning. The ministry established this centre to support research in the emerging field of learning analytics.

The Centre for Research in Early Education and Care (FILIORUM) at the University of Stavanger and the Knowledge Centre for Systemic Research on Diversity and Sustainable Futures (KINDknow) at Western Norway University of Applied Sciences aim to expand research on early childhood education and care and foster methodological innovation in this field.

The Centre for Research on Special Needs Education and Inclusive Practice was established in 2021 at the Faculty of Educational Sciences, University of Oslo, in collaboration with several other Norwegian universities. The centre's goal is to strengthen special education research.

Source: OECD email communications with an official in the Section for Policy Analysis, Ministry of Education and Research, August 2022.

The ministry also provides direct funding to education research centres (see Box 7.3) in Norwegian universities. These aim to further education research in specific fields. In some cases, centres function both as a national centre and as an education research centre more generally (e.g. the Norwegian Reading Centre).

A lens on learning: The Norwegian Public Sector PhD programme

The Norwegian Public Sector PhD programme (OFFPHD) was established to expand research activities in public sector bodies, increase researcher recruitment within the public sector, and promote greater collaboration between academia and the public sector. The programme enables a PhD to be undertaken in a university by a candidate working in a public sector body.

The scheme was inspired by the Industrial PhD-scheme established (first piloted) in 2008. This scheme was a huge success in industry (Schlegel and Keitsch, 2016[13]), and the Ministry of Education and Research followed up by establishing a public sector PhD scheme in 2014 to create a more research-informed public sector; develop employees' capacity in accessing, absorbing and using research in their work; and build bridges between academia and the public sector.

Methodologies and ways of working

The scheme includes a funding grant from the RCN, while the public sector body (e.g. ministry) also funds about half of the project. It is a "first-come, first-served" model for those grant applications that meet the requirements in the call, rather than being a competitive scheme. The OFFPHD is designed for those already employed within the public sector: Candidates first need approval to develop a project proposal and for partial funding in the public sector body where they work. They then submit their application to the RCN for a grant and to a doctoral programme at a degree-conferring institution. The outcomes of the three applications are interdependent (Table 7.2).

Table 7.2. Roles of partners in the PhD in the Public Sector Programme

Public sector body	Degree-conferring institution	Candidate
• Formal applicant and project owner. • Appoint a dedicated supervisor/mentor and set aside adequate working hours and resources for the completion of the project. • Ensure that the doctoral project is relevant to the applicant and its long-term needs for expertise. • Secure funding for the entire duration of the project.	• Ensure that the doctoral project maintains an adequately high scientific standard. • Grant admission to a relevant doctoral programme at the institution.	• Complete a PhD project of a duration of 36 months over a period of 3-4 years. • Spend at least one year at the degree-conferring institution and at least one year at the public entity during the project period.

Source: Research Council of Norway (2023[14]), "Public Sector PhD Project", www.forskningsradet.no/en/call-for-proposals.

Evaluation and assessment of activities

Drawing on the evaluation of the industrial PhD scheme, the RCN has formulated the following criteria for success and has shared these with public sector bodies looking to apply for the grant:

- Ensure that the PhD project is strongly anchored in the public sector body's work and the organisation has strong internal communication.
- Facilitate close and good collaboration between the public sector body, the candidate and the degree-conferring institution through regular meetings.
- Ensure that the candidate is part of both the *academic* and the *public sector* environment.

Box 7.4 gives an example of a public sector PhD project being undertaken in the Ministry of Education and Research.

Box 7.4. Example of a public sector PhD project: The impact of research on policy

"The impact of research on policy" PhD project – conducted by a candidate working at the Section for Policy Analysis (Norwegian Ministry of Education and Research) and affiliated with the Oslo Institute for Research on the Impact of Science (University of Oslo) investigates how government officials access, assess and use research in their work. The candidate worked in the ministry's research department for three years before starting the scheme. At the time of writing, the work consists of:

- A literature review on factors that influence the use of research in policy making.
- A survey sent out to employees in the majority of Norwegian ministries and six underlying agencies, for which data collection was directly facilitated by the candidate's affiliation and network as a ministry employee. The emerging analysis explores the critical role of government officials in bridging science and policy. It examines the 10% of government officials most active in: gathering external scientific knowledge; and communicating this knowledge internally, identifying groups of active research users with different roles and knowledge use patterns that together complement each other and "span the boundaries" between science and policy.
- A qualitative study based on interviews with government officials primarily in the Ministry of Education and Research. The study examines how government officials act in boundary spanning roles. Entering the organisation and studying it from the inside allows to better understand the use of research in policy. The research benefits from close access to the individuals and teams that use research, and from insight into the context in which they work. The candidate's dual role as a researcher and ministry employee made this approach possible.

Source: Interview with an employee in the Section for Policy Analysis, Ministry of Education and Research, 29 July 2022.

Which factors make this a promising practice?

The OFFPHD programme is designed to provide each of the three participating partners in the scheme with benefits.

- The public sector body receives financial support for a doctoral project that can go into depth on an issue relevant to the organisation. It furthermore gains research competence within the organisation through the candidate's doctoral training, resulting in a more research-informed civil service.
- The degree-conferring institution gains insight into relevant issues in the public sector and can establish or develop collaboration with public sector bodies relevant to its own research programme.
- The candidate earns a PhD and obtains research training and research-specific competences. The candidate can delve deeply into relevant research questions in their field within the public sector.
- The collaborative nature of the topic selection within the scheme allows policy-relevant issues to be the focus of the research. The scheme forges active links between stakeholders: in this case, between the public sector institution, the academic institution and the candidate.

What could be further developed?

While the evaluation of the OFFPHD scheme is ongoing, an initial evaluation of part of the scheme that includes only teachers and feedback from OFFPHD candidates provides some early insights into a few challenges. These suggest that all actors are satisfied with the scheme and that projects are generally of high quality.

They also report:

- The application process and approval of applicants based on a first-come, first-served model can be unfair and does not necessarily ensure professional quality.
- The PhD projects formed as part of this scheme stand out as less theoretical and more practical than ordinary PhD projects, and candidates sometimes struggle with the theoretical aspect of the PhD work.
- While actors agree that candidates should not simply return to their original positions and responsibilities, career prospects in terms of new positions and responsibilities for candidates after the PhD are unclear. While participating in the scheme, candidates also report that the time spent working on the PhD, and key research and soft skills that are developed as part of it (e.g. working independently on a large-scale project), are not taken into account in career development discussions and annual salary negotiations. This can act as a disincentive to participate in the scheme.

Conclusions

Norway has taken significant steps to devise and implement promising processes to facilitate the use of education research in policy. This case study showed how a systems approach to integrating research evidence into education policy making can be put in place. A few key messages emerge.

Regular reflection on education research and its use at the system level supports a systems approach

The processes and structures Norway has put in place at the system level to stimulate education research and its use also allow for considered and regular reflection among stakeholders. In particular, this is reflected in the development of each new strategy for educational research, which involves evaluating the previous strategy and dialogue with stakeholders. Through its systematic evaluation and updating, it is demonstrated that evidence is generated and used at the system level as well. This type of role modelling can support research use at all levels.

This type of systematic reflection, as encompassed in the process of the education research strategy, also serves to create continuity in efforts to generate relevant education research and reinforce its use. The resulting strategy is an important reference point for all stakeholders, including local municipalities and schools, and signals a consensus on priority areas. Similarly, the strategy helps to establish and clarify expectations among stakeholders.

Opportunities for reflection and input into policy decision making form part of a systems approach to education research production and its use. Ensuring these opportunities are part of stable processes and structures within the ministry is also part of a systems approach. Overall, it ensures stakeholders also have a stake in determining important questions around education research by virtue of being involved in high-level processes, including in shaping its potential relevance, and are thus more likely to use education research.

An education research strategy should incorporate a research generation and research engagement strategy

The Norway Strategy for Educational Research reflects two key elements. First, it sets out an approach to stimulate education research that is relevant to the ministry and other stakeholders. Second, it includes a clear research engagement strategy with concrete ideas of how to mobilise resulting evidence and knowledge. The latter has not always been a strong focal point of past strategies, whereas the current

strategy focuses more clearly on disseminating and mediating research findings through clearly defined processes, such as by strengthening the role of key actors in the system.

Academic-policy engagement schemes need to be strongly embedded in both communities

This case study illustrated how Norway has made progress in building capacity and developing skills among policy makers to access and use education research systematically and well through tangible programmes. The ministry has strong relationships with some institutions regarding research use in education policy, including universities. The OFFPHD programme is an example of a promising practice in this domain that also emphasises deeper collaboration between the academic and public sector communities. To maximise the potential of such schemes, these must be strongly embedded in both communities. The OFFPHD project is defined and structured to ensure the candidate's integration in both communities. Similar schemes could be envisaged for linking the research and practice communities.

Next steps

Going forward, the government of Norway has introduced a new instrument for research and innovation policy in its long-term planning. It has launched an initiative that will promote the inclusion of young people in education, employment and society using a cross-sector approach where research-based knowledge is a prerequisite. The backdrop for this initiative is that traditional research policy instruments do not provide sufficient direction and momentum to solve policy problems in time.

The initiative is currently in a design phase, during which a core aim is to ensure that policy actors, relevant research communities and research users are properly involved in its further development. User participation will be particularly vital for ensuring that the initiative has the support of actors that will ultimately use the produced knowledge (Norwegian Ministry of Education and Research, 2022[15]).

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Part III A culture of research engagement within and across research, policy and practice-oriented organisations

8 The role of learning conversations to improve outcomes for students

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Teachers and school leaders often need to address complex problems or develop or adopt innovative approaches to improve student outcomes. A more elaborate collaborative learning process is often needed to do so than regular teacher meetings usually allow. Learning conversations refer to an approach in which teachers engage with knowledge (e.g. from data and literature) about problems and ambitions to be able to systematically generate and test ideas, respond to these problems, and achieve ambitions for educational improvement. This chapter explores the idea of learning conversations in detail and outlines how teachers can use them to improve teaching and student outcomes through the development of evidence-informed policies and practices. After explaining the concept, main phases and real-life examples, the chapter discusses the key conditions and effectiveness of learning conversations. The chapter concludes with policy implications.

Introduction

Many teachers and school leaders enjoy working together (within and across schools) to improve student outcomes. Sharing their ways of working, ongoing challenges and new ideas helps them think outside the box and develop their teaching to better address students' needs. The focus on learning in communities and networks (and, specifically, in professional learning networks or PLNs[1]) has been growing internationally. Yet collaboration focused on improvement will only ever be fruitful if teachers embark on new courses of action as a result. Collaboration should thus lead to *learning*. This learning ideally involves a focus on research, data or other forms of evidence, and is encapsulated by the idea of "learning conversations" (Brown et al., 2021[1]). This chapter explores the concept and process of learning conversations in detail and outlines how teachers can use them to improve teaching and student outcomes through the development of evidence-informed policies and practices. The chapter also outlines how learning conversations operate most successfully including the key steps to facilitate learning conversations and the factors that make them effective.

What is a learning conversation?

As part of their *modus operandi*, teachers and school leaders attend many meetings. For example, there are regular team meetings, department meetings, teacher-parent meetings, professional development sessions, and so on. Much of the conversation in these meetings is centred on administrative topics, and sometimes considerable time is spent thinking about dates and planning for future meetings (Zala-Mezö and Egli, 2022[2]). However, to achieve meaningful change a laser-like focus on student outcomes and ways to improve these is a fundamental starting point. This does not mean that exchanging anecdotes and experiences about practice is not valuable. Typically, such exchange enables colleagues to get to know one another and develops trust and inspiration. Yet, more is needed to achieve the kind of learning necessary to realise positive change for students.

Moreover, meetings are often focused on *immediate action* rather than the prior step of *investigating* issues. In other words, they are addressing the symptoms of a problem rather than their cause. Of course, wanting to solve problems as soon as they are identified is understandable. However, it is much more likely that we will *actually* solve a problem when we know what the current situation is, what is *causing* it and what research tells us about how similar problems have been solved elsewhere. Taking immediate action runs the risk of spending valuable resources on "solutions" that potentially do not work, and it usually takes a while (often at least a school year) before this becomes apparent.

Consequently, a more elaborate process of collaborative learning is needed to address complex problems or develop or adopt innovative approaches to improving student outcomes. A process in which:

- cognitive dissonance is fostered [i.e. individuals experience a change in their fundamental beliefs regarding how the world operates: Chinn and Brewer (1993[3])]
- teachers engage with knowledge about the problem at hand (e.g. from data and literature) and possible causes of this problem
- teachers systematically generate and test ideas to respond to these problems (Brown et al., 2021[1]).

In the literature, many different labels are used to refer to collaborative learning. Deep-level collaboration, reflective dialogue, depth of inquiry and generative discourse are some examples (Brown, 2018[4]; Zala-Mezö and Egli, 2022[2]; Vangrieken et al., 2017[5]). Our preferred term is *learning conversation* and the next section will guide the reader through its main features.

Who participates in a learning conversation?

Participants can vary depending on the aims and focus of the learning conversation. For instance, learning conversations may involve teachers and school leaders working on an inter-subject or year group basis, or they may involve intra-subject or year group engagement. They may include teachers from different schools; local or national policy makers; other relevant stakeholders from allied professions such as health, youth justice or social care; or any combination of these. Learning conversations often involve partnerships with academic researchers, who can provide a much-needed facilitative function. The presence of a facilitator ensures that participants benefit more from the conversation. Facilitators typically organise the meetings and ensure resources for the activities. Importantly, they support the effective dynamics and interpersonal relationships between participants as they go through the activities detailed below.

The four phases of learning conversations

Once the facilitator has been selected, participants take part in a process which comprises the following four phases:

1. Learning conversations begin with a process of formulating collaborative goals for improving student outcomes.

- Current success(es) and/or challenge(s) are the starting point for developing this goal.
- These successes and/or challenges are derived based on data on the current situation in teachers' own practice.

Formulating a goal that guides the learning conversation is an activity that does not always take place in a single meeting. The process of formulating a goal starts with deciding on the theme that is considered challenging, e.g. motivational problems, poor mathematics results, inequity. Assumptions, feelings, prejudice and other types of ideas that have not yet been confirmed about the theme usually play a role in determining the need for change. Once it is agreed that change is needed – and an analysis of relevant data confirms this need – it is important to formulate a more focused, clear and measurable goal to guide further activities and ensure we can evaluate their success at the end of the process.

2. The second step is to *develop an idea to achieve the goal* by investigating, based on data and/or research evidence from the professional and scientific literature:

- the cause(s) of problems with regards to current student outcomes, as well as the factors that can help to achieve the goal (Box 8.1)
- what needs to be learnt to achieve the goal, not only by students, but first by teachers to change their practice.

Box 8.1. From data to taking action

Data about the causes of the problem and taking action

A school has identified student performance in reading as a problem. Teachers at the school have always assumed student age (i.e. an increasing number of younger students enrolling) to be the cause of the problem. The data show, however, that (younger) age and disappointing performance are unrelated. Participants study the literature to find more probable causes and collect related data, in this case, about students' conditional knowledge (i.e. knowledge of letters and naming speed) in the year before the performance problem is apparent. They find a relationship and develop an intervention focused on conditional knowledge for reading.

3. The next step, *taking action to solve causes of problems* and/or positively influence factors that help achieve the goal is key:

- Including thinking about who is/should be involved and how to secure their engagement.
- Considering what activities and resources are needed and when.

4. To complete the conversation, *evaluating process and outcomes, as well as reflection,* is vital to answer the following questions:

- Were the actions implemented as intended; how did students, teachers and possibly other stakeholders experience them?
- What have learning conversation participants learnt together and as individual members?
- How effective were the actions: i.e. has the goal, in terms of student outcomes, been achieved?
- Do the actions or goal need to be adapted? If the goal has not yet been achieved, for instance, the implementation of actions might need to be adjusted. If the goals have been achieved sooner than expected, should a more ambitious goal have been set?

In relation to this fourth and final stage, it is clear that underpinning any approach to evaluation is being able to measure change in relation to our goals.

Real-life examples: Data teams and research learning networks

Learning researchers have developed many guidelines and protocols to structure such learning conversations and ensure they can help teachers make sense of various forms of evidence to drive real changes in student learning (Brown, 2018[4]).

The first example of structured learning conversations is **data teams** (Schildkamp, Poortman and Handelzalts, 2018, p. 232[6]). Data teams consist of four to six teachers and one to two school leaders (and possibly students) who use eight steps to structure data team conversations to foster teachers engaging in deep forms of enquiry [see Schildkamp et al. (2018[7])]. In the first step – problem definition – participants gather and analyse data to establish the extent of the problem and the desired goal. Such data can be about both student well-being (e.g. survey results) and student performance and learning (e.g. mathematics test results; passing percentage in a certain grade). Some schools administer student and parent satisfaction or well-being surveys on a yearly basis. In addition, schools often have student achievement data available that they should not only use for accountability purposes but also for educational improvement in learning conversations. Next (Step 2) comes developing hypotheses (or a research question) regarding the cause of the problem or the reason the goal is not being achieved. Both qualitative and quantitative data about student learning or well-being can be used to investigate. Examples of qualitative data are interviews with students about their learning process related to the set goal and/or students' assignments showing potential causes of problems in their learning. Examples of quantitative data are the frequency of student absence or percentage of failure on previous tests related to the subject under investigation. Participants follow specific sub-steps for analysing data and drawing conclusions (main Steps 3-6) about these causes and use templates (and literature) to develop an action plan to solve the problem (Step 7). In the eighth and final step, data are again collected about whether the problem has been reduced or the goal has been achieved, and about the implementation process of the actions.

Another example of how learning conversations can be structured is the **research learning networks (RLN)** process. RLNs involve small groups of teachers coming together from a number of schools to tackle key issues related to teaching and learning. Participants attend four workshops over the course of an academic year. These workshops aim to enable participants to:

1. focus on understanding the research and current practitioner-held knowledge about the specific issues being explored and gain an understanding of what impact might look like and how (and what) to collect in order to establish the baseline (i.e. the here and now);
2. explore the baseline in more detail, develop a research-informed approach to improving practice within each school and consider how this approach might be trialled effectively;
3. trial (and, if needed, refine) their research-informed approach to improving practice and consider the idea of whole school change and how they might roll out interventions across their school;
4. consider both the impact their work has achieved and how to share knowledge of impact more widely.

The RLN and Data Team examples show that learning conversations typically also involve those not directly participating in the collaboration group. Activities also take place between learning conversation meetings. For instance, data and literature will need to be gathered in between meetings or discussed more widely with colleagues in one's school. Moreover, reflecting on evidence, discussing it with other colleagues, using their input and applying their insights when evaluating the effects of a new intervention are all essential elements in this process. There are many other examples of approaches in addition to those outlined above [for instance, teacher design teams, Binkhorst (2018[8]); or spirals of inquiry, Kaser and Halbert (2017[9])].

Learning conversations' effectiveness and supporting conditions

There is emerging evidence on the effectiveness of learning conversations. Learning conversations within RLNs have been shown to help teachers successfully engage with research evidence on effective pedagogical practices. They are also linked to enhanced teaching practices and improved student outcomes (Brown and Flood, 2018[10]; Brown, MacGregor and Flood, 2020[11]; Rose, 2017[12]). Reviews about data-informed decision-making approaches show that they can be effective in terms of both student and teacher learning. Teachers learn, for example, about how to use data and how education can be improved (Marsh, 2012[13]). Moreover, various studies find a (substantial) positive effect at the student level (Marsh, 2012[13]; Spiele, Schildkamp and Janssen, 2020[14]; Grabarek and Kallemeyn, 2020[15]) and the organisation level (e.g. more collaboration among colleagues).

However, effects of learning conversation approaches in PLNs appear to depend strongly on conditions such as leadership, facilitation, data access [see the section on "Other success factors" and Schildkamp and Poortman (2015[16]); and Schildkamp, Poortman and Groothengel (in progress[17])]. The following sections summarise lessons learnt from how these approaches and activities help support effective learning conversations.

Starting with a vision of success

What is clear from our description of both data teams and RLNs is that any learning conversation has to start with an understanding of what change in student outcomes (and thus teaching practice) is required, as well as an awareness of whether this change has been realised. For example, within RLNs, developing such an understanding involves RLN facilitators taking participants through a suite of exercises. Premised on the idea that good professional development starts with "the end in mind" (Stoll, Harris and Handscomb, 2012[18]), the first exercise asks participants to imagine what the future holds in 12 months' time. Specifically, given the problem or focus area in question – for instance, how to develop more inclusive

practices for looking after students [e.g. (Poortman and Brown, 2023[19])] – RLN participants are asked to consider "what difference do you want to make?" and "what will success look like?". They are encouraged to think deeply about: what students will be achieving and doing; how students will be feeling; what will students be saying; and how will students be responding if the new approaches participants hope to develop in relation to the given focus area prove to be effective. Participants then repeat the exercise with respect to the actions and behaviours they might engage in that would lead to this change in students. Thinking about future success this way helps participants come to a common understanding of, and a vision for, what needs to be achieved. This, in turn, helps ensure that the views of school participants are in alignment, providing a foundation for action.

Developing a deep understanding of the problem

A concrete understanding of the current situation is also required before any action commences. First, participants need to make sure the problem is worth investigating. Second, they need to understand the current situation well to know if there has been an impact in the end. Participants' pre-existing assumptions about problems and their causes are often wrong (see Box 8.2). Therefore, the next step in the learning conversation process is arriving at a comprehensive picture of the here and now. With this step, teachers need a way of measuring the "baseline" so that they know exactly what the gap between the vision and the current situation is and, over time, whether they are closing it. Baseline data also help teachers firm up their understanding in relation to potential causes of the gap and, therefore, what interventions might serve to change the current situation. Questions to ask when thinking about collecting baseline data include:

- What data need to be collected?
- What do these data concern? Do they concern students? Your teaching practice? Your team?
- Are the data readily available or do you need to collect them?
- If you need additional data, what methods will you use and why?

In addition to the baseline, two other vital sources that can inform participants' understanding of the problem and the common foci that might be supported are: teachers' own knowledge and current research knowledge (produced by universities or other research organisations). With RLNs, for example, workshop protocols and exercises are used to enable participants to bring together what is known from existing research knowledge with what they know about their context, their students and what they currently see as effective practice (i.e. their experience and the experience of others) (Brown, 2018[4]). For instance, participants might be guided to discuss and record:

- an aspect of their practice that works in relation to the topic
- the absolute best practice in their school in relation to the topic
- the basis for making these statements: i.e. what's the evidence for their claims?

After exploring challenges in relation to responding to these questions (especially the evidence for making the claims), RLN participants are presented with a literature review that sets out what is known about the focus area. The purpose of these reviews is to present research-informed principles and recommendations that can be employed as part of finding or developing solutions to the problem at hand. Following the review of literature, participants complete a "data capture" mat, a pro forma which asks participants to consider how the research and their resultant themes: connect with their own knowledge and practice; deepen their own knowledge and practice; and challenge their own knowledge and practice. In all three instances, participants refer to what was expressed in the first exercise.

Box 8.2. Vignette: The importance of data about the current situation

A school is concerned about the disappointing performance of students in the third year of secondary school. They are certain the passing rate is below par compared to the performance of third-year students nationally. Teachers consider the third-year students as unmotivated and hard to teach. However, the data they subsequently collected show that a little higher percentage of students pass to the fourth year than the national average. Further exploration reveals that performance is actually lower in the fourth year of the programme. This means that the team needs to reformulate the problem and identify potential causes for a different target group than expected. At the same time, it is quite an eye-opener for the team that the original group of students is not as problematic as they have thought for years!

Applying and evaluating

The next thing participants must do, of course, is then use their newly created knowledge to develop an approach to teaching and learning that has an impact. This approach should then be tested, evaluated and refined. One effective approach including testing, evaluation and refinement is that of lesson study, which is widely used in Japan as a form of professional development (Cheung and Wong, 2014[20]) (Box 8.3). In general, carefully planning and communicating the implementation of the approach is crucial. Participants need to make sure that everyone has the opportunity, knowledge and materials to participate in the implementation, including teachers not directly participating in the learning conversations. The implementation process and the effects both need to be evaluated.

Box 8.3. Lesson study

As a process, lesson study involves teachers collaborating, normally in groups of three, to progress cycles of iterative practice development. Such cycles typically involve the following steps:

- discussing student learning goals and identifying a teaching strategy that might meet these
- planning an actual classroom lesson (called a “research lesson”) that employs this strategy
- observing how the lesson works in practice
- discussing and embedding revisions to enable improvement (Lewis, 2000[21]).

In addition, three students, who represent wider groups of interest, will be observed and their progress will be monitored as case studies of the impact of the approach (Dudley, 2011[22]).

Other success factors: Norms of trust and innovation

There are other factors to consider in the success of learning conversations, which interact with and influence each of the four phases described above. The first is a trusting environment within the school. Trust is critical because in learning conversations, teachers need to feel able to expose gaps in their knowledge and experiment with what emerges from such conversations (Brown, 2017[23]). Trust is also vital more generally for enabling social networks within schools to share and adopt innovation effectively (Mitton et al., 2007[24]; Sebba, Tregenza and Kent, 2012[25]; Little, 1990[26]). For instance, Finnegan and Daly (2012[27]) argue that where teachers feel they do not have the knowledge or skills to challenge the introduction of an innovation, trust enables a given innovation to be widely adopted. In other words, trust helps signify that it is safe or okay to use this innovation. What’s more, higher levels of trust are significantly

associated with more frequent (and useful) relationships between individuals. This benefits a variety of relationship-related efforts, including collaboration, learning, complex information sharing and problem solving, shared decision making, and co-ordinated action (Bryk et al., 2010[28]; Tschannen-Moran, 2004[29]).

A second key factor is the existence of any historical norms regarding innovation and adoption generally (Rogers, 1995[30]). As J.W. Little (1990, p. 530[26]) notes, the likelihood of new innovations influencing individuals will rest, in part, on their congruence with established behaviours regarding the adoption of "the new". Schools particularly attuned to innovation are sometimes referred to as learning organisations. The OECD (2016[31]) publication *What Makes a School a Learning Organisation?* suggests that schools operating as learning organisations are viewed as having a dynamic, adaptive culture for change. Within this culture a range of strategies can be accessed to address the needs of the particular school community and, ultimately, the learning needs of all students. Linked to the trust factor mentioned above, learning organisations also place an emphasis on the development of professional relationships, which build a school climate of trust and co-operation (Silins and Mulford, 2004[32]). It is likely to be easy to broker innovations within innovative school cultures or within learning organisations.

However, even if such a culture does not yet exist, it can be promoted by school leaders. For instance, school leaders can extoll the benefits of innovative ideas and normalise experimenting with new ways of working (Leithwood et al., 2006[33]). An innovative culture can also be promoted by modelling an "inquiry habit of mind". This involves senior leaders actively and visibly seeking out a range of perspectives to help them address given issues; purposefully seeking relevant information from numerous and diverse sources; and continually exploring new ways to tackle perennial problems. Likewise, school leaders need to make the assumptions underpinning proposed new practices explicit so they can be challenged and improved (Schildkamp and Ehren, 2012[34]). School leaders also need to create an environment that enables new practices to be trialled, evaluated and refined (Datnow, Park and Lewis, 2013[35]). School leaders should therefore put in place structures for knowledge to be shared. This includes making available and co-ordinating time (and related processes) to enable teachers to discuss new approaches to practice.

Third, consideration needs to be given to the cultural norms regarding the specific type of innovation: for instance, whether "formative assessment" is currently standard teaching practice (Rogers, 1995[30]). If the innovative practice is totally distinct from what has happened previously, evidence suggests that a number of factors will be more likely to influence its adoption. These include: the context of the school; wider pressures and forces shaping the environment in which the schools are situated; the resources available to the school; the capacity and capability of the staff within the school; practical aspects of implementation, such as existing routines; and current norms within the school (Neal et al., 2019[36]; Koutsiuris and Norwich, 2018[37]).

And now the irrational: Emotions

There are some aspects that might be less immediately apparent but will still affect the success of learning conversations. One such factor is the role of emotion. The field of art and design provides useful insight into how emotion might be used to facilitate (or indeed hinder) learning conversations. Leading design academic, Donald Norman, argues that "the emotional system is a powerful information processing system that determines whether a situation is safe or threatening, whether something that is happening is good or bad, desirable or not" (2013, p. 47[38]). In tense and threatening situations, the emotional system will trigger the release of hormones that bias the brain in preparation for action. In calm, non-threatening situations, the emotional system triggers the release of hormones that bias the brain towards exploration and creativity (Norman, 2013[38]). A positive emotional state is, therefore, ideal for reflective thought, while a brain in a negative emotional state provides focus: precisely what is needed to maintain attention on a task and finish it.

This perspective links nicely with the educational perspectives provided by Schildkamp and Datnow (2020, p. 18[39]), who argue that the way in which practitioners view the purpose of learning conversations is vital.

In particular, efforts focused on accountability are far less fruitful than those focused on continuous improvement or equity, which are far more likely to lead to educational policies and practices that expand students' opportunities to learn. Schildkamp and Datnow (2020[39]) also link such outcomes to emotion. They suggest that when teachers have negative experiences with learning conversations, such as shaming and blaming, or feel that their time is being wasted, they are far less likely to be engaged. Positive experiences, on the other hand (for example, working with a productive team that is delving deeply into learning), are likely to encourage teachers to become more engaged and, in turn, more reflective (display higher levels of depth of inquiry).

Cycles of inquiry and learning conversations

While the four key phases described above might seem straightforward, in reality, the process is not neatly defined nor linear and will be constantly buffeted by environmental factors as people come and go and contexts evolve. The process may involve going back and forth between steps to fine-tune ideas. New insights might require adaptations of the original goal, ideas and actions that participants had previously agreed upon. Coming together regularly for a sufficient amount of time is also essential to enable an intensive learning process. In terms of organisation, many variants of learning conversations are possible as long as the approach fits the context. For example, RLNs use a four-workshop approach with four four-hour workshops spread over a period of a year (or even a more intensive eight-workshop model, if time allows). The data team approach typically involves meetings every three to four weeks over a school year period (Schildkamp et al., 2019[40]). Nevertheless, research suggests that longer term professional development with a larger number of hours works better than short-term and less intensive approaches (Yoon et al., 2007[41]; Van Veen et al., 2010[42]). While we recognise the constraints of teachers' time, the models described in this chapter (e.g. RLNs, data teams) offer sufficient time to engage participants in a learning conversation effectively.

We finish by spotlighting an important additional purpose of learning conversations. The learning conversation process is not only about finding "the" right solution as soon as possible (Schildkamp and Poortman, 2022[43]). It is also about learning how to address educational problems and realise ambitions in an evidence-informed and contextually meaningful way. This collective learning outcome enables teachers to address new issues meaningfully. Therefore, to achieve sustainable school improvement, this process should be systematic and continuous; with new cycles of inquiry enacted in relation to new problems and ambitions.

Conclusion: Learning conversations and policy

Policy makers are increasingly interested in stimulating teacher professional development in learning conversations (in PLNs). However, teachers do not always feel they have the opportunity to develop the knowledge and skills necessary for effective learning conversations in the longer term. A vision for the role of learning conversations in educational improvement at the level of the school, the school board or district, and the national level is an important condition in this respect. Moreover, room to experiment (particularly, in phases 3 and 4) and implement actions for sustainable school improvement is key. This requires sufficient meeting time but also sufficient opportunities. The wider education policy context, including teacher policies and accountability frameworks, can influence these opportunities both positively and negatively. If we expect teachers to improve education in an evidence-informed way, systemic incentives and conditions need to be in place.

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Notes

[1] For more information and practical guidelines about PLNs, refer to The Teacher's Guide to Successful Professional Learning Networks, and the sample Chapter available here: https://cloud.3dissue.net/14552/14572/14643/93270/index.html?44335.

9 The audacity of imagination: Arts-informed approaches to research and co-production

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Arts-informed approaches offer a new way for teachers and researchers to engage with research and capture diverse community perspectives to advance equity in schools. This chapter outlines different types of arts-based approaches, with concrete examples from three initiatives from Canada. The chapter proposes an actionable configuration of context + mechanism = outcome embedded within five key dimensions that influence arts-based engagement with research: 1) features of the approach; 2) resources and infrastructure; 3) relationships and collaboration; 4) skills and experience of stakeholders; and 5) realising impact from engagement. The chapter concludes with four propositions on the value of using arts-informed approaches to improve culture and learning within research-practice partnerships.

> "Every great advance in science has issued from a new audacity of imagination." (Dewey, 1929, p. 310[1])

Introduction

The struggle to make data, research and evaluation more useful to frontline practitioners in education has been over four decades in the making (Cooper and Levin, 2010[2]; Weiss, 1979[3]). As the field known as knowledge mobilisation (KMb) has evolved, so too has the recognition of the need to move beyond traditional research and dissemination approaches. Consequently, interest in using arts-informed approaches within research, evaluation, dissemination and partnerships to increase stakeholder engagement is growing (MacGregor et al., 2022[4]). This chapter explores two overarching questions using studies set in the Canadian context: How can arts-informed approaches to co-production within research-practice partnerships (RPPs) improve learning within and across research, policy and practice-oriented organisations to strengthen stakeholder engagement and improve evidence use in public education systems? How can we evaluate the impact of KMb efforts across diverse partnerships and educational contexts? Four interrelated problems set the stage for our work:

1. Stakeholder engagement: Widespread recognition that traditional research approaches must move beyond stakeholders included only as passive study participants and encourage substantive collaboration via co-production (Cooper, 2014[5]; MacGregor, 2021[6]).
2. Multi-stakeholder networks: The need to build more substantive, long-range, multi-stakeholder networks comprised of diverse educational stakeholders called research-practice partnerships (Coburn and Penuel, 2016[7]; Cooper et al., 2022[8]; Tseng, Easton and Supplee, 2017[9]).
3. Research and KMb products: Empirical work showing that traditional research products, including long, uninspired reports and journal articles hidden behind paywalls, are not dynamic enough to engage stakeholders, so are insufficient to move the evidence-needle in public service sectors (Farley-Ripple et al., 2018[10]).
4. Measuring impact: Evaluating evidence use across RPPs and co-production mechanisms remains a complex challenge (Cooper et al., 2018[11]; Henrick et al., 2017[12]; MacGregor and Cooper, 2022[13]; MacGregor, 2021[6]).

While bodies of empirical work are amassing on RPPs, there is still very little work on co-production and the use of arts-informed approaches to increase stakeholder engagement within KMb initiatives and multi-stakeholder educational networks. International examples focusing on arts-informed approaches to research and stakeholder engagement are scarce, but some studies are emerging across global contexts. Ball et al. (2021[14]), in a new rapid review of arts-informed approaches to stakeholder engagement, found the largest share of articles emerging from the United Kingdom (N=18, 33%), followed by Canada (N=11, 20%), the United States (N=9, 17%) and Australia (N=5, 9%); there was one study from Chinese Taipei, with the remaining articles including an international focus (N=7, 13%) and 3 (6%) that were not country-specific (summarised from p.28). While data from this chapter are based on three studies in Canada, the emergent findings have the potential to be applied more broadly in other international contexts.

To address these persistent global challenges, this chapter focuses on co-production and the arts as a way to improve culture and learning for research engagement. It does so via inclusivity and broad participation across diverse stakeholders to achieve common goals and meet the needs of various groups within and across educational organisations in RPPs. The chapter draws on data from Canada but is situated in the broader international work emerging on this topic. It first sets the stage by exploring how conceptualising research and evaluation as creative endeavours, particularly in arts-informed approaches to co-production, creates opportunities to move knowledge into action (KMb) with diverse practitioner,

policy-making and community partner organisations. Second, the chapter addresses the ever-illusive problem of evaluating evidence use and impact by proposing an actionable configuration of context + mechanism = outcome (CMO). This configuration is based on the work of Hoekstra et al. (2020[15]) and is embedded within five key dimensions that influence arts-based research (Ball et al., 2021[14]) to understand the influence of arts-informed approaches to co-production in RPPs. Third, the chapter provides concrete examples to show how arts-informed approaches were operationalised with stakeholders in research, evaluation and KMb spanning three diverse initiatives in Canada including school and community partners: 1) across the Network for Evidence-Informed Policy and Practice (NEIPP); 2) in a school-wide initiative to support youth Mental Health and Well-being (MHWB); and 3) with community organisations across Rural Artists-in-School Partnerships. The chapter concludes with four propositions on the value of using arts-informed approaches to co-production within RPPs to increase evidence use in education.

Setting the stage

> *"Every art communicates because it expresses. It enables us to share vividly and deeply in meanings… For communication is not announcing things… Communication is the process of creating participation, of making common what had been isolated and singular… the conveyance of meaning gives body and definiteness to the experience of the one who utters as well as to that of those who listen." (Dewey, 2005, p. 253[16])*

Why use the arts?

There are many reasons to use the arts to change and improve the culture and learning around evidence use in education systems. First, the arts offer a distinct way of seeing (Barone, 2008[17]) and can promote meaningful reflection understanding, and representation of individual and communal experiences. Greenwood (2019, p. 3[18]) highlights that a primary reason for the emergence of arts-based approaches to research "is recognition that life experiences are multi-sensory, multi-faceted, and related in complex ways to time, space, ideologies, and relationships with others." A growing number of researchers believe that traditional approaches to research are primarily "cerebral, verbal and linearly temporal approaches to knowledge and experience".

As such, using the arts in research offers different pathways to accessibility for a broader range of stakeholders.

Second, arts-based approaches lend themselves well to co-production. Co-production is a social and political process (Beckett et al., 2018[19]) involving stakeholders as active agents and not merely passive recipients of services (Heaton, Day and Britten, 2016[20]). We advance Greenhalgh et al.'s (2016, p. 406[21]) conceptualisation of "research as a creative endeavor, with strong links to design and the human imagination", arguing that co-production creates opportunities for stakeholders to engage more fully with how evidence might be better integrated into their professional settings. Stakeholders are defined as those who have "a vested interest" in the research and its findings (Patton, 2008, p. 61[22]). Over time, the sphere of who might be considered a stakeholder, and thus who might be involved in co-production, has expanded in response to the need for local learning to address increasingly complex societal challenges (Boaz, Shea and Borst, 2021[23]). The arts can promote meaningful reflection, understanding and representation of individual and communal experiences. Creativity, catalysed via arts-informed approaches, is recognised as an interactively negotiated phenomenon; it is therefore enhanced through collaboration (Sawyer and DeZutter, 2009[24]). As such, this chapter argues that processes of co-production in RPPs among researchers, evaluators, practitioners and policy makers can be augmented using artistic tools and practices.

Third, the use of arts-based approaches to increase public engagement with research is growing. Equity is emerging as a rationale for using the arts in research to represent diverse and pluralistic views on

complex societal issues. Evidence suggests that using a variety of arts-based approaches (such as photography) is an effective mechanism to engage marginalised communities in research in new ways (Ball et al., 2021[14]). Many of the international examples of arts-based approaches focus on equity issues (LGBTQ+, racism, gender inequity and more) and provide powerful narratives that centre diverse perspectives and community voices.

Culture and learning around evidence use are evolving, and researchers, practitioners and policy makers should remain open to exploring how co-production and the use of arts-based approaches might extend current work globally. Research is needed to explore the impacts of these approaches, but first, schools and RPPs need to be open to experimenting with different avenues to achieve different, more pluralistic research designs that centre substantive collaboration within multi-stakeholder partnerships.

What do arts-informed approaches look like in practice?

Arts-based approaches in research can include a wide range of activities at different stages of the research process, from initial research design, data collection and data analysis to a mechanism to improve stakeholder engagement or support how research can be disseminated through KMb products and initiatives. Arts-based approaches include a diverse array of types and genres when used in practical settings, including: visual arts, performing arts, creative writing and games. The descriptions below are summarised from two reviews (Ball et al., 2021[14]; Kukkonen and Cooper, 2018[25]) (for more details on specific studies, see the original publications).

Visual arts [summarised from Ball et al. (2021[14])]: Visual arts approaches include illustrated books, comics, quilting and mixed media such as photography, video (film and animation), drawing, painting, sculptures and visual displays for the public (art installations). Illustrated books and comics are being used across the health and education sectors to capture complex lived experiences of communities and to cross limitations of language or age groups (i.e. graphic novels on research for children and adolescents). Quilting can be collaboratively produced with stakeholders and often represents images and concepts to capture unique cultural and geographic contexts. Photography, displayed through public exhibits and web galleries, often evolves from research methods such as photovoice. Photovoice is an action research method that places emphasis on community engagement and driving social change. Research participants take pictures that represent their point of view on a particular issue. The photos are then used to promote dialogue among the public and policy makers (Ball et al., 2021[14]).

Video can include documentaries of lived experiences, interviews on a topic, actors playing roles from study findings and animations (Ball et al., 2021[14]). Public screenings of videos can widely engage the public and diverse stakeholders in accessible ways. Drawing, painting and sculpting often include co-production activities in which participants generate works as a way to convey experiences on complex research topics. The quality of the art is not important; rather, it is how the creation process in arts activities and sharing elicits new pathways to understanding community and stakeholder perspectives. Art installations represent yet another area where the public can have an immersive experience (such as a booth where people enter and say a sentence on the topic, then those quotes are projected around the room randomly and anonymously).

Performing arts [summarised from Ball et al. (2021[14])]: Performing arts approaches to research and co-production include music, dance and drama, usually through live performances emerging from research findings that collate diverse experiences from educational stakeholders. Music has been used to capture the feelings of participants or partners (sentiment analysis). Dance has been used in schools as an entry point to discuss mental health. Drama approaches use plays and performances often comprised of direct quotes from participants and communities and performed by actors to increase awareness of pluralistic views centring the actual words (voice) of different groups – often from marginalised populations or in relation to equity issues (such as LGBTQ+).

Creative writing [summarised from Ball et al. (2021[14])]: Creative writing approaches take many forms, such as poetry and short stories, and these are often written by and with educational partners during facilitated activities with clear parameters. As an entry point or warm up for other arts approaches, researchers and facilitators can use writing as a way to begin individual exploration across divergent viewpoints with timed prompts that give a specified allotment to answer encouraging free writing (one prompt per 30 or 60 seconds that encourages collaborators to think across divergent positions – for or against an issue, or anticipating what different groups positions might be and why).

Games [summarised from Ball et al. (2021[14])]: Creating games to use with stakeholders can engage teachers on how to solve problems or consider resource issues. Ball et al. (2021[14]) list three types of games from their review of arts-based approaches: video games, board games and street-based games. In the Canadian context, Dr Melanie Barwick from Sickkids Hospital has created a knowledge translation game to teach multi-stakeholder networks how to plan and implement evidence-based policy and practice across a range of contexts and challenges.

Although each genre has distinctive elements, they all encompass multiple creative processes and media as methods of reflecting, thinking, exploring and communicating. The arts, and arts-informed approaches in particular, have a core value of finding more effective ways to represent understanding, communicate experience and engage people. In this way, there is a through-line linking co-production and arts-informed approaches entwined around the relational and process aspects of researchers and evaluators creating meaning with stakeholders (Ball et al., 2021[14]). This chapter argues the potential for the arts to play a supportive role within a holistic inquiry (Stanley, 2009[26]), where the quality of the art is less important than how it informs understanding. Box 9.1 provides two examples of tools that can support RPPs in designing arts-informed approaches to begin experimenting using the “audacity of imagination”.

Box 9.1. Two practical tools to design and implement arts-based approaches within research-practice partnerships

People need practical frameworks, tools and templates to operationalise arts-informed approaches for co-production with research, evaluation and evidence initiatives. This box highlights two practical resources. The first is an arts-based knowledge translation (ABKT) planning framework that can be used by researchers or other stakeholders to support the design of an arts-based research engagement.

Arts-based knowledge translation planning framework

Figure 9.1. Arts-based knowledge translation planning framework for researchers

Source: Source: Adapted from Kukkonen and Cooper (2018[25]), "An arts-based knowledge translation (ABKT) planning framework for researchers", https://doi.org/10.1332/174426417X15006249072134.

A guide for the development of arts-based approaches

Gardner et al., drawing on research from RAND Europe and commissioned by the THIS Institute, developed a resource, entitled "Arts-based engagement: a guide for community groups, artists, and researchers" to guide the development of arts-based approaches. The guide covers six key areas: 1) what is public engagement and why do it? 2) why use an arts-based approach to engagement? 3) choosing the right approach; 4) what affects success or failure; 5) evaluating your project; and 6) what's the evidence?

In order to increase the likelihood of success of an arts-based research engagement, the guide offers advice on how to run an activity and how to build relationships of trust over time; details the resources and infrastructure that are needed for a project; and explores the importance of planning for impact through robust evaluation.

Sources: Kukkonen and Cooper (2018[25]), "An arts-based knowledge translation (ABKT) planning framework for researchers", https://doi.org/10.1332/174426417X15006249072134; THIS Institute (2021[27]), "Arts-base engagement: a guide for community groups, artists and researchers", www.thisinstitute.cam.ac.uk/research-articles/arts-based-engagement/.

What influences how arts-informed inquiry unfolds in research and stakeholder engagement?

The potential value of arts-informed approaches to transform culture and learning for evidence use in schools requires further delineation of what it looks like in practice. Ball et al. (2021[14]), in a rapid review analysing 54 publications, explore arts-based approaches to public engagement with research by asking: What does arts-based engagement with research look like in practice and what influences how it unfolds? The review identifies four stages in how arts-based engagement occurs in practice:

1. conception, planning, establishing collaboration and securing funding;
2. producing the arts-based intervention;
3. delivering the arts-based engagement approach to the intended audience;
4. evaluation (a stage often ignored across emerging literature and empirical work).

Five key influences on how arts-based approaches with research unfold, shape engagement and impact thereof include:

1. Features of the arts-based public engagement approach and its associated interventions: relevance and accessibility of content, complexity of components, and style of delivery.
2. Resource availability and infrastructure: financial resources, time, facilities, and governance and administrative infrastructure.
3. Relationships and collaboration-related influences: the ability to recruit and retain the right stakeholders; the importance of consulting stakeholders on the design of arts-based public engagement interventions, implementation and adoption issues; and context-awareness and context-sensitivity.
4. Skills and experiences of stakeholders: technical and social skills, prior and lived experience, and training and skills-building.
5. Influences related to realising impact from engagement: building in evaluation mechanisms, timely feedback and financial support for uptake-related activities, and stakeholder support for dissemination activities and promotion [Ball et al. (2021[14]), summarised from pp. 33-36].

These five key influences are used below to frame and analyse the examples from the three cases of the use of arts-informed approaches to co-production, joint research analyses and in creative knowledge translation products.

A model to assess principles, strategies and impacts of research partnerships: context + mechanism = outcome

Measuring evidence use in educational policy and practice remains a complex challenge across KMb initiatives and RPPs for large-scale change (Cooper, Shewchuk and MacGregor, 2020[28]; Henrick et al., 2017[12]). Building on the work of Hoekstra et al. (2020[15]), which reviewed principles, strategies and outcomes of approaches to research partnerships, we propose an actionable configuration of **context + mechanism = outcomes** to measure how arts-informed approaches to co-production were used across initiatives to increase evidence use in educational partnerships and organisations (Table 9.1)

Table 9.1. Actionable CMO configuration to assess principles, strategies and outcomes of research partnership approaches

1. Contexts: Co-production principles	**1.1 Relationships between researchers and stakeholders:** Build trust, credibility, transparency; value diverse expertise of members; share in decision making and leadership; address power dynamics to promote equity; ensure representation and inclusivity. **1.2 Co-production of knowledge:** Partners co-produce knowledge, are meaningfully engaged; all members have ownership over data and knowledge products; balance scientific rigour alongside practical needs for actionable knowledge; implement in real-world settings. **1.3 Meaningful stakeholder engagement:** Partners plan and reflect on a strategic approach to collaboration; a flexible, creative, tailored approach to activities; researchers and partners benefit; stakeholders' needs are identified and research is relevant to those needs. **1.4 Capacity building, support and resources:** Partners build capacity across all members; ensure bidirectional exchange of skills, knowledge and capacity between members of the partnership. **1.5 Communication between researchers and stakeholders:** Foster regular, open, clear, honest communication among members. **1.6 Ethical issues of collaborative research activities:** Partners address ethical issues related to collaborative research activities.
2. Mechanisms: Co-production strategies	**Strategies throughout the research process:** **2.1 Relationships between researchers and stakeholders:** Initiate partnerships, use targeted and/or open strategies; monitor, experiment and evaluate collaborative activities on an ongoing basis; work together to define norms, rules, expectations and levels of stakeholder engagement, roles and commitment; use a variety of activities to foster collaboration (i.e. common language, negotiating conflict, tailoring needs of teams, providing opportunities to socialise). **2.2 Capacity-building, support and resources:** Training opportunities for all team members; time, resources and funding to support collaborative activities, payment for stakeholders; provide practical and emotional support to overcome barriers to engagement. **2.3 Communication between researchers and stakeholders:** Use a variety of methods to facilitate communication across the team – verbal methods (structured meetings and brainstorming sessions), written methods (email, surveys), visual methods (photovoice), in-person and via mediated methods (on line, etc.). **Strategies at specific phases in the research process:** **2.4 Stakeholder engagement in research planning:** Strategies include stakeholder engagement in defining research questions, the development of research protocols and instruments (interview guides, etc.), and input on participant "information materials". **2.5 Stakeholder engagement in conducting the research:** Strategies include stakeholder engagement in data collection (i.e. participant recruitment, study outcomes, conducting interviews, literature reviews), data analysis and implementation of the findings. **2.6 Stakeholder engagement in dissemination and application of the research:** Strategies include stakeholder engagement in writing reports and papers (co-authors), presenting findings to academic and community audiences, developing an implementation action plan to ensure the use of the findings to create change.
3. Outcomes: Co-production Impacts	**3.1 Impacts for researchers conducting partnership research (individual level):** Increased understanding of community issues. **3.2 Impacts for stakeholders involved in partnership (individual level):** Increased capacity, research relevance, empowerment. **3.3 Impacts on the relationship between researchers and stakeholders (partnership level):** Increased synergy, respect, understanding. **3.4 Impacts on community or society:** Increased system change, policy making, community services, capacity, community empowered. **3.5 Impacts on the research process:** Increased relevance of findings, effective interventions, increased capacity, new information.

While we apply CMOs to our three examples of arts-informed approaches to co-production with diverse stakeholders, this configuration has the potential to be used more broadly across RPPs to assess evidence use and research impact.

The conceptual framework guiding this work

The conceptual framework guiding this work combines: (1) CMO configurations to measure co-production and partnerships (inner circle), embedded in (2) the broader key influences on arts-based approaches with research (outer circle) identified by Ball et al. (2021[14]) (Figure 9.2).

Figure 9.2. Measuring co-production and key influences of arts-based approaches within research-practice partnerships

Note: CMO: context + mechanism = outcome.

Where the rubber meets the road: Operationalising arts-informed approaches

> "Art is the most effective mode of communication that exists." (Dewey, 2005[16])

A major challenge for increasing evidence use in education is reporting and articulating often tacit dimensions of what factors contribute to effective stakeholder engagement within RPPs between researchers, policy makers, practitioners and the broader community. We illustrate how we operationalised arts-informed approaches to co-production using three examples, each with a unique focus, different approach to the use of the arts, but all grounded in the similarity of working with frontline educational stakeholders to improve schools through the better use of evidence.

Example 1: The Network for Evidence-Informed Policy and Practice

In the first example, arts-based approaches supported a developmental evaluation of large-scale, multi-stakeholder networks to improve research use in education. The *Network for Evidence-Informed Policy and Practice* (NEIPP) includes four interconnected RPPs focusing on math, equity, well-being and indigenous knowledge. The NEIPP's purpose is to build, advance and apply robust evidence of effective practices through research use, synthesising state-of-the-art knowledge from existing bodies of evidence and facilitating networks of policymakers, teachers and researchers working collaboratively to apply research to practice. Each RPP is comprised of diverse organisational partners, including schools, universities, community organisations and cross-sectoral partners. Developmental evaluation engages stakeholders to co-produce research priorities, generate useful data relevant for practitioners and policy makers, and interpret emerging findings with a focus on using the evidence generated from developmental education to improve relationships, processes and outcomes for stakeholders (Patton, 2010[29]).

We used arts-informed approaches to break free from conventional thinking about their networks during a full-day capacity-building event held with 60 participants, including policy makers, funders, researchers, network leaders, and school and community partners. Participants were organised into eight groups. The event was organised as follows:

- We opened by explaining the purpose of the evaluation and invited networks to share operational updates.
- Second, we used an activity to create a dialogue of how networks were engaging with communities, how they were (or were not) connecting with researchers, and asked how the government's role and policy-making landscape were influencing their work (facilitators/obstacles).
- Third, we facilitated two arts-informed activities (audio-recorded and transcribed verbatim): 1) inviting each small group to create and discuss a visualisation of their network's goals; and 2) inviting them to develop concept maps of barriers and facilitators for their networks using large poster paper to show connections between ideas and potential entry points to improve research use for change.
- Finally, we concluded with open brainstorming on hopes and hesitations, and how researchers could support diverse participation across future work without creating undue burden to practitioners and partners.

The co-produced artefacts emerging from arts-informed activities within the NEIPP

The arts-informed approaches resulted in collaborative visualisations from the RPPs involved. To model an arts-informed approach to thinking differently about our collaborative networks for research use, we

shared an image conceptualising our role as researchers in the developmental evaluation and described our image to the group (Figure 9.3).

Figure 9.3. Visual conceptualisation of developmental evaluation

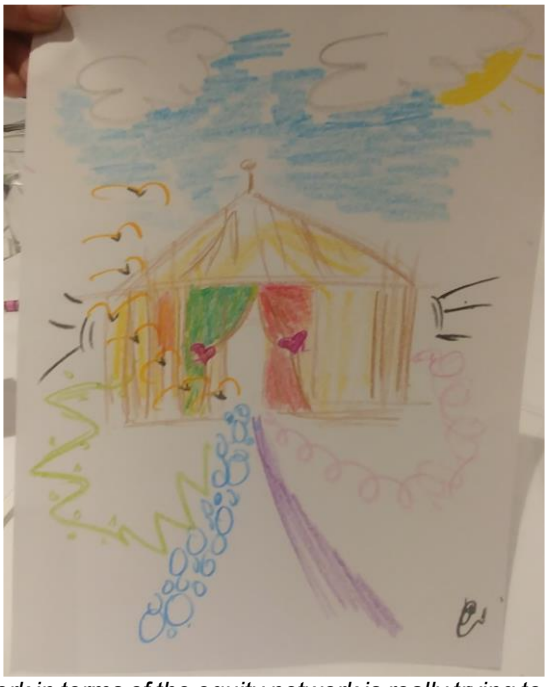
Transcribed description: Developmental evaluation is a continual, interactive, data-informed process to influence decision making in emerging, rapidly evolving, innovative programmes. Developmental evaluation frames learning as a form of accountability and asks: How do we translate our new understandings into programme action? Our drawing shows evaluation as a bridge between diverse multi-stakeholder networks (left) and the developmental evaluation team facilitating reflective processes through holding up a mirror back to the networks (right) and engaging leaders and participants in dialogue about change and improvement. The evaluative bridge becomes the umbrella, under which the knowledge networks exchange ideas in a non-linear, multiple directional flow of strategies.

Source: Amanda Cooper (reproduced with permission).

After discussing our role as researchers and its potential contributions to the NEIPP's innovative efforts, we invited each group to create their own visualisation of their network (encouraging them to think of metaphors, analogies and unconventional ways to think about their professional work to apply evidence in their priority areas). We then asked each group to share and describe the creations with the larger group (which we recorded and transcribed verbatim).

The equity RPP created a multi-coloured tent with many pathways to represent their work in schools regionally on diversity and inclusion (Figure 9.4).

Figure 9.4. Visual representation of equity research-practice partnership from arts-informed co-production approach



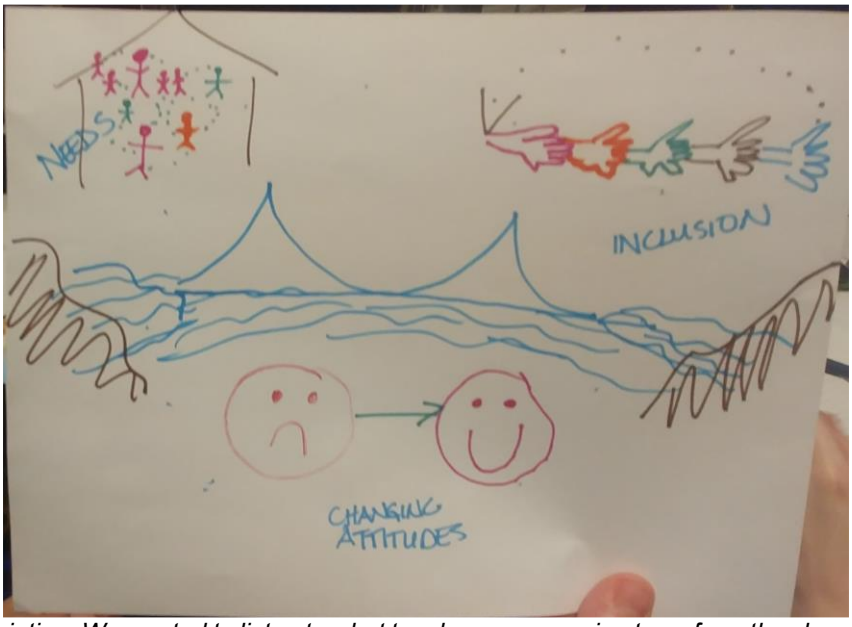
Transcribed description: Our work in terms of the equity network is really trying to build our capacity and establish a structure. So we chose the tent and it was a collaborative effort. If you trace the etymology of "tent", it means to extend or stretch. So we are inviting people to come and join us in the tent. We are inviting them to stretch and extend the way in which they might imagine equity within their own communities. But also in terms of the tent, we have different paths to the tent and if we look at the etymology of "paths", it means to suffer from. So if we are talking about systematic barriers, several different communities within the schools like students and teachers are going to have systematic barriers that cause a certain amount of suffering for those individuals or communities. So we have five different paths to get to the tent, which represent the five themes of the network. But also thinking of the tent in terms of some of the conversations we've had today about sustainability and building capacity… Relationality is one of our key principles and so... is the kind of relationship you have outside of the tented place, similarly to what you have inside.

Source: Amanda Cooper (reproduced with permission).

We learnt very different things than the traditional data collection methods (interviews with leads) had elicited. The equity network was facing barriers to access within some school districts due to hesitation around confronting some of the equity issues (racism, etc.). We also learnt the network had an abundance of resources to employ and had thrived in working with local communities outside of the schools (a pathway they took when access within schools became a barrier).

The math RPP faced the opposite challenges. Their visualisation showed three pillars of activities: needs, inclusion, and changing teacher and student attitudes (Figure 9.5).

Figure 9.5. Visual representation of math research-practice partnership from arts-informed co-production approach



Transcribed description: We wanted to listen to what teachers were saying to us from the classroom. So it wasn't a model where we were going into the school and saying "here's what we think you should try". We didn't want to come in and be proposing anything external to the school or methods for fixing the school… So a very key principle was this idea that… we wanted to engage in practices that were needs-based, based in schools and being incredibly inclusive… French communities… indigenous knowledge and mathematics community of practice. We wanted to broaden the idea of participation both in gender and diversity in race and ethnicity. And finally, we wanted to change attitudes. We wanted something where mathematics was being celebrated with teachers and classrooms and families and it was a topic of discussion and interest rather than a struggle. And so those have been the three principles that have been guiding all of our work from the onset. Inclusion, attitudes and needs-based.

Source: Amanda Cooper (reproduced with permission).

The image depicted a chasm between needs and inclusion, highlighting that equity considerations such as socio-economic status often drove differential outcomes for students, schools and communities. Unlike the equity network, they had easy access to schools; in fact, they had more schools and classrooms interested in their programmes and initiatives than they could support and fund despite millions of dollars from the government. Their resources were quickly outstripped by the high demand of the number of schools wanting to be involved, which they attributed to the policy context and the government's focus on improving math instruction and student outcomes.

A third group asked facilitators if they could change the format of the activity and, rather than draw, find an online image to depict the importance of communication across the four networks in sharing both best practices and failures to learn across priority areas and partnerships (Figure 9.6).

Figure 9.6. Visual representation of communication across research-practice partnerships within the NEIPP from arts-informed co-production approach

Transcribed description: There were two faces looking at each other and that symbolised… a willingness to communicate and try to learn from each other. And not necessarily faces looking away… it could be outwardly, but I thought that inwardly was an image that showed tentativeness and opportunity to try and listen… The image of the mouth shows possibilities for voice – not that voice always is present but there is a possibility in something that we hope to support and actualise… The things going back and forth are actually birds in the trees and we thought that this was the sharing of ideas back and forth… The notion for us to reflect. The two trees don't have leaves on them, so an understanding and thinking about reciprocity and growth will spring forth leaves and possibly other smaller trees as we move forward. We also talked about the community piece. And how sometimes communities are… No not sometimes… A lot of the time, it is difficult to define because communities do have boundaries, but those boundaries are not necessarily hard boundaries. It may be difficult to talk about who may be in and who may be out of a community, and who may be in and out [repeatedly], and you know these things are dynamic. So as you see, both faces of the trees don't have defined edges and that gives us an opportunity to keep evolving and growing, which is what has happened to our network moving forward.

Source: Amanda Cooper (reproduced with permission).

Their different approach showed the importance of allowing participants flexibility to take up arts-informed activities in different ways that make them more comfortable. The image itself spoke of the fluidity of learning and communication across the broader initiative. It highlighted hope in the willingness to collaborate with diverse groups and engage in meaningful dialogue and iterative and reciprocal processes for the initiative to increase research use to succeed at scale across large-scale systems involving thousands of schools and many school districts.

What we learnt: Emerging lessons across CMO configurations from the NEIPP

Different priority topic areas for research contributed to accessibility and gate keeping within school districts

We learnt that networks based on different priorities that were more (math) or less (equity, well-being, indigenous knowledge) aligned with the policy landscape and government's priorities were grappling with highly divergent socio-historical experiences with their partner organisations, the funder, and the broader education sector in their jurisdictions (*context*). To introduce arts-informed approach, we modelled the process (*mechanism*) by sharing and explaining an image our team created to conceptualise developmental evaluation (see Figure 9.3)

Research-practice partnership success was influenced by trust and the length of the relationship (new networks versus emerging or established networks)

During discussions of the imagery for each network (*mechanism*), we learnt of the different facilitators and barriers each network was facing in large-scale implementation efforts. These activities unearthed network

differences based on the age of the initiative and the strength of relationships with new versus partners they had worked with before (*outcome*).

Arts-based approaches elicited different data and perspectives than traditional research methods

Through the artistic representation of networks, participants developed a better sense of unity across networks and the broader NEIPP initiative, understanding one another's experiences and perspectives in ways not previously captured through annual reports, administrative meetings or interviews with network leads (*outcome*). For instance, interviews with network leads tended to elicit similar types of language and rhetoric based on the policy initiatives, whereas the metaphors such as tents that emerged from arts-based approaches encouraged the networks to think divergently about their partnerships and work.

Some stakeholders were uncomfortable using arts-based approaches

Many groups conveyed how different this activity felt (and some communicated deep discomfort with drawing or working in this way), but ultimately the research took on a unique narrative (in contrast to surveys and interviews we had conducted), and contributed to a better understanding one another's experiences and perspectives in ways not previously well articulated through annual reports and administrative meetings.

Using arts-informed approaches to research and discuss equity issues is particularly promising

The RPPs involved in the NEIPP articulated (through comments and reflective data collected during the day-long session) that arts-informed approaches might be especially salient to promoting diverse types of engagement and learning and capturing different perspectives from stakeholders, especially those from historically marginalised communities.

Example 2: Supporting youth mental health and well-being

In our second example, arts-informed approaches supported understanding student experiences and school-wide engagement with a youth MHWB initiative in a school district. The work, using collaborative approaches to evaluation (CAE) (Shulha et al., 2016[30]) explored the role of new mental health professionals in schools to improve youth MHWB. The CAE team included 33 stakeholders representing district leadership, school leadership, teachers and mental health professionals, student-leader researchers, community organisations, and the evaluation research team.

Our arts-informed approach focuses on data generated by more than 70 teachers and 400 youth participants during two full-day sessions in one school district. The arts-informed engagement unfolded as follows:

- First, we trained student-leader researchers (including students from the school district and graduate students working together) and set up stations the day before the event. Set up included establishing an 8 x 20 foot (approximately 2.5 x 6 m) graffiti wall, a large art-making area for group collages, and setting up costumes, whiteboards and screening for a photo booth (Figure 9.7).
- Second, students were greeted by members of the CAE team (school leaders, student-leader researchers and external team) who supported data collection throughout the day in classrooms and through arts-informed engagement.
- Once classes began, student-leader researchers visited classrooms for 20-25 minutes with a CAE member to host a group interview (recorded and transcribed verbatim). Students also had postcards where they could anonymously record ideas, doodle or ask questions.

- The day culminated in a two-hour data party (Rogers and Newhouse, 2021[31]) where student-leader researchers and members of the CAE team collectively analysed data to provide perspectives, explanations and implications for action.

The co-produced artefacts emerging from arts-informed activities within MHWB

Engaging in a range of arts-based activities to capture diverse perspectives of students, teachers, principals, school district leaders and community partners – our team set up graffiti walls, art-making areas for group collages and more (Figure 9.7).

Figure 9.7. Images of arts-informed set-up for mental health and well-being activities

Source: Michelle Searle (reproduced with permission).

This range of creative stations encouraged wide and diverse participation from stakeholders on a variety of issues, including how students and teachers conceptualised mental health; what supports they needed; what barriers existed to mental health initiatives; and how relationships between school leaders, teachers, students and community groups contributed positively and/or negatively to student and youth mental health across schools within the district. A second arts-informed approach was employed for stakeholder mapping to show roles and proximity for supporting student MHWB. These maps illustrated diverse understandings of how different roles in the system were working in practice through tangible connections, and also areas where gaps between stakeholders and supports existed. A third arts-informed approach was used during collaborative data analysis sessions between the 33 members of the CAE team (teachers, leaders, student-leader researchers, community organisations and the evaluation team). At the end of each day, we met to collectively analyse data, interpret themes, and identify areas for improvement and action to further integrate evidence-based approaches to MHWB across the school district, schools and partner organisations.[1]

What we learnt: Emerging lessons across CMO configurations within MHWB

Need for system alignment across research initiatives to address data collection fatigue

During this inquiry, we learnt that students were experiencing survey fatigue and wanted to be part of the MHWB conversations to develop strategies and contribute to stigma reduction (*context).*

Arts-based approaches need to provide a continuum of levels of engagement for different stakeholders across research initiatives

A subset of seven stakeholders collaborated with the five-person evaluation team for ongoing decision making while other stakeholders flexed their involvement depending on the evaluation stage and activity *(context).* Co-production took place through shared ongoing communication focused on questioning, instrument development, arts-based activities, data collection and joint analysis *(mechanisms).*

The use of new mechanisms for research can capture diverse experiences and provide a systems view of different perspectives

Through arts-informed approaches, we increased our understanding of students' lived experiences and strengthened relationships by offering multiple pathways for contributions *(outcome).* The participatory process for data analysis across the day's events and activities also used an arts-informed approach and provided insights that would not have been possible from researchers or the evaluation team alone. The rich perspectives provided by diverse stakeholders from their positions in the education ecosystem contributed to a whole-systems view and perspectives that illuminated many potential opportunities to move the district initiatives and goals in relation to MHWB forward.

Co-production and involving teachers and students in research improved uptake and the applicability of findings for their unique contexts

Stakeholders reported that incorporating the arts into their CAE offered the opportunity to gather new information and increase understanding of mental health professionals' role and MHWB more broadly while also contributing to seeing the applicability of research and evaluation in other contexts *(outcome).*

Example 3: Rural Artists-in-School partnerships – Creating an innovative game for research dissemination and knowledge translation

The third example uses arts-informed approaches to research and knowledge translation from a study of how five intermediary organisations operate to support rural artists-in-schools partnerships (professional artists partnering with schools to deliver arts education) in two provinces (Ontario and Quebec) in Canada. Arts-informed approaches were used differently from our first two examples to mobilise findings to study participants, rural arts education stakeholders and broader audiences in dynamic and engaging ways. The researcher conducting this study was also an artist, who brought a unique capacity to analyse data and create artistic renditions of themes emerging across cases. The research and creative arts-informed processes were carried out as follows:

- Twenty-three interviews (recorded and transcribed verbatim) were conducted with organisation leaders, team members and partners (for example, teaching artists, community partners, organisational partners) focused on functions and contributions to rural artists-in-schools partnerships and programmes.
- Key informants were encouraged to articulate a metaphor that, in their view, described the role of their organisation.

- Phase 1 data analysis included typical cross-case analyses.
- Phase 2 data analysis expanded creative possibilities or what might emerge from looking across cases, through the creation of composite vignettes (that is, synthesising the authentic words of participants into a unified narrative) for each case (Coholic et al., 2020[32]).
- Phase 3 employed a further arts-based approach to create a KMb game for research dissemination inspired by themes and vignettes, with illustrations and design to identify relationships across the cases and represent the findings.

The KMb game emerging from arts-informed activities within Rural Artists-in-School partnerships

A dynamic knowledge translation product was created from the research data – a board game that used direct quotes and themes from data and cases – entitled Rural Arts Intermediaries: A Game of Partnership Brokering (Figure 9.8). Players take on roles of each case study and organisation and aim to partner artists with rural schools. Stakeholders get an organisation card (Figure 9.9) that shows the composite vignette associated with the five cases, including five distinct knowledge brokering roles: The Cultivator, The Weaver, The Bridge Builder, The Connector and The Spark Maker. Players must gather different key resources and partners, and use strategies to overcome obstacles. The game presents a new way of engaging stakeholders in discussions about their unique contexts and sharing strategies and obstacles to partnership work in schools to expand the collective knowledge of improved evidence-based approaches to teaching and learning in collaboration with artists and communities.

Figure 9.8. Rural Arts Intermediaries Board Game

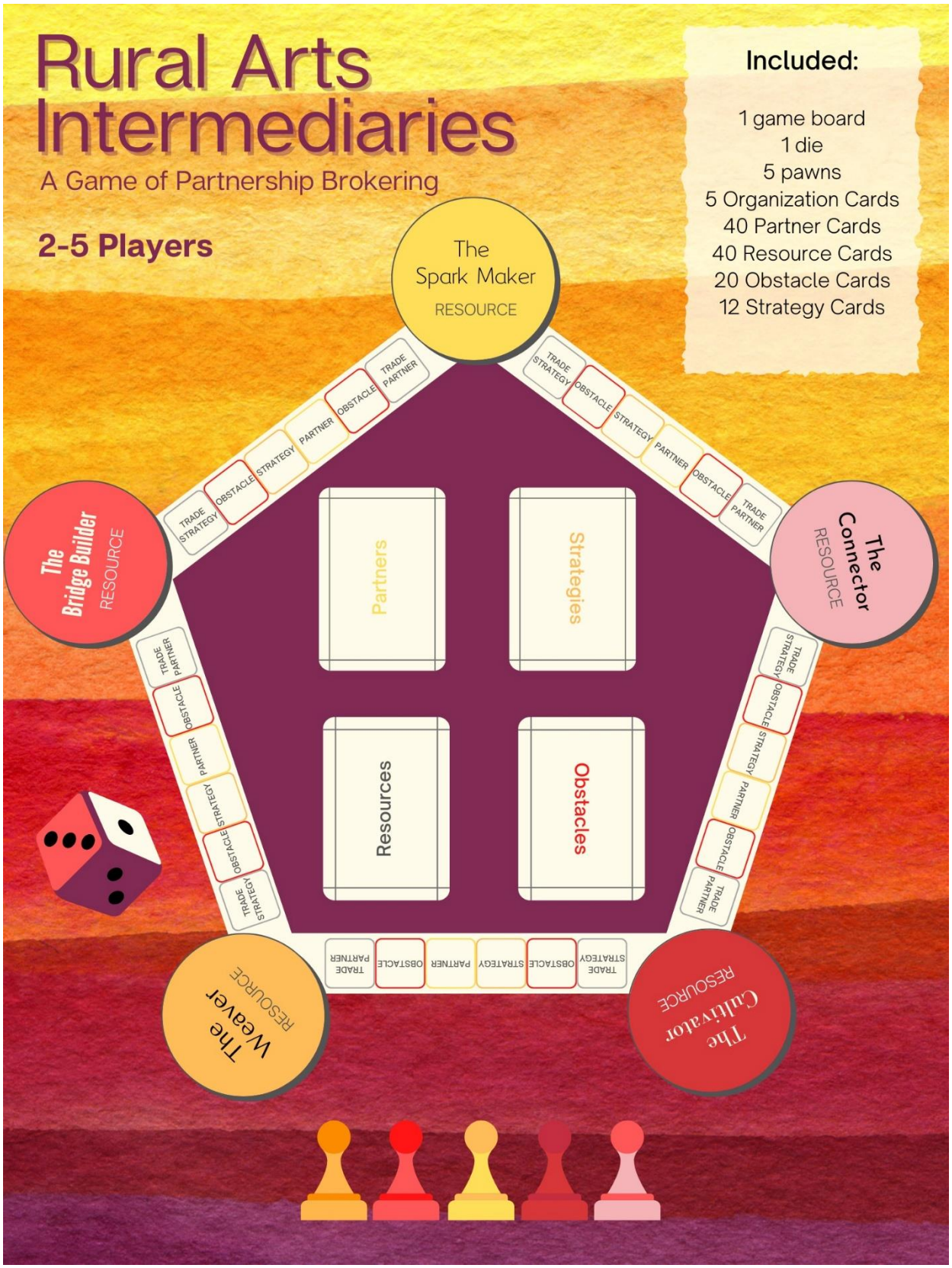
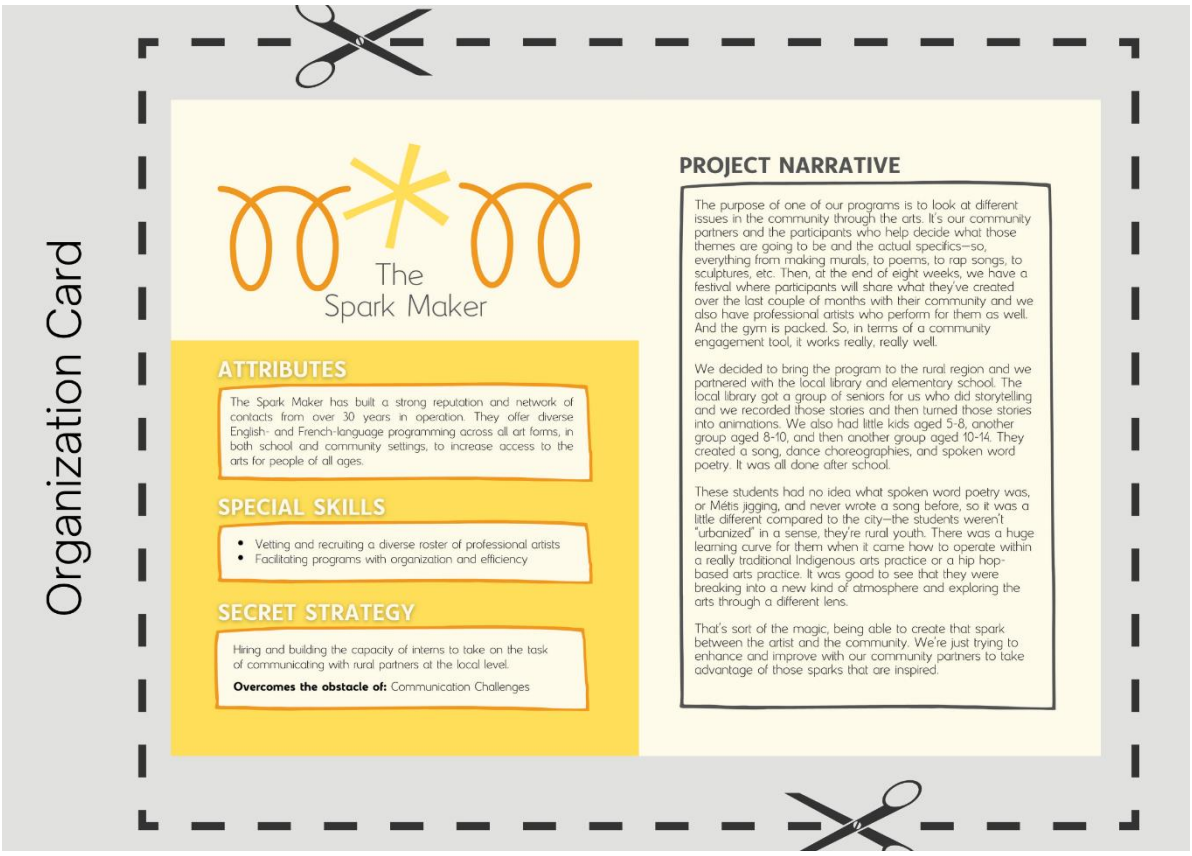


Figure 9.9. Organisation Card for the Rural Arts Intermediaries Board Game



This example presents new ways to think about analysing case study data and translating research findings using KMb games for dynamic use within diverse stakeholder communities.

Emerging lessons across CMO configurations within Rural Artists-in-School partnerships

Games based on research findings offer an interactive mechanism for research dissemination

Making a KMb game from research findings provided a new arts-based approach to research dissemination. Co-production processes included key organisations and informants from stakeholders (community members, teaching artists that work with schools) engaged in connecting artists to schools using evidence-based practices (*context*).

Involving stakeholders in data analysis enriches interpretations of research findings

Consistent communication with participants (community members, teaching artists, rural arts organisations that partner with schools) occurred throughout the research process and assisted in interpreting findings and creating vignettes for each case (*mechanism*). The vignettes consisted of the participants' own words, but the artist-researcher chose which words to use and how to assemble them. Similarly, the participants' words informed the board game design and are infused in the content. For instance, the metaphors articulated during the interviews inspired the different organisational roles players can adopt in the game (i.e. The Cultivator, The Weaver, The Bridge Builder, The Connector, The Spark Maker). Interviews also allowed identifying the obstacles, resources, partners and strategies in the game. The artist-researcher then presented aspects of the game to members of the Supporting Performing Arts in Rural and Remote

Communities network, which generated interest among rural arts stakeholders (community organisations, schools, teaching artists) (*mechanism*).

Arts-based approaches to data analysis and research dissemination can influence how a researcher understands unique contexts

In terms of immediate *outcomes*, the processes involved in making the game had a profound influence on the artist-researcher's own understanding of arts education partnerships and rural arts education. For instance, weaving together participants' words in the vignettes allowed for a more holistic picture of each organisation to emerge.

Games represent tangible ways for stakeholders to work with and discuss emerging research findings and compare them with their unique local contexts

The relationships between partners, resources and obstacles in arts education collaborations became clearer as these dimensions were envisioned as cards with implications for how well the game is played. The game highlighted and summarised particular obstacles involved with rural arts education (e.g. costs, stakeholder buy-in) in an accessible format and provided innovative approaches organisations are using to overcome them (e.g. sourcing local artists, fostering community ownership over projects). This example of KMb games to help stakeholders engage with research findings and data and apply those lessons in their own unique educational organisations expands the vision of what co-production can mean using arts-informed approaches (e.g. participant voices infused into creative research processes and products).

What lessons emerged from CMO analyses across these three examples?

The potential of the CMO model is the ability to apply it to analyse similarities and differences in co-production and stakeholder engagement across diverse RPP contexts. As Table 9.2 illustrates, two CMO configurations emerged across these three examples of the use of arts-informed approaches to co-production in RPPs. The first maps how co-production and the arts enabled new ways of building mutual understanding among partners, leading to more positive attitudes about co-production. At the same time, it appeared that the practical costs of co-production using arts-informed approaches (e.g. the financial costs and time requirements of in-person meetings to create visual displays) could also result in a negative outcome of stakeholders feeling overburdened or having critical perspectives about the processes. The second CMO configuration shows how arts-informed approaches throughout different phases of the co-production process (planning, conducting, disseminating and applying) simultaneously ensured findings were relevant and useful while promoting interest in future collaboration. However, once again, the contextual factors and mechanism could also induce negative outcomes, particularly the potential for co-production activities to appear tokenistic if organisational structures and norms crowded out meaningful engagement.

Table 9.2. CMOs from the cross-case analysis of co-production using the arts

Context			Mechanism	Outcomes
Relationship between researchers and stakeholders	**Ethical issues of collaborative research activities**	**Meaningful stakeholder engagement**	**Capacity building, support and resources**	**On stakeholders involved in research partnerships**
Partners build and maintain relationships based on trust, credibility, respect, dignity and transparency	Partners address ethical issues related to co-production	Partners carefully plan and regularly reflect on their strategic approach to collaboration	Arts-informed inquiry enabled new ways of building a mutual understanding of co-productive goals Examples: *Case 1:* "The things going back and forth are actually birds in the trees and we thought that this was the sharing of ideas back and forth... The notion for us to reflect" *Case 2:* the involvement of student-leader researchers mitigated the limitations of other data collection methods and enabled new expressions *Case 3:* invited feedback on composite vignettes showed a valuing of stakeholder perspectives	+ more positive attitudes about co-production in research/evaluation + promoted a shared understanding of the issues being addressed and how those issues were felt differently by the stakeholders involved – stakeholders may feel overburdened or develop a sense of antipathy towards the process depending on their familiarity with expressing themselves through the arts
Co-production of knowledge	**Capacity building, support and resources**	**Communication between researchers and stakeholders**	**Across planning, conducting and disseminating and applying the research**	**On the research process**
Partners co-produce knowledge and meaningfully engage stakeholders at different phases of the research process	Partners build capacity among all members of the partnership	The partnership fosters regular, open, clear and honest communication between its members	Arts-informed inquiry provided new avenues for stakeholder engagement throughout research and evaluation processes *Case 1:* Engaged stakeholders in planning the developmental evaluation *Case 2:* Engaged stakeholders in collecting, analysing and interpreting the collaborative approaches to evaluation data *Case 3*: Engaged stakeholders in creating knowledge mobilisation products	+ more relevant and useful research and evaluation findings + bolster openness to future co-productive work – stakeholder involvement may ultimately be tokenistic if organisational structures and norms crowd out meaningful engagement – concerns can develop about data ownership and representation

Note: The table presents three contextual factors that were particularly influential in the CMO patterns observed, yet it must be stressed that many contextual factors were at play in each case.

We used arts-informed approaches in an attempt to change conventional perspectives in knowledge production, mediation and use to achieve more substantive contributions, equal partnering and better explore equity issues across research and evaluation processes from the perspectives of stakeholders involved in evidence use initiatives. The lessons are described in detail below.

There must be trust within research-practice partnerships for arts-based approaches to be successful

Regardless of how co-production took shape, we found that positive outcomes hinged on a sense of trust among partners, as well as the skill of the facilitator in alleviating discomfort by engaging in different and arts-informed ways. Our cases highlighted the need for a coherent co-production praxis that can integrate scholarship and practice when addressing issues such as trust in research and evaluation, particularly when using methods with limited consolidated and systematic evidence, such as arts-informed approaches.

Arts-based approaches can be usefully applied at different stages of research to influence learning from evidence

Our cross-case analysis further illustrated how arts-informed approaches can traverse different phases of co-production processes, including planning (Case 1), data collection and interpretation (Case 2), and dissemination (Case 3). As Ball et al. [(2021[14]), p. vii] highlight, researchers often choose an arts-informed approach "to find more effective ways of engaging stakeholders – particularly when a broad and diverse audience needs to be engaged with on complex or sensitive topics or when specific communities who may not find traditional research outputs accessible need to be reached". Indeed, the desire for more effective stakeholder engagement motivated our use of arts-informed approaches, yet our cases demonstrate that such efforts need not be circumscribed to research outputs.

Arts-based approaches value different forms of knowledge being integrated into research processes and collaborations

Our cases illustrate that arts-informed approaches can promote artistic expression throughout co-production processes as well as enable different forms of knowledge and experience (making implicit knowledge explicit) to shape learning processes for school improvement. For instance, while Case 3 calls attention to how interactive dissemination products, such as board games, may help the broader public engage with research findings, Case 2 illustrates how the research process itself can transform through artistic expression by assuaging the limitations of traditional methods. However, in all cases, skilled facilitation was crucial and required building relationships to effectively engage the arts in ways that would not be perceived as tokenistic or haphazard.

Conclusions: The value of using arts-informed approaches within research-practice partnerships

> "Scientific principles and laws do not lie on the surface of nature. They are hidden, and must be wrested from nature by an active and elaborate technique of inquiry." (Dewey, 1920, p. 32[33])

Creativity and imagining new innovative approaches to inquiry and working with diverse educational stakeholders are needed for the field of evidence-informed education to evolve and reach its full transformative potential in schools and with diverse community partners. This chapter explored how the arts might unleash creative expression that provides new ways of seeing and engaging in co-production to achieve system changes in culture and learning with researchers and practitioners in schools. We advance four propositions about the value of using arts-informed approaches to co-production to transform culture and learning for evidence use in public school systems.

Arts-informed approaches can address equity via context specificity and sensitivity

These approaches encourage different modalities to better capture the lived experiences of diverse stakeholders, especially in relation to complex equity issues. RPPs must consider a range of contextual factors, such as the goals researchers aim to achieve (e.g. to influence and inform the direction of the initiative and project), the types of facilities that "must be fit-for-purpose", as well as governance and administrative infrastructure (e.g. clarity of contractual arrangements, the roles of different stakeholders, and data ownership and security) (Ball et al., 2021[14]). Context awareness is critical to success, and as Ball et al. [(2021[14]), p. xi] note:

> *… the design and delivery of arts-informed approaches for public engagement with research need to be done with sensitivity to the cultural, political and socio-demographic context in which a research topic is being explored and stakeholders engaged.*

The diversity of the three examples given in this chapter shows how arts-informed approaches can transcend and are applicable across diverse contexts. Stakeholder composition will influence the strategies needed and feedback/feedforward loops to assess and adjust during the implementation of evidence-based initiatives to encourage reciprocity between researchers, practitioners, policy makers and community members.

Arts-informed approaches promote engagement

Creative tools and processes provide relationally focused experiences for joyful exploration that generates access to different ways of seeing. Engaging in playful processes can strengthen relationships by capturing a broader array of diverse stakeholder experiences. Arts-informed approaches invite responsiveness, sensitivity and vulnerability within research and co-production. The use of the arts deepens understanding by creating broad spaces for dialogue, where people take shared risks during a new collective activity and embodied experience (Leavy, 2009[34]). Embodied experiences are a learning mechanism to unite the head and heart to know ourselves better, make visible these connections and have new experiences that amplify our commitment to inquiry (Stolz, 2015[35]). Our examples showed uses of different arts-informed approaches to promote engagement by deepening and discovering new relationships and offered diverse entry points to encourage reflection and communication as part of co-production within and across groups in RPPs.

Arts-informed approaches enhance and intertwine skills related to the arts, research, evaluation and partnerships

Our examples showed how new skills can be fostered through hands-on training and practice (e.g. training student-leader researchers to collect data), exploration of diverse modes of representation (e.g. drawing mind maps and visualisations, writing composite narratives) and the creation of shareable art/research products (e.g. designing a board game for KMb and research dissemination).

Arts-informed approaches broaden thinking about impact

These approaches positively influence relational and process aspects of co-production among diverse stakeholders in RPPs. However, empirical evidence evaluating the impacts of arts-informed approaches remains limited due to four challenges [cited by Ball et al. (2021[14])]: 1) the aims for collaborative efforts can be difficult to establish; 2) intentionally emergent approaches can elude *a priori* evaluation planning; 3) impacts can take months or years to emerge; and 4) methodological guidance on reliable evaluation methods remains limited. These challenges were present in varying degrees across our examples. Addressing them requires researchers to consider the timing and staging of arts-informed approaches; how the methods and approaches are tailored to the context and stakeholders involved; the range of

potential impact and outcome types on a variety of stakeholders; and the support researchers or evaluators with a background in, or understanding of, arts-informed approaches might offer (Ball et al., 2021[14]). This chapter argues, similarly to Kukkonen and Cooper (2018[25]), that the impacts of arts-informed approaches in co-production within RPPs require expanded notions of impact beyond metrics or indicators, to consider how processes and relational factors underpin co-production and evolve across stakeholders in RPPs. Our work, and the broader field, is in its infancy and only beginning to explore how arts-informed approaches can generate visible, dialogic, evocative and embodied knowledge for culture and learning about evidence use in schools. However, it nonetheless contributes to new understandings of diverse approaches to co-production within RPPs, and how notions of creativity and imagination might inform inquiry processes to link knowledge with action and better represent diverse voices of lived experiences of marginalised communities.

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Note

[1] Ontario has many evidence-based resources for school mental health. For more information, see: https://smho-smso.ca.

10 Organising for research use: Lessons from four deep-use schools

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This chapter presents findings from case studies of four schools in the United States classified as “deep users” of research. Using data from the national administration of the Survey of Evidence in Education, schools were identified based on their reported engagement with research evidence in organisational decision making. Drawing on interviews with school staff, this chapter shares lessons learnt about how schools organise for “deep use” of research. The discussion focuses on what we call the virtuous diamond – the synergistic relationships between culture, leadership, processes and structures – which appears foundational to deep-use schools. Through rich examples and quotes, this chapter provides insight into understanding and building schools’ capacity to use research to drive improvement efforts.

Introduction

Expectations for using research evidence to inform school practice are growing globally, and evidence-use policies often reflect assumptions about how schools use research, including assumptions about individual and organisational capacity to engage in research use (Farley-Ripple, 2012[1]; Honig and Coburn, 2008[2]). Research suggests many aspects of capacity are important. Studies report challenges based on teachers' limited confidence in their evidence-use abilities (Hill and Briggs, 2020[3]; May et al., 2020[4]; Supovitz and Klein, 2003[5]) and difficulty applying research to their context (Finnigan, Daly and Che, 2013[6]). Accordingly, many efforts to strengthen research use focus on improving the relevance and accessibility of educational research. In the United States, this tendency is reflected, for example, in the What Works Clearinghouse and state-created tools that facilitate the selection of interventions based on evidence (see, for example, Wei and Johnson (2020[7])). Accordingly, guidance tends to focus on how to identify and understand high-quality research and other technical aspects of use.

However, the process of using research evidence requires teachers to make sense of evidence in their own context and practice, which means it entails more than technical skills. Practitioners' individual experiences and beliefs impact the way they process evidence (Corcoran, McVay and Riordan, 2003[8]; Jabbar et al., 2014[9]; Neal et al., 2018[10]; Penuel et al., 2018[11]). Both experiential factors and technical skills shape where teachers look for and whether they choose to use information (Birkeland, Murphy-Graham and Weiss, 2005[12]; Honig and Coburn, 2008[2]; Corcoran, Fuhrman and Belcher, 2001[13]). Furthermore, organisational factors that shape use include human and financial resources to support evidence use; time for using evidence; a culture that features trust, collaboration and norms for evidence use; leadership; and structures and processes that facilitate communication of and about evidence (Asen et al., 2013[14]; Brown and Zhang, 2016[15]; Coburn and Talbert, 2006[16]; Coburn et al., 2020[17]; Farley-Ripple, 2020[18]; Penuel et al., 2017[19]; Supovitz and Klein, 2003[5]; Coburn, Toure and Yamashita, 2009[20]). Research also suggests that the individual capacities described above are shaped by the organisation, including the level of investment in skill development and professional learning, structures that enable collective sensemaking, and the nature of work in different parts of the organisation (Coburn, 2001[21]; Coburn and Talbert, 2006[16]; Honig and Coburn, 2008[2]; Kennedy, 1982[22]; Supovitz and Klein, 2003[5]).

In light of this literature, research use is likely to be a local and contextualised practice. This variation in research-use practices – and lack of understanding of what those practices look like – poses a significant challenge for developing guidance and providing assistance to schools. Not surprisingly, there is not as much guidance available to help schools understand and create conditions that support the use of research in their improvement efforts.

This chapter shares lessons learnt from four United States elementary schools that were identified by survey data as "deep users" of education research. Importantly, these schools are not very different than any other US schools on many criteria. They are not especially high-performing nor in affluent communities. They serve diverse student populations. The types of problems they faced and the types of decisions they took in response were not especially unique, including adopting early literacy curriculum, working to ensure students have equitable opportunities to learn and supporting teachers' professional growth. They also represent different communities, governance arrangements and visions for their work. So what distinguishes these schools from others? They see research use as the work of their school, and underlying their practice is what we refer to as a virtuous diamond (Figure 10.1), which consists of organisational processes, structures, culture and leadership. This chapter explains how we went about learning from these four elementary schools then dives into lessons learnt about strengthening organisational capacity for the use of research evidence.

While the cases described are all embedded in the US education policy context, and our interpretations reflect our knowledge of that context, we believe that schools around the world will be able to see

themselves in these findings and that the virtuous diamond and its four pillars are likely easily translatable to many other systems and contexts.

Box 10.1. The Center for Research Use in Education

The University of Delaware's Center for Research Use in Education (CRUE), funded by the Institute for Education Sciences, seeks to expand the study of research use. CRUE produces a more holistic picture of what drives research use, from the production of knowledge by researchers to the sharing or brokering of knowledge between the two communities of research and practice, and the application of research in local decision-making processes. Our research includes the development of survey instruments that capture the production and use of research, a national survey of schools and a national survey of education researchers, and case studies that help deepen our understanding of the survey findings and generate new insights about practice. The centre also engages in outreach and advocacy for improving how research is generated and supporting its use in policy and practice. This chapter presents findings from CRUE case studies of "deep-use" schools and features rich data on schools' use of research.

Source: Center for Research Use in Education (2023[23]), "Education and Human Development", https://crue.cehd.udel.edu.

What are deep-use schools?

Research use is far more than a simple, administrative task. We cannot simply post a check mark after reading research and say "done!" and expect our schools and systems to improve. Rather, using research is a practice, situated in the work of teachers and leaders (Farley-Ripple et al., 2018[24]). The idea of "deep use" describes the complex ways in which research use can be meaningful, systematic and likely to generate improvements in policy and practice. Depth of use then is a way of understanding the extent to which research is used in a superficial or symbolic way or whether research is engaged in "deeper" or more authentic ways that are likely to generate change. Based on literature on research use, we consider depth in terms of:

- the use of different forms of evidence, including, but not limited to, education research
- the extent to which teachers search for evidence to inform their work
- the extent to which use involved interpretation in the context of practice
- the extent of participation in research-use activities
- the stage of decision making at which evidence is relied upon
- the frequency of use in schools' practice (Farley-Ripple et al., 2018[24]).

We can imagine each of these aspects of use as a continuum, from lesser to greater, with schools' research-use practices varying along each. Deep-use schools, then, are those with practices that favour the greater, or deeper, end of the continuum.

Finding and learning about deep-use schools

From 2018 to 2020, CRUE conducted a national survey of more than 4 000 teachers in 134 schools to better understand research use across US schools (Box 10.1). One section of the survey focused on measuring depth of use. Our conception of depth of use acknowledges the complexity and multidimensionality of evidence use as an organisational practice. Attending to this complexity, we focus

on evidence, search, interpretation, participation, the stage of decision making at which evidence is relied upon and frequency as indicators of depth of use. We used those items to create scores for each dimension of depth [see Farley-Ripple et al. (2022[25]) or May et al. (2022[26]) for more about the survey and measures]. Using those scores, we identified schools whose staff reported significantly higher use of evidence and whose scores on at least two other dimensions of depth were significantly higher than those of other schools. It is important to note that no school was consistently at the "greater" end of the continuum on all dimensions. In other words, no school was perfect and there is opportunity for all schools to improve their practices. Nonetheless, these data help identify deep-use schools and are a starting point for learning.

To better understand what deep use looks like in practice, we reached out to these schools; four agreed to participate (Box 10.2). We also note that this study was conducted during the COVID-19 pandemic, during which demands on teachers reached exceptional levels. We were grateful for the time and consideration of those willing and able to participate. We spent (virtual) time with the staff of each school in the 2020-21 school year, speaking first with the school principal and teachers, other school leaders, and, when appropriate, external partners or school district staff, ultimately interviewing between three and five staff members per school. Moving from conversations to lessons learnt took several steps, including coding, memoing and synthesising codes to develop an understanding of patterns and noteworthy practices. Our analysis covered many aspects of research use, and we learnt a great deal about the practice of deep use of research, which we have shared elsewhere (Farley-Ripple et al., 2022[25]). However, here we focus on key takeaways that help us understand how schools can organise for deep use of research.

Box 10.2. Features of the four "deep-use" case study schools

Table 10.1. General characteristics of the four schools

	Grades served	Location	Student population	Teachers
Fairfield Elementary	Kindergarten to Grade 5	Large suburb in Midwestern United States	300 students Diverse with approximately 50% identifying as African American, almost 80% considered low-income	20
Ivy Institute	Pre-Kindergarten to Grade 12	Urban area in Midwestern United States	600 students (in the elementary school) Predominately African American (>95%) and low-income (>60%)	39 (in elementary school)
Clark Elementary	Kindergarten to Grade 6	Small suburb in Pacific Northwest United States	450 students Predominately Caucasian (80%), approximately 25% considered low-income	25
Willow Grove Elementary	Pre-Kindergarten to Grade 5	Rural Southern United States	400 students Predominately Caucasian (60%), a fifth African American and about 10% Hispanic. Half of students are considered low-income	3

Fairfield Elementary

Special features: The principal and assistant principal had been working together for seven years at the time of the interviews. Multiple collaborative structures are in place (school leadership team, teacher-based teams/professional learning communities [PLCs], positive behavioural interventions and supports team). The Director of Teaching and Learning provides hands-on support. The school has several ongoing, multi-year partnerships with external consultants. Literacy and mindset are strong focuses for professional learning. The school struggles with low performance but has an above-average record for growth and for closing gaps among demographic groups. It is located in an area with high

mobility, so improving attendance rates and student culture and climate have been a major focus in recent years.

Research use: Fairfield Elementary was selected based on scores for using external research (0.24) and interpretation (0.47).

Ivy Institute

Special features: The Ivy Institute is a college preparatory public charter school. Research and data use in planning and improvement efforts is considered "the core of the school," and engagement is expected of all school staff. The charter organisation's central office is located within the school building, but the central office staff take a mostly "hands-off" approach and are there to support school staff should they request assistance. A high value is placed on collaboration, and decision making is an inclusive, concerted process. There is a high prevalence of student exposure to trauma according to school staff. Achievement data reveal students are "on track" for achievement across subject areas and sub-groups, although some declines in performance have been seen in recent years.

Research use: This school was selected based on scores for use of external research (0.31), internal research (0.66), and its engagement in search (0.22) and interpretation (0.47).

Clark Elementary

Special features: Clark Elementary is an inquiry-based science, technology, engineering, and mathematics magnet school where teachers have substantial autonomy for curriculum and instructional decisions. It only has one administrator, a principal. There is relatively high staff turnover, but generally experienced staff, with 63% having 6+ years of experience. The school is located near major engineering and military employers, resulting in a fairly well-educated professional community. Student achievement is comparable to the state average, as such, Clark is neither recognised for its performance nor identified for additional support.

Research use: Clark Elementary was selected based on scores for use of external research (0.31) and engagement in search (0.29).

Willow Grove Elementary

Special features: Willow Grove Elementary is a Title I school, meaning that, due to the number of students considered low-income, it receives financial assistance from a federal education programme. It is uniquely located between two major universities, resulting in a high number of staff attending graduate school. District-level staff, including the superintendent, assistant superintendent and various co-ordinators, interact with the school on a regular basis and are instrumental in supporting teachers in evidence-based improvement efforts. Student mobility is high. Student achievement data indicate students slightly outperform other schools in the state and are in the top 10% for growth. The school is described as "beating the odds" – performing better than schools with similar characteristics and student populations.

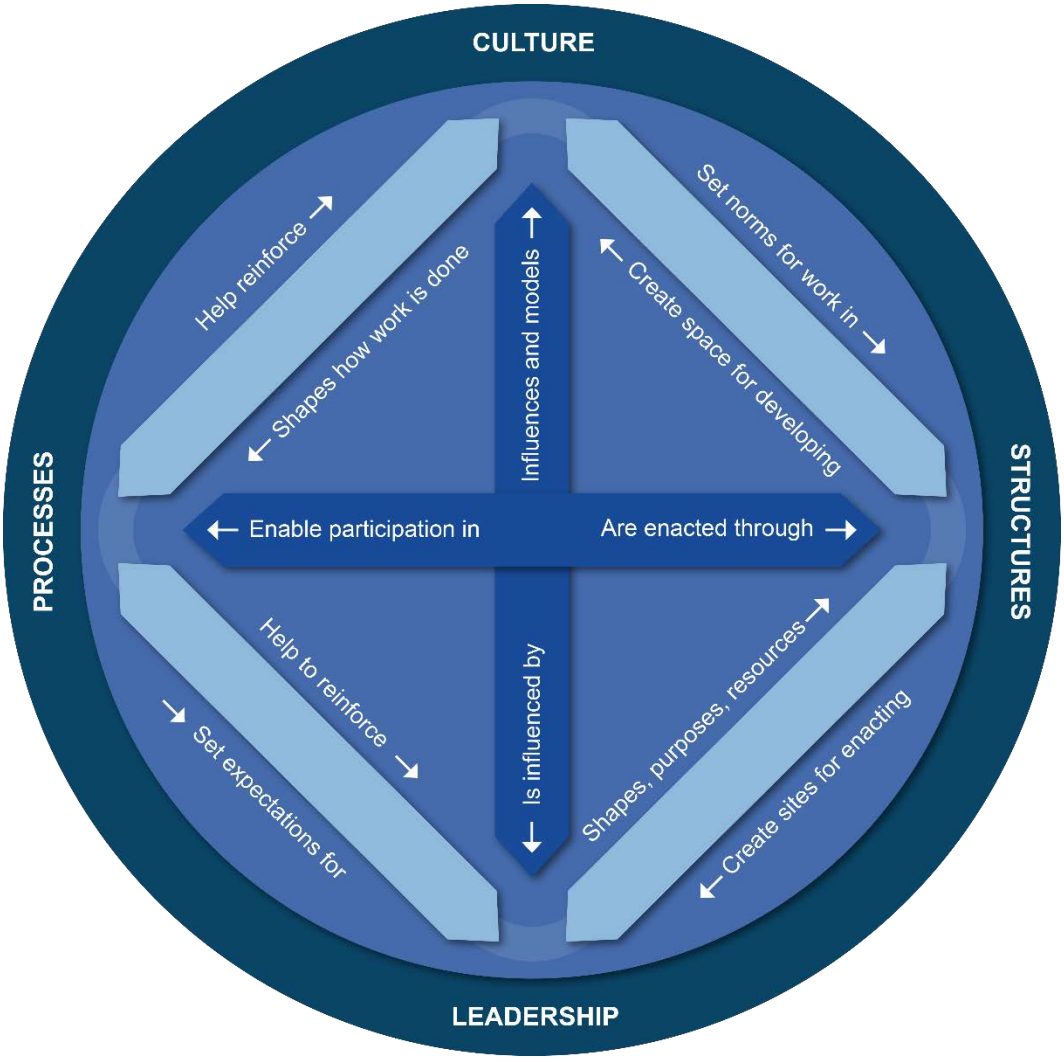
Research use: Willow Grove Elementary was selected based on scores for use of external research (0.33) and internal research (0.63).

Organising for research use in deep-use schools

Even before talking with school staff, we noticed from the survey data that the schools identified as deep users of research are indistinguishable from other schools in some ways. The four schools in this case study did not have additional specialised organisational structures or processes to facilitate research use.

They did not offer any incentives to encourage research use. The types of problems they faced and the types of decisions they took in response were not especially unique. So, what were the mechanisms and conditions that enable them to shine as deep users of research? Our findings show that it is not necessarily what these schools have or do that is unique, but how they do things. This *how* appears to boil down to four key, mutually reinforcing conditions that we describe as a virtuous diamond: organisational processes, structures, culture and leadership (Figure 10.1).

Figure 10.1. The virtuous diamond representing synergistic relationships among leadership, culture, processes and structures



Deep-use schools embed research use into organisational processes

Integrating evidence into school processes and routines makes using it *the* work, not *more* work. In deep-use schools, research use is embedded within common school processes: instructional processes focused on meeting student learning needs, learning processes centred on improving teacher knowledge and skills, decision-making processes addressing school-wide needs and issues, and human resources processes related to staffing the school. These processes are not unique to deep-use schools and are, in fact, present in all schools, yet the expectations of and support for research use within them appears to be a defining feature of how these schools work.

One strategy for embedding research use is by using processes to introduce research into school practice. We saw this most often in instructional and decision-making processes. A coach at the Ivy Institute described visiting a PLC and hearing teachers describe challenges with teaching students to read. As she described her practice, "I'm going to check it out ... I have a lot of teacher books that are going to give me some ideas, do some research on it, and then try to get back to them as quickly as possible." In this case, research was introduced as one of the resources that supported teachers' learning about and implementation of literacy instruction. In Fairfield, a committee introduced research into school decisions about social-emotional learning supports for students returning to in-person learning.

Deep-use schools also use processes to reinforce norms and expectations for research and data use. Across cases, school processes reflected norms and expectations, for example asking for evidence behind decisions or sharing research as part of discussions. Two schools described how hiring and supervision processes were carried out. For example, an Ivy Institute teacher explained:

> *It's kind of included in that process, that interview process, you know, how do you use the data? How do you use the research? What are you going to do with this information? … teachers have to believe in that. And they're not going to hire a teacher ... who isn't into the data or the research, because that's just kind of the core of the school.*

In this situation, teaching candidates completed a data analysis activity during the interview. Another Ivy teacher described expectations for her own learning: "When we build our professional development plans, we do have to include … our action steps, why we're going to take those action steps and then the research behind those action steps."

A final strategy for embedding research is to adopt processes that reflect research-based practices. For example, in Fairfield, district administrators engaged in monthly walkthroughs [e.g. Rouleau and Corner (2020[27])] with school leaders to support research-based literacy instruction. At Clark, a district administrator described a push for instructional coherence [e.g. Newmann et al. (2001[28])] across the district, activities which included refocusing teachers on their core math curriculum and convening teacher representatives in the summer to prioritise standards.

Two prominent examples of research use in school processes are worth noting. First, all four schools described the importance of adopting curricula or programmes with research bases, though it took different forms. In Willow Grove, district leaders were most often responsible for identifying and evaluating evidence behind curriculum to be adopted, and teachers at the school level expected that of their district and trusted that process. At the Ivy Institute, however, school staff were charged with identifying potential research-based programmes. A district administrator in Clark articulated how a strong research basis could justify district-wide expectations for implementation:

> *We've been very loath to do a new adoption because of how the expectations and instruction change and we don't want to, you know, drop three-quarters of a million dollars on textbooks and only have teachers use them half the time or half the teachers using them some of the time. So, we're really trying to find more again research-based approaches that we feel confident that we can have as a district-wide expectation: "Here's why you need to use this, because this is what the research supports will happen if we do."*

Second, all four schools have book study processes for teachers – and also, in some cases, for administrators. Book studies are a clear example of introducing research into school practices, and books themselves are a common way for teachers to engage with research. Further, a high level of engagement was expected. Teachers reported making posters to showcase learning from a given book, preparing lessons to teach each other about the book, working in teams to read and present on a chapter, and hosting online discussion boards that were the basis for in-person discussions. One described it as "just like a college class basically when you're assigned all that fun stuff to do." One variation was article studies. For example, one school purchased a subscription to *Education Leadership* and asked teachers to bring an article to every meeting. Book studies were enacted thoughtfully as part of school improvement and

professional learning initiatives, and often book studies were successful when they mapped closely to the school's new initiatives or programmes. Importantly, book studies were not considered additional work but part of the improvement and learning work itself.

Deep-use schools leverage common structures to ensure participation and protected time for research use

The processes described above are often enacted within larger school structures, which provide important space and support for research use. Importantly, deep-use schools rely on common structures found in most US schools to support research use – not new, additional structures but existing structures that helped organise the day-to-day work of the school. Table 10.2 highlights some of those structures and how they supported not only improvement work, but research-informed improvement work. Furthermore, by leveraging existing and not special structures, schools can support widespread engagement with research, as all staff participated in at least one of these structures and ensure protected time for research use within the regular school schedule. Like processes, structures ensure that research use was part of the work of the school, not in addition to it.

Table 10.2. Common organisational structures of deep-use schools and examples of support provided

Structure	How it is leveraged to support research use	Examples of support
School leadership teams	Building school leadership teams comprised of staff representing different grade levels as well as different roles (e.g. coaches, special teachers). Leadership teams were integral to many school improvement decisions and offered a means for pushing resources and plans out to the rest of the staff. Deep-use schools also leveraged leadership teams to build teacher capacity by exposing them to research use in school decision making and socialising them to research-use expectations.	A Fairfield administrator explained: *A lot of times I know when I bring something from one of my committees to the leadership team I try to bring the research to them that drove our decision. And a lot of times it'll go the opposite way too … the leadership team will see something that's going on and will bring some research to ... us. And then we all talk about it as a collaborative and then they decide how to push it down into the team.*
Standing and *ad hoc* committees	Specific decisions or areas of work were often supported by other committee structures, including standing committees and *ad hoc* ones, created to respond to an emergent need such as adopting a new school-wide behaviour programme.	Across schools, such committees were charged with identifying and recommending research-based programmes, requiring that those on the committees participate in the search for, and evaluation of, relevant research.
Professional learning communities (PLCs)	All four schools engaged teachers in PLCs, most often by grade level or content area, which met regularly for professional learning and instructional improvement work. These activities often featured research or research-based practice. Although PLCs are a very common school structure, some interviewees emphasised the intensity and focus with which they are used.	A Willow Grove administrator shared: *We had a PLC last year on writing. And so we did a lot of ... work on just evaluating the Bookworms writing programme, which is what we were beginning to [implement], but we also looked at developing rubrics and looking at student work and all of that stuff that went along with ... Bookworms and also what we know is best practices.* A Clark teacher recounted the experiences of a colleague who moved to a different school: *She's like, "[Teachers in the other school] think that PLC means that we got together and we talked about, 'We're all teaching this page. Okay let's go back to our class and do our own thing." That's not the point, like the PLC, the planning part is so minuscule to the actual look at the data, see what the students are telling you that they need more of, let that guide your instruction.*

Structure	How it is leveraged to support research use	Examples of support
Coach and interventionist positions	Many schools and districts have coaches or other specialist positions in place to support student and teacher learning. Deep-use schools employed literacy coaches, intervention specialists, Title 1 coaches, and evaluation and assessment co-ordinators. Districts also had curriculum co-ordinators responsible for issues related to teaching and learning. These individuals were regarded as having expert, research-based knowledge and served as credible sources for research. They often directly shared research with teachers.	At Fairfield, an administrator described a speech therapist: *Everything she does is research based because of the scoring on the different screeners she gives the students ... So like she's out in a classroom right now giving help to a teacher on how to intervene and provide intervention to a student before it gets to her. [Staff members] definitely support each other as far as intervention, they support each other as far as just kind of building each other up: "Hey you know, I read this. Maybe this will work in your classroom."*
Faculty meetings	Deep-use schools had monthly or biweekly meetings, often by contract, to handle school business with the entire staff. These meetings became opportunities to move school-wide initiatives forward and reinforce research use. Some schools used them for school-wide professional learning, for book study, to explore data or develop buy-in for improvement work.	An administrator at Clark stressed that meetings focused on research-based improvement efforts: *That staff meetings are not a staff meeting where we talk about lunchroom and stuff like that…. We're going to talk about, "What can we do best for our school?" You know, "How can we improve our school?" Every school can be improved. You know as wonderful as I believe this school is, it can be improved, right?*
Professional development	Districts and schools allocated professional development (PD) time for teacher learning. Many examples of PD at both the district and the school focused on research-based practices. Although specific PD in finding and applying research was not evident in these schools, research evidence was often invoked to support buy-in and implementation of research-based practices.	A teacher from the Ivy Institute characterised how the school used research in choosing PD: *When someone does, you know, choose to go to professional development ... what usually happens is… we picked that professional development because it's shown research ... then the group of people, usually, two or three people sometimes go to a different professional development, then when they come … we have a staff meeting, [and] they present about what they've learnt, and they ... teach the rest of us what they learnt, and they bring back that information to our school.*
District central offices	All four schools viewed their central office or district administrative staff as support for research use; and, in the cases where we interviewed district staff, they viewed themselves as being in the service of supporting schools.	District leaders supported research use by: • mobilising their expertise directly to schools (e.g. coaching) • hosting district-wide PD that engaged research or focused on research-based practices • engaging consultants or speakers to bring research-based ideas into school practices • creating or providing access to an online library of resources • supporting technology platforms that facilitated collecting and sharing information (e.g. Panorama, Share Point, Qualtrics).

Although using common school improvement structures is a powerful way to support widespread use of research, a few research-use specific structures, when present, can be valuable support for engaging in research use, as we found in our four elementary schools. These specialised supports were often facilitated at the district level and often took two forms: research-based products adopted system-wide and relationships to external resources and expertise. Research-based products adopted district-wide became system-wide supports for research use. For example, Fairfield's district offered Panorama, a research-based programme for collecting and analysing school climate data, which plays a significant role in school decision making according to the teachers and administrators. Teachers engaged with these data at staff meetings, in PLCs and as individuals reflecting on their own practice. The district in which Clark Elementary is housed offers an online library.

Access to external resources varied by school. Although all schools mentioned a local university, Clark Elementary appeared to leverage its relationship with the university to strengthen research and data use. This effort included arranging for credit for school-based professional learning, collaboration on innovative teacher preparation programmes, solving problems of practice, and getting assistance with instructional coherence and alignment. Additionally, external speakers were brought in as experts on local initiatives in Fairfield and Clark to discuss mindset and literacy research and standards-based grading, respectively. External consultants also played a significant role in Fairfield. These were former teachers brought in to work with the entire staff as well as individual teachers on at least a monthly basis. The role of these consultants was widely recognised as beneficial for improving literacy instruction in the school. Specifically, the consultants brought research and research-based practice, with teachers appreciating that they "break it down for us" and "make it practical." Fairfield teachers especially noted that the partnership was ongoing, not just a one-day training but regular, consistent time.

Deep-use schools develop an organisational culture of improvement and trust that centres on "doing what's best for kids"

School cultures have a profound effect on teaching and learning and shape the everyday actions of school staff. In deep-use schools, culture is central to their use of research, frequently understood simply as "how we do it." In fact, several teachers expressed surprise that our team was interested in how they work, not recognising their schools as different from others.

First, deep research use requires a growth mindset among adults and a commitment to improvement and change. Teachers believed deeply in the need for continuous instructional improvement at the individual and school level. They were often proactive about improving their practice or expressed that their practice is always evolving. Describing Willow Grove, one administrator stated:

> *In general, the culture here is, we're going to push it. Yeah. Because that's what's best for us in our practice, but also it's what's best for kids to grow them. So, we're going to always be questioning whether we're doing enough, [whether] we're doing what's best.*

One way of thinking about this drive toward instructional improvement is as a "growth mindset," which is reflected in high levels of commitment among staff to the often-challenging work of instructional change. Improvement work is hard and is not a short-term engagement: deep-use schools saw improvement work as the long game.

Consistent with a growth mindset and commitment to continuous improvement, deep use means believing in doing what is best for kids. As the principal of Willow Grove explained:

> *I think that it's just continually wanting to get better … End of the year conferences are going on right now. And so, we're talking to teachers about how their years have been. And they constantly ask, "Well, what can I do? What can I do to get better?" Or "I haven't been able to get this kid, what can I do?" And so … the teachers are really willing to try whatever it is if they think that it will pay off in terms of student achievement. And so, I really just think it kind of goes to just the culture that we've built here, and just wanting to really do what's best for kids.*

"What's best for kids" entails work that promotes student learning, growth and performance, not test-based accountability. In deep-use schools, teachers hold themselves accountable to children, to each other and even to the public. It is also closely aligned with the use of research in deep use schools. A Willow Grove administrator articulated this connection well:

> *And for us, when we're talking to teachers about it ... we kind of use the analogy of like, a medical term of when you go to the doctor, and you're being told you have cancer or something like that. You don't want something that worked 10 years ago, you want like, "What is it now?" Because things are changing. Technology changes. And that's the same thing with education. We want what the research is showing right now is working with kids and what's being effective … so that kind of goes along with … everything that we do here.*

Growth mindsets and commitment to doing what's best for kids can lead to a virtuous cycle: research-driven improvement boosts teacher buy-in and reinforces cultural commitment to using research and becomes a strong incentive for the continued use of research. Fairfield Elementary experienced such a cycle in its experience working with issues of school climate, behaviour and attendance. This commitment was also evidenced in Willow Grove's implementation of the evidence-based curriculum Bookworms, cultivating teacher buy-in with improvements in student learning. A teacher from the Ivy Institute summed it up best: "[Other teachers] see you know, I've done this research. This is what's going to help my kids, this is what I'm going to do and then you see the kids thriving with it."

Most importantly, deep use of research is built on a strong foundation of trust and professionalism, often reflected in the use of "team" or "family" or "we". Trust goes well beyond friendliness and collegiality and has direct implications for research use. In deep-use schools, trust enabled a sense of collective responsibility, the notion that the student body is "all our kids."

Trusting relationships also create a supportive working environment, one where colleagues actively help one another and in which leaders and coaches are there to support, not merely evaluate, their practice, as we saw across deep-use schools. The supportive environments in deep-use schools improved access to and the flow of research-based practice across the school. When teachers trust one another, they often seek new ideas and strategies for particular challenges, and it is acceptable to need help. A teacher in Fairfield illustrated the rich culture of sharing in their school:

> *And it's just really cool how we work together. We scaffold off each other's ideas and in PDs we give, sometimes other teachers will present on topics of what they do really well so then they can share it with the other teachers ... Everyone really loves the research and new ideas, and even veteran teachers are open to learning from others, and just new research that comes out.*

Trust also means transparency or openness, whether to new ideas and feedback or to having difficult conversations. For example, using data in faculty meetings or PLCs can lead to difficult conversations, which can only take place in an environment of trust, and extend to using research. At Clark, teachers engaged with racial inequity and social justice by reading *Other People's Children* by Lisa Delpit. One teacher called this book study a success:

> *Just because of the openness and the community that it created for school. It was a safe zone as we discussed the study. And I think it brought more clarity to some people, and yes, we didn't all agree, I will definitely put that out there. And we didn't agree with it, but we could appreciate each other and understand where people come from. Because maybe I don't agree with you, but I can see why you're thinking the way you are now because you were open with me.*

Lastly, trust manifests in autonomy and flexibility in both school and teacher decision making, which was evident in each of the four schools. Autonomy and flexibility empower schools and teachers to engage and experiment with research in their practice as well as advocate for research-based practices that meet students' needs. For example, in Willow Grove, an administrator explained that they had worked to build teachers' capacity to self-lead PLCs, while in Fairfield, administrators valued staff input in all manners of decisions. Autonomy and flexibility characterised school relationships with the district as well; in all schools, teachers reported being able to provide feedback or pushback on district initiatives. For Clark, in particular, the superintendent acknowledged that the school's strong teachers drove the focus on research and improvement, and a Clark teacher explained that the district offered school autonomy to decide what is best for the school and then "see how it works."

Ultimately, research use reflects the professionalism of school staff. The cultures of these elementary schools held teacher professionalism in high regard. This is expressed among teachers, through collective responsibility and improvement mindsets, but also from administrators at the school and district who not only created opportunities for teacher feedback and leadership, but valued them as well. In such cultures, structures and processes that involved teachers in a meaningful way were able to thrive.

Deep-use leaders model research use, create conditions for use and distribute leadership

Many of the factors that shaped research use in deep-use schools can unequivocally be traced back to leadership. We learnt that leaders contribute in specific ways to the use of research in their schools: through their own use, by designing or shaping organisational supports for research use, and by creating broader conditions that supported research use.

Leaders engage with research to inform their own practices, which also served as a model for others. They "walk the talk" of research use. An administrator at Fairfield, for example, used Panorama data to reflect on her own effectiveness as a communicator, and acted based on what she learnt. Participants interviewed for this case acknowledged this example as well. Other district and school leaders reported ways they had used research to shape their own practices, whether looking for "how to be an effective coach and an effective school leader" or reading books as a district administrative team.

Leaders' own use of research also made them key research "brokers": they frequently found and shared research resources with each other and with staff. In Fairfield, an administrator explained:

> *That can be as simple as I walked down to my [colleague's] office and I sat down with her one morning, and she may be "Hey [name] have you read this article?" And I'll be like, "No, what article?" and we start having a conversation, and then we openly discuss, you know, what are the findings of this, what are our concerns of this, what can we do as a building to kind of help the impacts that are going to happen to these kids?*

As a result of sharing research, leaders were often a "go-to" resource for teachers in these schools.

In addition to their own use, leaders contribute directly to the organisation's use of research, reinforcing an evidence-informed improvement agenda and allocating key resources to evidence use, including time, and financial and human resources.

First, leaders set a vision for evidence-informed improvement. In our four elementary schools, leaders framed issues in terms of evidence, asking what strategies would help them achieve goals, or questioning why the school was engaging – or should engage – in a particular practice. Both questions invoked research and data as supporting evidence. Leaders also align improvement goals and actions with evidence and build buy-in for improvement initiatives by bringing research to the table. An administrator of Willow Grove provided a clear example:

> *With anything, teachers are a little hesitant again, they want to know that it's going to pay off for them … Like what do you have that shows it's going to work? … if the research says that this is what's working, and you can't tell me, you can't show me anything better than that, what's it going to hurt you to try? And so that's really kind of how we got the buy-in …*

Second, leaders in deep-use schools directly support the use of research through staffing and professional learning. Some schools specifically incorporated expectations for research and data use into hiring decisions to ensure staff embraced evidence-use norms. Similarly, leaders select staff to serve on teams, share work in staff meetings or attend professional learning. Leaders of the four schools shaped the content of professional learning, whether bringing in experts or consultants or selecting presenters in professional learning sessions. Leaders in deep-use schools are intentional with staff time. For example, in Fairfield, the principal "tapped" a teacher to provide professional development to her peers after seeing this teacher's skill in implementing an intervention and using data to track progress and adjust instruction. In Willow Grove, the principal encouraged staff in graduate school to share what they were learning.

Finally, leaders in deep-use schools cultivate a broader set of enabling conditions that indirectly contribute to organisational capacity for research use. Leaders of deep-use schools were visible in all aspects of the school's work and participated in a supportive, rather than evaluative, role. Further, leaders were available and open to their staff, which contributes to trust but also to transparency. And leaders actively encouraged collaboration and sharing, between teachers and administrators as well as among teachers. Relatedly,

leaders modelled change and vulnerability and positioned themselves as constantly learning and growing. A helpful example came from Clark, where an administrator identified ways in which they had grown as a leader:

> *When I came here the teachers wanted to definitely be a part of the decision-making process and they always … asked me, "So where's the data for that?" you know? And [I responded] like, "I don't know I just feel that way." "You can just feel that way, that's wonderful you feel that way, but [name], you're the leader. You can't just feel that. You've got to tell us where's it at," and so it changed my perspective, a lot.*

One of the most notable supporting conditions for research use evident in our deep-use schools – and evidenced in many other studies of research use – is distributed leadership. This phrase implies not only that leadership is shared among multiple teachers rather than concentrated in the positional leader(s), but also reflects a dynamic view. As defined by Spillane (2005, p. 145[29]), in "a distributed perspective, leadership practice that results from the interactions among leaders, followers and their situation is critical". Both school and district leaders practised distributed leadership across many domains of school functions, including engaging staff in decision making, soliciting feedback on practices and programmes, engaging teachers in key processes like curriculum adoption, encouraging teacher autonomy and professionalism, and promoting teacher advocacy. Distributed leadership in these instances fostered collective responsibility for improvement and school-wide participation in evidence use. Not surprisingly, in all of the interviews, leaders almost exclusively used "we," rather than "I" or "they," when describing their improvement work, and they publicly recognised and valued teacher contributions (e.g. through invitations to lead professional learning).

The virtuous diamond: Bringing it all together

In deep-use schools, each of these four organisational dimensions is inextricably connected and equally important, creating a virtuous diamond, as shown in Figure 10.1, in which each supports and is supported by the other.

The culture of a school permeates everything within these cases. The case study schools shared important cultural characteristics that impacted their use of research, including a growth mindset, commitment to improvement and change, and trusting professional environments. We found that this culture is strongly influenced by leadership. In these cases, school and district leaders modelled research use in their own practice and shared research with staff, providing an example of research-based improvement for others. Additionally, leaders in case study schools often served as key research brokers themselves, not only sharing how they had used research to improve their practice but also directly sharing research evidence. Further, we heard from leaders that the culture of their school shaped their leadership as well, demonstrating a reciprocal, synergistic relationship.

Organisational leadership and culture directly impact the two other points of the diamond: organisational structures and processes. For example, school leaders influence how structures are used and what resources are available to support. For example, leveraging structures such as leadership teams of staff meeting for evidence use protected time for those practices and ensured widespread engagement, reinforcing a culture of research use. Furthermore, leaders set explicit expectations for the role of research in school processes – such as curriculum adoption or professional learning – which were enacted in the context of school structures. Again, these relationships are reciprocal: processes and structures become spaces where the school culture is enacted and reinforced, contributing to the notion that research use is simply "how we do things." Furthermore, they become opportunities for leaders to both model research use and distribute leadership.

This synergy among the four points of the virtuous diamond facilitated many aspects of research-use practices in the four schools we studied, from participation to interpretation and search, ultimately creating conditions for deep use of research.

How can we build from these lessons?

Deep-use schools provide actionable evidence for how organisational conditions can be used to support research use and research-informed practice. This chapter provided specific strategies and examples of organisational processes, structures, culture and leadership, and teachers can take from these starting points for their journey to becoming deep users of research. But beyond these actions, our lessons offer a few broader takeaways for building capacity for deep use across the system.

Context matters in enacting deep research use

First, although the virtuous diamond supported research use in each school, how those dimensions were enacted or leveraged varied, reflecting local norms, contexts, needs and resources, as we can see in the different examples from each school. School and district leaders may need support and guidance on developing contextually appropriate approaches to evidence-informed improvement and tailored strategies for building local capacity. In developing that guidance, we highlight the importance of the collective capacity of the organisation and that investments that focus only on individual or technical capacity building will be unlikely to achieve the deep use we found in these schools.

Research use should not be more *work, but* the *work*

Further, research use should not be *more* work, but *the* work. One implication of this is that support for research use is not incidental but intentional and strategic. This embedding is true within the school: the structures, processes, culture and leadership, which we call the virtuous diamond, work to reinforce each other. But this finding is also likely true with respect to district support. While we did not focus on the district role, it was a significant, supportive factor, often the source of research-specific structures and expertise. These findings affirmed the importance of taking a systems perspective on research use (Honig and Venkateswaran, 2012[30]) and a need for thoughtful design across levels of the education system.

Develop leaders to become leaders of evidence-use

Third, a high leverage starting point might be to prepare school and district leadership for roles as evidence-use leaders. Although we emphasise collective capacity for research use, leaders have a high degree of influence on the conditions that most seem to support research use – the virtuous diamond. Further, they were often key brokers that facilitated access to research or to resources that supported research use. However, leadership for research use does not figure strongly in existing frameworks for leader preparation or effective leadership, though we have called for it elsewhere (Farley-Ripple, 2020[18]).

Culture, processes, structures and leadership need to be nurtured for evidence-informed improvement

We conclude with a reminder that the elements of the virtuous diamond – culture, processes, structures and leadership – are conditions of *every* school. Nearly all have structures for collaboration. All buildings have leaders. And although our work is not longitudinal, we suspect that this virtuous diamond has evolved and strengthened over time and has not always been present. In fact, multiple principals explained that it has been a journey, and that these schools had not always functioned the way they do presently. We imagine many elementary schools could see themselves across these cases, and that what is happening

in these schools might be possible in theirs. What we take from this finding is that the potential for a virtuous diamond exists in most schools – that capacity for evidence-informed improvement is present yet untapped. It is our hope that in describing these schools and their work, we can begin to imagine ways of tapping that potential across the educational system.

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Part IV Forging connections across the organisational and system levels

11 Organisational and network culture: A lens on leadership

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This chapter presents insights into how policy and practice-oriented organisations create a culture of thoughtful engagement with knowledge and evidence and the role of networks and leadership in this process. The chapter starts with a short overview and framing from different parts of the literature to showcase key perspectives on how leadership and learning around evidence use have been theorised in organisations of policy and practice. This is followed by descriptive and analytical case studies drawn from different countries and different types of organisations. The case studies report research findings on leadership, organisational culture, and learning within and across organisations in Chile, England, Ireland, Norway and Wales.

Introduction

Organisations play a vital role in promoting the use of research, both internally and outside of their "borders". Yet, changing existing norms within an organisation, whether a school, ministry or other organisation, has proven to be a highly challenging task in many countries and education systems. Organisational cultures, assumptions and embedded routines can sometimes prevent learning and experimentation (Levitt and March, 1988[1]). In a practice context, the competing pressures practitioners face, and the tendency to work alone to address problems in school environments, increases the difficulty of changing cultural norms (Ainscow and Sandill, 2010[2]; Huber, Moorman and Pont, 2008[3]). This report focuses on the necessary conditions for and barriers to creating a "culture of research use" within and across organisations of policy and practice. This chapter delves into a specific aspect of creating such a culture: the role of leadership.

Good access to high-quality research is of fundamental importance. But it has been well-established that simply providing access to research is not sufficient to stimulate research use or to change established or routine behaviour around it (Levin, 2010[4]; Nutley, Walter and Davies, 2007[5]). This underscores the importance of considering cultural factors in research use and understanding how individuals and leaders within organisations shape and define the organisational culture(s). There is a strong history of research on school leadership and networks that provides key insights into organisational and system-wide learning and leadership in a practice context. "Strong leadership" within schools has been defined in this literature as demonstrating characteristics such as setting direction, developing people and helping them grow professionally by creating opportunities and providing formal training and feedback, and being willing to redesign the organisation (Huber, Moorman and Pont, 2008[3]; Leithwood and Riehl, 2003[6]). The term "system leaders" (Fullan, 2002[7]) took the concept of leadership beyond the school borders: system leaders are, by definition, concerned with improving other schools, not just their own. In exploring how countries lead educational change, the OECD has also promoted system leadership and described how system leaders develop their schools as professional learning communities, building relationships across and beyond schools with the overall goal of sustained improvement of schools through system-level improvement (Hopkins and Pont, 2008[8]). School and system leadership has consistently emerged as a critical component in the creation and nurturing of strong ties among teachers which, in turn, fosters research use (Brown, Daly and Liou, 2016[9]; Coburn and Talbert, 2006[10]). Leaders have been found to play a key role in fostering – or hindering – the use of research among practitioners. However, enabling the conditions for effective school and system leadership is something that many countries still struggle with.

It has increasingly been recognised that achieving a deep and sustainable impact on the culture of schools necessitates long-term and persistent strategies for capacity building at the school level, as well as building and fostering (new) relationships at the system level (Ainscow and Sandill, 2010[2]). There has been a burgeoning of literature in recent years of research on this kind of system change involving leaders and networks, which reflects how thinking on school leadership has evolved. Notably, this recent work has expanded on the concept of system leadership and systemic transformation through innovation networks (Hargreaves, 2003[11]; Fullan, 2002[7]) and has examined the potential of networked leadership for creating a research-engaged system (Díaz-Gibson et al., 2016[12]; Boylan, 2013[13]; Townsend, 2015[14]). Despite these efforts, the question of how a networked leadership can help to promote thoughtful engagement with research in education systems remains underexamined. In addition, a generally positive view of networks – both as forms of governance and as facilitators of school improvement and innovation at scale – has prevailed in education policy discourse (Grimaldi, 2009[15]; European Commission, 2017[16]). Yet research on networks has questioned and deepened the positive discourse, with critical accounts of networks such as inter-school partnerships and how they operate in practice also emerging (see, for example, Greany and Higham (2018[17])). These critical accounts highlight that we need to know more about conditions for their effectiveness in reinforcing thoughtful research engagement. We can start to do

this by closely examining the challenges that systems and countries are facing in ensuring effective system leadership.

The literature on research-policy relations has also examined leadership in and across education policy organisations, yet this has developed largely in isolation of the evolving scholarship on leadership and research engagement in practice. To some extent, this reflects the gaps between research, policy and practice in education. It is relevant to first explore how an understanding of organisations and organisational change within policy organisations has evolved over time. While conventional perspectives, stemming from management studies, emphasised the coherence and stability of organisations – where organisational change is understood to occur through top-down leadership and hierarchical management – perspectives on organisations have shifted in many domains of social science. These approaches, in contrast to conventional perspectives, have emphasised the diversity and messiness of organisational practices (Cairney, 2016[18]). They have shown that politics often play a key role in shaping knowledge and knowledge use and that there is often an underlying political project that drives both research production and use (Boswell and Smith, 2017[19]). Research may be strategically deployed, for example to support pre-determined policy preferences (Weiss, 1979[20]). Increasingly, researchers have proposed approaching the study of policy organisations and their culture of interaction with science and knowledge that can provide "thick descriptions" of the daily work and practices that occur within organisations, such as ethnography (Obermeister, 2020[21]).

Compared to the literature on school leadership, there has only been cautious optimism concerning leaders in policy organisations and their role in driving thoughtful research engagement. On the one hand, empirical studies on research use in the "sister sector" of health service organisations (Belkhodja et al., 2007[22]; Ouimet et al., 2009[23]) have found that individual civil servants' research experience and education level are positively associated with research use (although this tells us little about the quality of such research use). In addition, "policy entrepreneurs", i.e. individuals with extensive knowledge of the political system that can identify and exploit political opportunities to advance their favoured solutions, can be key actors in creating a culture of research use. One potentially important avenue in furthering a culture of research use is, therefore, to systematically identify such policy entrepreneurs within systems that have both the skills to use evidence and influence policy makers (Cairney, 2016[18]). On the other hand, the ability of policy entrepreneurs to shape or steer policy processes is often thought to be limited: it is more a case of "surfers waiting for the big wave" than individuals who can manipulate processes themselves to create change (Kingdon, 1995, p. 225[24]; Cairney, 2016[18]). OECD/CERI work has also examined networked leadership, specifically in education policy governance, which shows that leadership in this field is also about preparation, framing issues at hand and carefully selecting the appropriate participants in a network (Burns and Köster, 2016[25]). Yet, more research is needed to unpack the characteristics of networked leadership in policy organisations and determine the role of leadership in driving or hindering a culture of research engagement.

Finally, we note that an emphasis on networks is also reflected in novel approaches to theorising research-policy relations that have focused on co-production; and that, in tangent, networks have been taken up strongly in policy development. Many countries and systems have significantly invested in building networks, partnerships and diverse alliances around the production and use of education research. Co-production approaches have emerged from diverse fields such as science and technology studies, geography, psychology, and social theories of learning and typically emphasise the networked and unbounded nature of organisational structures [see, for example, Pallett and Chilvers (2014[26])]. Engeström's (2001[27]) theory of expansive learning posits that existing standing practice must be critically examined in any process of knowledge creation and contests the notion that knowledge processes in organisations are smooth and conflict-free. Accounts such as these emphasise how knowledge and governance influence one another and argue for an understanding of the links between knowledge production and governance that recognises their deep complexity (Burns, Köster and Fuster, 2016[28]). Elsewhere, Boswell and Smith (2017[19]) have argued in favour of a research engagement culture that

focuses more on relationship-building and less on measuring the impact of research on policy. This focus, they argue, incentivises and rewards the processes of knowledge exchange in themselves. At the same time, some have cautioned against purely "networked" visions of organisational processes, criticising these for their inadequate consideration of the role of power and politics in shaping organisational processes and change (Pallett and Chilvers, 2014[26]). Despite the interest in networks among policy makers and in policy research, our knowledge of the effectiveness of networks in creating or reinforcing a thoughtful engagement with research remains limited.

Taking stock of these different perspectives on leadership, networks and organisations, the OECD invited authors to explore the following questions.

- What does strong leadership in a policy or practice organisation look like? How can such leadership help create a culture of research engagement in and across organisations?
- What insights can recent research on networks and leadership give us about high-quality evidence use in practice and/or policy-oriented organisations, and within the wider system (e.g. co-production approaches)? What are the advantages and possible limitations of network research?
- What roles can drive a culture of research use and engagement (e.g. policy entrepreneurs, research champions, boundary spanners) and how can leadership strategically leverage these? How can individuals in these roles be identified, and how can their work be supported and scaled up through effective leadership?

These questions are explored by means of case studies. Through these case studies, experts representing different countries, types of organisations and roles examine leadership, organisational culture and learning within and across organisations in their countries or systems. Mauricio Pino-Yancovic examines school networks in Chile, a country that has extensive experience with educational networks but where top-down supervision of schools seems to prevent these networks from achieving their true potential in establishing a research engagement culture. Toby Greany and Georgina Hudson discuss evidence-informed practice across a network of schools in Cumbria, England. John O'Connor explores research-policy relationships in education in Ireland, noting that Ireland has a sophisticated research and innovation system but a comparatively underdeveloped research-for-policy support system. Jørn Pedersen and Inger Sofie Berge Hurlen analyse how a culture of research involvement was established within the education sector of the municipality of Stavanger in Norway. Finally, Huw Morris' piece adopts a historical lens to analyse how research played a shifting role in the development of education policy in Wales between 1998 and 2022.

The Chilean experience of educational networks to support research engagement

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Chile: A complex educational system for network collaboration

The Chilean educational system was structured under a market model imposed during the dictatorship of Pinochet (1973-90). An essential element of this system is financing based on demand, which depends on student enrolment and attendance. In the years that followed, and with the return of democracy, the structure of this system was not modified, but many policies were implemented to provide more significant resources to public education (Bellei and Munoz, 2023[29]; Bellei and Vanni, 2015[30]).

In this context, structured under a competitive system, policies to strengthen public education have gradually been implemented, and strategies have been developed to enhance collaboration between schools through educational networks. Since the 1990s, rural microcenters (usually based in isolated rural

areas) have enabled the sharing of experiences and the development of professional capacities of teachers (Ávalos, 1999[31]; Moreno, 2007[32]). Also, there is a great diversity of thematic networks, some dating back to the 1980s, focusing on sharing pedagogical experiences on common topics or subjects. Still, there is little evidence of their implementation and effects (MINEDUC, 2017[33]). More recently, the School Improvement Networks (SIN) strategy was developed, led by the Ministry of Education, which ministry supervisors used as a support strategy for schools. SIN comprises principals and curriculum co-ordinators from 3-15 schools. In 2020, 307 rural microcenters, 196 thematic networks and 407 SINs were in operation, grouping approximately 6 960 schools (MINEDUC, 2020[34]).

The Direction of Public Education that leads the local public education services, Servicios Locales de Educación Pública (SLEP), also implements networking strategies among their educational institutions. Collaboration and networking, enshrined in Law No. 21.040 that creates this new administration, are among the critical principles of the new public system, which explicitly states that SLEPs:

> *must carry out collaborative and networking work, based on professional development (…) the generation of learning networks among members of the educational communities, the promotion of joint work and the exchange of good pedagogical and educational management practices (DEP, 2019, p. 6[35]).*

Thus, the SLEPs develop various educational networks; some are made up of principals, others of curriculum co-ordinators, school well-being officers, teachers of different subjects (English, mathematics and language), and early childhood education professionals.

One major challenge of educational networks, especially in competitive contexts, is for them to be valuable instances for participants to mobilise knowledge among educational establishments and thus foster research use and research engagement among peers (Armstrong and Ainscow, 2018[36]; Jones et al., 2023[37]). In Chile, many studies have been conducted to assess participants' appreciation of their functioning and to identify the type of practices carried out collectively (Pino-Yancovic et al., 2019[38]; Ahumada et al., 2018[39]; 2019[40]). In turn, models have been developed to strengthen the functioning of educational networks so that they can have more and greater effects on their schools (Cuadra Charme et al., 2019[41]; Pino-Yancovic et al., 2019[42]; 2021[43]). Nevertheless, as the evidence suggests, just providing tools and good evidence is not sufficient to facilitate and encourage new routines that actually allow the practical application of this knowledge and research use (Nutley, Walter and Davies, 2007[5]). It is required to develop and support professionals' skills to encourage the generation and use of educational research.

The role and challenges of educational networks to foster research engagement

In 2016, the Ministry of Education (MINEDUC) requested a study to identify collaborative practices developed in ten school improvement networks located in different regions of Chile. The key takeaway from this study is the importance of considering the conditions of the territory in which these educational networks operate and their internal functioning to ensure they can be useful in fostering collaborative research (Ahumada. et al., 2020[44]). The authors of this research identified three types of processes that SINs implement:

1. Informative processes: networks characterised by transferring and analysing national educational policy, which has limited research use and focuses much more on sharing regulations and ministry guidance.
2. Collaborative processes: educational networks where successful or innovative practices are shared among different schools, where data and evidence are effectively used, but often focus more on sharing experiences rather than involvement in research processes.
3. Co-operative processes: these networks define common objectives and usually conduct data analysis, generally supported by evidence; in these networks, a sort of collaborative research process is carried out, even when there is not always systematic use of education research.

The 2016 case study was followed by a second study conducted in 2017 using a questionnaire[1] answered by principals and curriculum co-ordinators participating in SIN. This mixed-method research first identified that some networks have no clear purpose besides informative meetings. It also identified that many networks focused on the dissemination and analysis of national policies relevant to schools, while others focused on the development of professional capacities by sharing educational experiences and projects between schools (Box 11.1) (Pino-Yancovic and Ahumada, 2020[45]).

Box 11.1. For each network, a purpose

The 2016 study found that networks can serve quite distinct purposes. In the case of two networks involving rural and urban primary schools, the network's purpose could be described as sharing the existing knowledge of each school to solve pedagogical issues they face in their contexts, and to capitalise on this knowledge. These pedagogical issues are closely related to specific policy guidelines promoted by the Ministry of Education and concern the design and implementation of each school's educational improvement plan.

In some cases, the purpose of the network is limited to disseminating ministry policies to school leaders, such as policies concerning school climate and bullying, citizenship education, inclusion and special education needs; or policies related to the reform of public education in Chile.

Source: Pino-Yancovic et al. (2019, p. 72[46]), *School Improvement Networks and Collaborative Inquiry*, https://doi.org/10.1108/9781787697355.

Regarding the type of activities carried out to mobilise knowledge, networks undertake an identification and replication process of actions performed in the networks into schools, share innovative experiences or practices, and implement joint actions (see example in Box 11.2).

Box 11.2. Knowledge mobilisation in a network

The 2016 study identified several forms of collaborative practice around knowledge mobilisation in networks. For instance, one was sharing successful or innovative practices, where the focus was on educational improvement. This creates an opportunity for network partners to reflect on how to change and innovate their own practices. In this example, there is evidence of the important role played by ministry supervisors. Their support is crucial in creating an environment that incentivises network partners to share their practices and lessons learnt from their experience.

In these cases, networks are concerned with understanding what is being done in each school in order to connect partners with similar interests, needs and expertise. The process of knowledge mobilisation in such a network is typically as follows:

- first, there is an analysis of each school's data
- second, each school is assessed in terms of its progress in achieving its goals (not only in terms of student outcomes but also teachers' practices relating to management and leadership)
- third, a collective analysis of the network goals is undertaken, with the aim that participants share their ideas and experiences to support the development of those collective goals.

Source: Pino-Yancovic et al. (2019, pp. 86-87[46]), *School Improvement Networks and Collaborative Inquiry*, https://doi.org/10.1108/9781787697355.

There is evidence that these networks are highly valued by participants, strengthen the professional capital of their members, and facilitate more collaborative work and sharing of successful experiences in each network. Yet, members declared that they would like more influence in the decision-making processes and to have more opportunities to monitor the results of their networks (Pino-Yancovic and Ahumada, 2020[45]).

This mixed-method research highlights three leadership capacities to be fostered in these networks: leading downwards; lateral or distributed leadership; and leading upwards.

Leading downwards relates to a supervisor's practices to influence the network agenda and its connections with the needs of the school members. Specifically, it relates to how the network leaders are able to prioritise and mobilise meaningful practices that the network members can then implement in their own schools to address local challenges (Brown and Flood, 2019[47]).

Lateral or distributed leadership is linked to network leaders' skills to mobilise the expertise of network members, mobilising knowledge within, between and across partners. It deals with power relationships, aiming to ensure that the interest of the supervisor does not interfere with the capacity building of the network members (Azorín, Harris and Jones, 2019[48]). A tension of the analysis of SIN strategy was that some networks were instrumental for the dissemination of ministry policies and information by supervisors, and thus replicated the hierarchy of the Chilean education system within the network (Pino-Yancovic et al., 2019, p. 116[46]).

Finally, leading upwards relates to how network members are able to influence stakeholders as a direct result of their participation in the network, such as by using the space of the network as leverage for a policy shift. According to the purpose, actions and values of their network, "leading upwards is related to the idea of supporting activist professionals within networks, as a way of generating appropriate conditions to engage in collaboration and partnership in a given context" (Pino-Yancovic et al., 2019, p. 118[46]).

The results of these studies reflect that the use of educational networks as a supervision strategy to discuss national policies and guidelines limits the possibility that these networks become valuable spaces for collaborative research or for research engagement, and instead of promoting system change, could actually restrain some meaningful innovations. Similar results have been identified regarding the formation of educational networks in the SLEPs. The study of some SLEPs has shown that they are still used as a lead organisation, where a single network member co-ordinates key activities and decisions, which still denotes a hierarchical structure in the network, limiting the possibilities of building real interdependent relationships among network partners in the territories (González, Ehren and Montecinos, 2020[49]; Provan and Kenis, 2008[50]).

As González, Ehren and Montecinos (2020[49]) point out, based on Townsend (2015[14]), it seems that both the SIN and the educational networks led by SLEP from 2016 to 2020 reflect a hybrid structure: a hierarchical work culture that mixes with collaborative and horizontal relationships. The Ministry of Education's educational networks and those of the local services have improved the development of their collaborative practices. But where more horizontal practices have been generated (CIAE-IE, 2023[51]; Pino-Yancovic and Herrera, 2022[52]), there is still a need for these networks to carry out more and better collaborative work activities, supporting the use of research and the participants' research engagement to influence schools' educational practices.

A key element to developing good research engagement is to generate genuine curiosity, respect and active listening among those who generate knowledge, which requires the active involvement of the actors to address issues that are relevant to them, where the knowledge generated in educational networks is effectively mobilised to their establishments. For this, nourishing relationships between different communities through associated partnerships among diverse institutions is key. This does not however arise spontaneously, but requires specific methodologies that allow knowledge to be effectively mobilised (OECD, 2022[53]).

The value of collaborative inquiry networks to foster research engagement

In addition to documents and instruments for collaboration, associative projects have been developed in Chile between universities, educational administrators and educational networks to support knowledge mobilisation. These projects can be situated within a relationship and knowledge-to-action framework where researchers, local education administrators and practitioners are connected to creating and using knowledge generated in educational networks and for its implementation in educational practices (Torres, 2022[54]). From this approach, teachers and administrators are positioned as relevant agents for producing knowledge that affects their practices. Researchers assume a facilitator role to focus and facilitate the use of this knowledge in the daily practices of teachers and administrators.

An interesting experience was developed by the Center for Educational Leadership for Networked Improvement. Between 2016 and 2018, the centre implemented the "critical friends" methodology to develop professional learning communities among principals and curriculum co-ordinators participating in SINs (Box 11.3).

Box 11.3. Critical friends methodology for professional learning communities

The term "critical friend" refers to the double function of the network leaders, as "friends" (close and trustworthy) and "critics" (who maintain an open and questioning attitude). In essence, the critical friend helps the different educational actors who work in a network to identify "blind spots", misconceptions and alternative perspectives that perhaps go against their own beliefs (Gurr and Huerta, 2013[55]). This role also supposes that the person who leads the network creates a respectful bond based on horizontality and information, allowing them to collate information about what happens in the network and why (Huerta, 2014[56]).

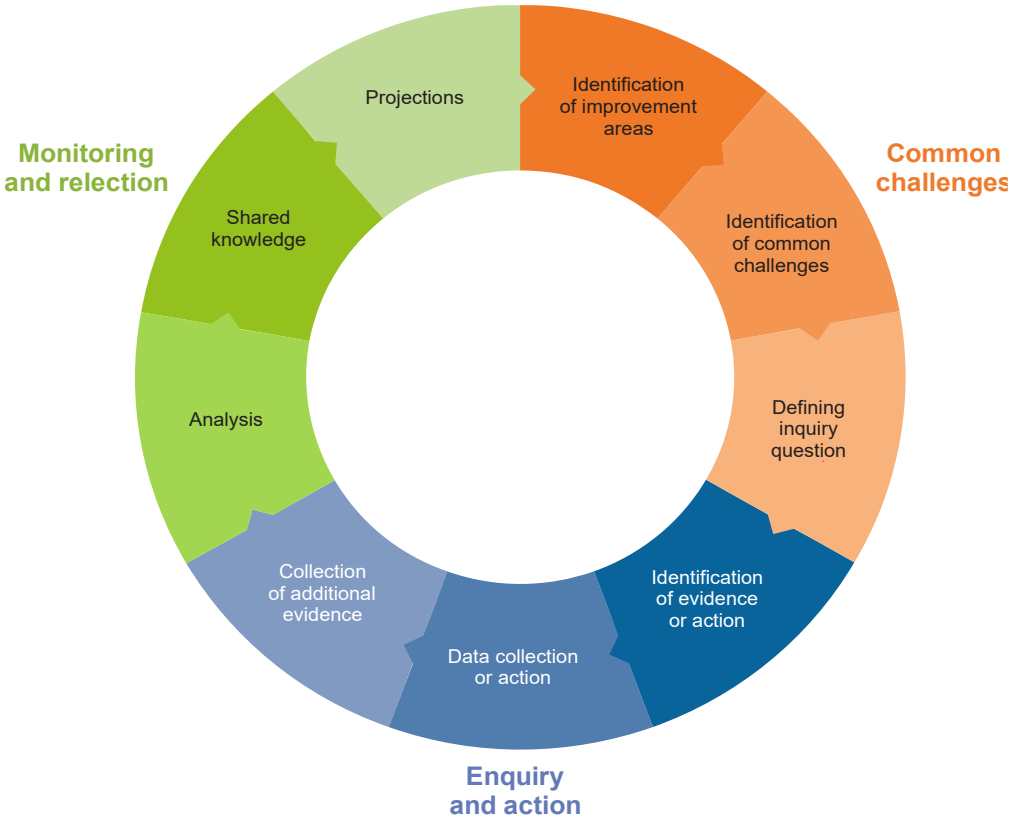
This project had a diagnosis phase, implementation of the "critical friends" methodology, and evaluation involving 10 educational networks composed of 78 schools. Among the results, the authors indicate that they were able to progress from educational networks focused on the transmission and reproduction of information to the generation of reflective and democratic dialogues to redefine educational practices, esteeming the use of pedagogical knowledge and feedback among peers to address the educational problems of the network participants (Mellado Hernández et al., 2020[57]).

Also, since 2018, the Collaborative Inquiry Network methodology has been implemented. This methodology was developed at the University of Chile in connection with the first Leadership Center for Educators and currently with the Associative Center for School Leadership Clíder. The Collaborative Inquiry Network is comprised of three phases (Pino-Yancovic and Ahumada, 2020, p. 393[45]):

1. common challenges;
2. inquiry and action;
3. monitoring and reflection.

Each of these phases has specific underlying stages that allow participants to focus on their collective work (Figure 11.1).

Figure 11.1. The Collaborative Inquiry Network methodology



Source: Adapted from Pino-Yancovic and Ahumada (2020[45]), "Collaborative inquiry networks: The challenge to promote network leadership capacities in Chile", https://doi.org/10.1080/13632434.2020.1716325.

The Collaborative Inquiry Network started its implementation with 26 schools distributed across 5 teams, in 2019 with 21 schools grouped into 7 teams, and in 2020 (during the pandemic) with 27 schools organised into 6 teams. Common challenges included:

- supporting teachers in designing and implementing formative assessment strategies with their students
- identifying and developing students' cognitive abilities
- adapting teaching and learning practices to a virtual modality to appropriately respond to the socio-educational context of students and their families.

The collective actions vary among the research teams, from the development, application and analysis of questionnaires to teachers knowing how to identify and assess cognitive skills during online education. They also range from the design and implementation of workshops on different topics, to the support of student cognitive skills to formative assessment, some of them implemented with the support of researchers and specialists in the field (Pino-Yancovic et al., 2022[58]). In addition, the Collaborative Inquiry Network was implemented in educational establishments in Latin America and the Caribbean in 2021 and 2022 (Bustos, 2023[59]).

In Chile, the researchers found that the methodology improved the inquiry skills of school leaders and their knowledge of the pedagogical practices of their teachers, increasing the achievement expectations of their students. Furthermore, it has developed the professional capital of those who lead this inquiry process, especially their decisional capital (Hargreaves and Fullan, 2012[60]), using relevant knowledge to address local challenges identified by the teams (Pino-Yancovic and Ahumada, 2020[45]). The work in collaborative

inquiry networks facilitates both the mobilisation of knowledge and pedagogical innovation (Pino-Yancovic and Ahumada, 2020[45]), making it a valuable working methodology for mobilising innovative strategies and the research engagement of its members to address complex educational challenges generated during the most difficult moments of the COVID-19 pandemic (Pino-Yancovic et al., 2022[58]). These conclusions are drawn from field notes, headteachers' observations and teachers' collective practices, and participants' surveys. Despite these meaningful findings, more research is needed in regards to student outcomes.

Conclusion

Chile has extensive experience fostering educational networks to strengthen the professional development of its members. One of the tensions of school networks is that they operate in an educational system that has prioritised educational policies that incentive schools to compete instead of collaborate, and also traditional hierarchical supervision of schools. In the last ten years, many educational policies have been introduced to support the quality and equity of public education, and interesting alliances have been generated between educational networks in association with universities and leadership centres.

Current research on school networks in Chile seems to suggest that initiatives guided by a transparent methodology, that are coherent and with strong institutional support can facilitate the research inquiry skills of principals, curriculum co-ordinators and teachers, which are fundamental for their research use and research engagement. In this way, mobilising knowledge ceases to be a linear process created by higher education institutions and filtered "downward" to school centres; instead, it is established as an associative and collaborative practice where the value and interests of teachers are fundamental to promote school improvement.

Despite these innovative projects, it is not possible to affirm that these experiences have been scaled throughout the country. What is perhaps the case is that these collaborative endeavours are engendering a cultural change: one that promotes new educational policies that value collaboration over competition. The goal of promoting a culture of collaboration, shared responsibility and systemic improvement necessitates both recognising and empowering school leaders to influence the practices of others, and to influence the structure of the educational system (Pino-Yancovic et al., 2019, p. 124[46]). Therefore, it is very relevant to continue research in Chile on how educational networks, in association with universities, the educational community and the Ministry of Education, can scale these projects, aiming to expand these innovations to the entire school system.

Strengthening evidence-informed practice across a place-based network of schools in Cumbria, England: Strategic choices and operational dilemmas

Toby Greany and Georgina Hudson, University of Nottingham

This case study draws on an ongoing evaluation of the Western Excellence in Learning and Leadership (WELL) initiative – a GBP 3.9 million three-year programme (2021-24) which aims to sustainably improve educational outcomes for all young people in the west of Cumbria (United Kingdom), particularly disadvantaged youth.[2] A core thrust of WELL's approach is to strengthen the use of evidence by schools and teachers in the 121 primary and secondary schools it supports, in particular through a partnership with the Education Endowment Foundation (EEF) and its Research School Network.[3]

This case study draws on findings from the first year (2021-22) of the independent evaluation of WELL (Greany et al., 2022[61]).[4] It starts by providing a brief description of the context of schools in western Cumbria before outlining how the WELL programme operates. It then introduces vignettes of two secondary schools, showing how leaders in these schools have selected and begun to implement evidence-informed improvement projects. It concludes by discussing some of the strategic choices and

operational dilemmas facing system leaders seeking to develop evidence-informed practice across large networks of schools.

WELL: A place-based improvement programme in a remote and deprived rural context

The WELL programme is funded by the UK Nuclear Decommissioning Authority, reflecting the location of the Sellafield nuclear power station in the area. WELL is part of Cumbria County Council, but has an independent board and a small dedicated team, so it is perceived by local stakeholders as largely independent.

WELL works with all 121 state-funded primary and secondary schools in the districts of Allerdale and Copeland. These districts span most of Cumbria's remote western coast, encompassing a mixture of post-industrial and maritime centres, small market towns, and rural communities. Overall, Allerdale and Copeland sit within the 10% most deprived areas of England (MHCLG, 2019[62]).

Educationally, the region has many strengths, including that around 91% of local schools had been graded by Ofsted – England's school inspectorate – as either good or outstanding by autumn 2022. However, average pupil outcomes on national tests and exams across both primary and secondary schools were mostly below the national average before the pandemic.

Evaluation interviews with schoolteachers and leaders and local "system leaders" (e.g. local authority, Ofsted, Cumbria Research School, etc.) revealed a strong sense of community and connection to west Cumbria, but also highlighted systemic challenges, including high levels of deprivation and inter-generational poverty. This was coupled with a sense of geographical isolation and recognition that schools of different sizes serve very different communities, making collaborative learning and improvement challenging. Furthermore, many small, remote village schools have limited capacity to attend external professional development (PD) events or engage in collaboration. These issues were compounded by parental choice mechanisms, meaning that schools often compete with one another to attract pupils – particularly at the secondary level.

In this context, the WELL project offered a range of support to schools structured in three strands:

1. raising educational standards;
2. closing achievement gaps between more and less advantaged students;
3. improving pupil well-being.

A core focus was on strengthening the extent to which school leaders and teachers drew on evidence to inform their decision making and practice. In practical terms, the support included a number of professional development and training programmes as well as wider initiatives and capacity-building efforts. For example, WELL provided funding for an additional EEF Research School based in the west of Cumbria, thereby increasing local capacity for – and access to – evidence-informed PD.

Just over half of the total WELL budget in 2021-22 was distributed in the form of grants to schools. Schools were allocated between GBP 4 500 and GBP 22 600 in funding depending on school size and the number of disadvantaged children (in receipt of free school meals) in the school. School leaders could decide how this grant funding was spent, in line with the school's priorities, but the money was only released once the school's action plan had been approved by the WELL Project Director. To support this process, leaders from all schools attended training on the EEF's *Putting Evidence to Work: A School's Guide to Implementation* (Sharples, Albers and Fraser, 2018[63]).[5] Following this training, school leaders undertook an internal review to identify a problem they wanted to address and an associated evidence-based intervention, in principle drawn from the EEF's tiered model of teacher development, targeted intervention or wider strategies. All schools were then encouraged to apply the EEF implementation guide approach in how they worked, with further training provided to reinforce this over the course of the year.

Vignettes: Two secondary schools, two improvement projects

As part of the evaluation, we visited six schools that had received WELL grants to understand how these had been used, as well as any emerging evidence of impact. The following vignettes (see Box 11.4 and Box 11.5) describe the WELL-funded projects in two secondary schools.

Box 11.4. Vignette one: Addressing reading gaps using Reciprocal Reader

This large secondary school is based in a rural town, with over 1 000 pupils on roll. There are relatively few disadvantaged pupils or those with additional needs among the pupil population.

The school has used its WELL funding to implement the Reciprocal Reader intervention, developed by the Fisher Family Trust. Funding has also been used to provide wider training for teaching staff in areas such as mental health.

The Reciprocal Reader intervention is targeted at pupils in the first three years of secondary school (7-9) who are assessed as having below-average reading skills. In the Year 7 group, all these students are on the school's special educational needs and disabilities register or have an education, health and care plan, or speak English as a second language, and/or are disadvantaged. According to the school's Assistant Head, who oversees the project, they selected Reciprocal Reader because it "suits our context, we thought we could deliver it well and I liked the look of the evaluation (evidence) so far". The school has an implementation plan and is seeking to "deliver a quality intervention, with real integrity and then measure it to see the impact".

The target students receive two small-group Reciprocal Reader sessions each week over a six-week period. Three members of staff attended training run by the Fisher Family Trust, then cascaded this to the wider staff group of English teachers and teaching assistants who deliver the intervention.

Over the course of the year, the school regularly assessed participating pupils' reading skills. A majority of target students in all three-year groups were making strong progress. The Assistant Head also interviewed a number of teachers across the school later in the year to understand attitudes towards the project as well as barriers to reading comprehension for students. This review indicates a promising impact from the intervention, although a key challenge remains to embed the approach across the wider curriculum and subject departments.

Box 11.5. Vignette two: Pupil premium profiles – Understanding the needs of disadvantaged students

This small secondary school is located in a coastal town, with above-average levels of children on free school meals. The school's headteacher has focused on developing a student-centred ethos with an emphasis on high-quality teaching and extra-curricular enrichment activities.

The school has appointed a pupil premium mentor separately to the WELL project funding to help individual students and meet with them one-to-one. From this, the school has created pupil premium profiles for every student on free school meals and/or with special educational needs and disabilities. The headteacher explains that the idea is "not treating pupil premium as a homogeneous blob, but looking at individual students … it's a bespoke personalised approach to addressing the issues of chronic underperformance of pupil premium students." The interviews and profiles ensure the school gets "to know individual students in terms of context" and can then "improve … our staff knowledge of those individual students" (headteacher).

The school is using the WELL funding to build on the existing profiles, extending these to cover additional year-groups. Class teachers are allocated time to read the profiles and decide on any support that might be required.

In addition, the school has accessed several WELL-provided continuing professional development programmes in areas including mental health support for students and the effective deployment of teaching assistants.

Strategic choices and operational dilemmas in leading evidence-informed practice at scale

WELL is an ambitious place-based initiative that seeks to influence significant change across multiple schools. This is in the context of the COVID-19 pandemic and the many wider challenges that schools in England currently face, including tight budgets, teacher recruitment shortfalls, a fragmented school improvement and support infrastructure, and significant issues relating to pupil well-being and special needs support. The Year 1 impact evaluation compared pupil test outcomes in WELL-supported schools with a matched group of schools elsewhere in England: it did not show evidence of impact, but this is not surprising in the first baseline year. What the evaluation does show is that the vast majority of schools have engaged positively with WELL, with the grants process, in particular, helping to ensure that evidence-informed implementation gains traction.

In terms of evidence-informed practice, the evaluation found that WELL increased access to sources of evidence – albeit from a relatively low base – and that many schools were beginning to make evidence-informed changes as a result. Case study headteachers reported feeling able to think more clearly about evidence and its use, in particular through the use of the EEF implementation guidance. Meanwhile, some school leaders were engaging more critically with evidence, for example, recognising that "robust" scientific evidence does not offer easy solutions and must always be adapted to different contexts by thoughtful professionals.

Clearly, there are risks in appearing to draw direct conclusions from the two vignettes provided here. We have included them mainly to illustrate how different schools have adapted the WELL process to reflect specific contextual priorities. However, they also help to illuminate some of the strategic choices and operational dilemmas facing system leaders seeking to strengthen the use of evidence at scale, which we explore in relation to two questions: what should count as evidence? And where and how can "evidence" add value given all the other priorities that schoolteachers and leaders face?

What should count as evidence?

WELL has had the advantage of being able to piggy-back on the EEF's established work and tools, including the Teaching and Learning Toolkit, the Implementation Guide, and the Research Schools Network. This has offered many advantages, not least by serving to amplify and reinforce an agenda that is already well-established in policy terms and that has been adopted by many schools across England (although with less engagement in west Cumbria at the start of WELL). However, this approach also carries some risks, which the WELL team were aware of as they designed their approach. The EEF is committed to a "what works" agenda, meaning that it funds only experimental and quasi-experimental studies (e.g. randomised controlled trials - RCTs) and directs schools to draw on such studies in its guidance and tools. This gives confidence that schools will adopt "proven" interventions, but also risks downgrading other valid forms of research and evidence (such as school-level assessment data, qualitative evidence derived from teachers or students, and non-experimental research). Furthermore, there are many gaps in the EEF evidence base: for example, the Teaching and Learning Toolkit does not include entries on significant areas of school practice, such as leadership, curriculum development or pupil well-being, often because these areas are not amenable to RCT-type evaluations. Another challenge for "what works" approaches is that they risk reducing appetite for innovation – if schools can only adopt "proven" approaches, why would they try something new?

Where and how can "evidence" add value, given all the other priorities that schoolteachers and leaders face?

It goes without saying that schools are busy places and teachers are busy people: children, families, colleagues, lunch boxes, attendance registers, lesson plans, multi-agency meetings, accountability audits and so on can all be insatiable, making time a precious commodity. In truth, "evidence" has little to say on many of these topics. Even when it does have something to say, it rarely offers simple "how to" advice; instead, infuriatingly, it can often lead to further questions! Faced with these well-known issues, strategic leaders must find ways to make evidence simple but not simplistic, important but not just one more imperative.

Strategic questions at play

What should count as evidence? The first school (Box 11.4) adopted the Reciprocal Reader scheme, having looked at the evidence and found that it had some evidence of impact – although it had only been evaluated in primary schools at the time. So, the school needed to take a risk (i.e. that the approach would work in a secondary school) and find ways to adapt the intervention to its context. As we see, the school's leaders have collected their own evidence to assess progress and impact, but this is not "what works" evidence. Rather, the school captured this evidence through its involvement in action research, which all WELL schools could volunteer to participate in as part of the evaluation. This action research strand encouraged participating schools to capture and reflect on wider forms of evidence, such as pupil assessments, teacher interviews and professional judgement. Meanwhile, the second school (Box 11.5) adopted an approach – pupil premium profiles – that does not have any supporting evidence in the EEF Teaching and Learning Toolkit. Clearly, the school's leaders believe that by getting to know their most deprived students better, they will build stronger relationships and have a greater chance of understanding and addressing their needs; however, evaluating the impact of such an ambitious and multi-faceted intervention presents some challenges.

This takes us to our second question – where and how can "evidence" add value? This is where strategic choices and operational dilemmas must find the sweet spot between purism and pragmatism. A "what works" purist might insist on only allowing the most rigorous evidence to be used, but this would risk turning off sceptical schools and teachers who have more pressing priorities to attend to. Equally, an overly pragmatic approach might not be demanding enough, allowing schools to continue with business as usual.

The sweet spot – or Goldilocks zone in which the "porridge" is just the right temperature – will be somewhere in between, focused on school engagement, working flexibly and responsively within a clear process and set of tools and, above all, encouraging a collective process of learning and reflection on where and how "evidence" can add value and how all schools can get better at getting better.

Conclusion

In conclusion, it seems that evidence-informed learning and improvement at scale require sophisticated forms of system and network leadership. The kinds of leadership required in an era of complex educational networks (Greany and Kamp, 2022[64]) draw on three particular capabilities: 1) leaders work productively with tensions and paradox; 2) leaders facilitate collective sensemaking; 3) leaders adopt an ecological approach.

Leaders work productively with tensions and paradox

Various observers have noted the tensions and paradoxes that lie at the heart of many networks. For example, networks can face demands for measurable "results" within set time frames, despite the reality that relationship-building takes time and that network outcomes can be hard to measure. Embracing paradox involves the recognition that leaders can respond to system complexities without needing to fully resolve conflicts to the point of non-existence. In this case study, the decision to focus on school engagement and avoid an overly purist approach to what counts as evidence is one example of what such leadership involves.

Leaders facilitate collective sensemaking

First propounded by the organisational theorist Karl Weick, sensemaking is key to how network leaders work productively with paradox by acknowledging ambiguities while also learning, collectively, how best to move forward. As Bauer (2019, p. 133[65]) puts it "leading is a social process of learning together". In this case study, this includes the decision to support schools to undertake action research, allowing them to evaluate whether and how the Reciprocal Reading scheme can be successfully adopted in secondary schools, and sharing that learning with other schools locally and more widely.

Leaders adopt an ecological approach

Leading an ecosystem requires "big picture" meta-analytical thinking together with firm ethical foundations. Eco-leadership also recognises the need for innovation, not least through a radical distribution of leadership – thereby becoming "open" (Hallgarten, Hannon and Beresford, 2015[66]). Space has not allowed a detailed exploration of such leadership in this case study, but we see it developing in the wider WELL project, for example through a serious effort to draw together key stakeholders and wider providers of professional development across the region to shape a coherent local learning landscape (Greany et al., 2023[67]).

Based on this case study, we suggest that network leadership of evidence-informed improvement at scale in education deserves greater attention from policy, practice and research. These system "knowledge brokers" must be seen as far more than implementers of proven interventions. We have highlighted some of the nuances involved and the capabilities required.

Research engagement and use in education policy in Ireland – The role of culture and leadership

John O'Connor, Qualifications and Quality Assurance Authority of Ireland

Addressing a seminar on evidence and policy in January 2021, Simon Harris, the Minister responsible for Higher Education, Science and Research in Ireland, remarked that any time politicians don't listen to scientific advice or research in relation to big policy decisions, they make mistakes, and that people want their leaders, their policy makers, to collaborate with, listen to, and support their research and scientific community.[1]

Ireland has an advanced research and innovation system but relatively underdeveloped research for policy support systems (Boyle, 2020[68]; Ruane, 2021[69]; Watt and Perkins, 2020[70]; O'Connor, 2022[71]). Research use in public policy includes the generation of policy-relevant scientific knowledge; the filtering, synthesis and mobilisation of scientific findings; and the procurement and use of scientific evidence, across all stages of the policy-making process. The systematic use of research has the potential to contribute to a more transparent, democratically accountable, effective education policy in Ireland (O'Connor, 2022[72]).

This case study shows that research use in education policy is a complex social process, where central decision making is shaped as much or more by political interests, values and professional identities as it is informed by research. This complexity will be explored using the "two-communities theory", which assumes that effective research use is hampered by officials and researchers operating within distinct institutional settings with their own principles, cultures, incentives, professional values and ways of working (Šucha and Sienkiewicz, 2020[73]). Findings presented in this case study also lend support to the growing body of literature documenting the central role of leadership at system, institutional and professional levels in driving and embedding a culture of research use in policy making (Mair et al., 2019[74]; Head, 2015[75]; European Commission, 2022[76]; Khosrowi and Reiss, 2019[77]; Šucha and Sienkiewicz, 2020[73]; OECD, 2022[53]; Stone, 2012[78]; Cairney, 2016[18]).

The Irish education system has many strengths, but examples of research use in policy and practice are typically fragmented and lack coherence and co-ordination. This case study is informed by first-hand accounts from both senior departmental officials and experienced educational researchers collected as part of a PhD study on evidence-based education policy making in Ireland (O'Connor, 2018[79]).[2] These insider accounts suggest that four dimensions of culture are particularly influential on the prospects for research-informed policy: incentives, values, communication and collaboration. These four dimensions are interdependent and are played out within a wider science for policy ecosystem, so any reform requires systems thinking together with leadership approaches that are collaborative, connected and inclusive.

Incentives

As public servants, government officials are expected to comply with legal requirements and work for the public good. They are accountable to parliamentary oversight, the courts, stakeholders, including the public and their political masters. Research use is seen in these terms:

> *It is public money that we are spending so I think accountability is important. You are making a decision about how you are going to use public funds, so you must present the evidence base for the decisions that we are making (Official C).*

Incentives are often towards the status quo in educational policy (Fullan, 2023[80]), and officials in Ireland recognise the essential conservativism in education policy exemplified by incrementalism and the pursuit of consensus-driven reform:

> *So people say policy making is slow and its ponderous and it takes years, but they never talk about what the alternative is, where a minister can dictate by fiat, and I believe that is a dangerous thing for education systems … anytime we have pushed the accelerator, the system has kicked back (Official E).*

Rewards shape researchers' attitudes towards undertaking policy-oriented studies (Gough, 2021[81]; Shaxson and Boaz, 2021[82]). Academic incentives, in the form of professional recognition and promotion within the academic system, can be seen as incompatible with the interests of policy makers:

> *It is currently not in the interest of academics who want to climb the ladder to become professors to bother spending much time producing documents that are accessible to policy makers (Researcher B, university).*

Such misalignment of incentives is not inevitable and can depend on the institutional culture in which researchers work. In Ireland, educational researchers working in research institutes, such as the Education Research Centre or the Economic and Social Research Institute, report higher levels of research uptake by officials compared to researchers working in universities:

> *It's part of our mission, our research is meant to inform policy, it needs to be accessible. You have to be prepared to do the presentations because you can't expect people to read full reports, dissemination and accessibility are very important. There is no point in doing research if nobody gets to hear about it or just the two people who will read the paper in an academic journal (Researcher F, research institute).*

Incentives and rewards influence researchers' and policy makers' attitudes and behaviours towards research use. The recent publication of a national research and innovation strategy (Impact 2030) will inevitably raise interest in how research assessment might support a culture of research use in public policy. Arguably, any such scheme should recognise the rich diversity of value that educational research can bring to public policy and pay less attention to bibliometrics. There is growing interest in the role of research assessment in promoting research-informed public policy. The main funders of public research in Ireland have signed the San Francisco Declaration on Research Assessment,[3] indicating a move away from traditional academic measures and towards incentivising the impact of research on society, including policy making. Meanwhile, the recent European Council conclusion on research assessment (European Union, 2022[83]), has received political backing from Ireland.

Values

Policy makers are required to engage with the values of many, including the public, politicians, the scientific community and other interested stakeholders (Ruggles, 2004[84]). Democratic accountability is played out in bureaucratic norms requiring officials to use educational research to inform policy rather than to determine policy, as the following comments show:

> *Research will never tell you what to do, that is a complex political decision. If you ever try that in public policy, get up and say that research is telling us to do something, nobody will be compelled to act. Research can only inform; I am a fan of "evidence-informed" and not "evidence-based" policy because there are other factors that must be considered (Official D).*

There is a certain mystique about how values shape the use of research in making education policy, partly because this is an under-researched phenomenon, but perhaps also as a result of what some academics see as a tendency to defend the existing policyscape:

> *I am not sure where that comes from, whether that's a sense of institutional insecurity or a rendering of it where "we have constructed the best of all possible worlds so, therefore, how can it be wrong" (Researcher D, university).*

In conversations, officials in senior leadership roles display high levels of scientific literacy and appreciate the limitations of technocratic and linear forms of research use. They acknowledge the "messiness" of making education policy and the importance of pragmatic brokering between the analytical (research) and normative (value) dimensions of policy making:

> *It is not like you can design a clear-cut initiative to solve a particular problem. Usually that problem is embedded in a much wider social and political context so there are a lot of factors that you have to take into account and you usually can't give very neat answers (Official F).*

Academics are often portrayed as working primarily within their own professional and disciplinary values and not inclined to incorporate public or political values. However, many academics see their research as imbricated within society and are very interested in better policy and better outcomes for citizens. Mutual understanding of how values influence researchers and policy makers can lead to more realistic expectations about research use in education policy:

> *I don't think that we pay enough attention to the complexities of policy making, all of the other things that policy makers have to take into account beyond the evidence. In my experience, research rarely makes, or even has the potential to make, policy making easier. It rarely supplies a straightforward answer to a policy question (Researcher G, research institute).*

Communication

Deficit models of research use assume that simply increasing the volume of educational studies will automatically increase the level of research engagement and use. This ignores the centrality of accessibility. The costs of translating educational research for policy makers can hinder research use (Grimshaw, Eccles and Lavis, 2012[85]; Thomas and Bussières, 2021[86]). Many educational researchers see their core job as gathering data, analysing data and reporting data, and that translating research findings for policy makers is a luxury they can't afford. That said, many researchers are alert to the limitations of this position:

> *The language of academia and the language of politics have moved much further apart. There are often findings that would be useful and interesting to policy makers, but they are not in a language that is accessible to them. The way that we as academics write for publication is not in a form that is useful for policy makers. There is a strong case for academics to engage more with occasional papers, which aren't necessarily published in a peer reviewed journal but are published on a website in accessible language and are available to policy makers (Researcher B, university).*

Scientific evidence rarely speaks for itself, and so knowledge-brokering mechanisms, the connective tissue in the research-policy ecosystem, play an important role in synthesising and translating scientific knowledge in the context of complex policy problems. This kind of organised knowledge synthesis has not been a feature of the Irish education system (European Commission, 2017[87]). Some officials do see the school inspectorate system as fulfilling an important intermediary-type role, undertaking research and filtering research from school evaluations and bringing it to the attention of policy makers:

> *Our school inspectors are always pursuing further studies and they are our links to other institutions, they have access to researchers, academics, experts in particular areas (Official B).*

No doubt the inspectorate is a useful source of advice, but it is not designed to conduct systematic or meta-reviews of existing educational studies to advise policy makers about what is known and not known about policy problems. The recently reconstituted Education Research Centre or the emerging institutes of education in Irish universities may yet take on a more central role in making sense of science for policy makers in education.

A shared culture of research use in education policy is more likely when key actors are fluent in the language and discourses of both policy and research. Such bilingualism requires experience and practice, but it is worth it:

> *There is an issue about how both sides communicate with each other, I would have to admit that as policy makers, I'm not sure that we are always very good at articulating what our research interests are or what we want out of research and how we want it given to us or fed back to us (Official A).*

One mechanism to promote mutual understanding and a shared language between policy makers and researchers is the use of structured mobility programmes, where policy makers and researchers are seconded into each other's communities. In Ireland, there is scope for more strategic use of such schemes to support the professional formation of both educational researchers and policy makers:

> *We are not always speaking the same language or linking in as well as we might with the concerns of policy makers. Where you get that dialogue building up from an understanding of where people are coming from and to mutually shape an agenda, that can work very well (Researcher F, research institute).*

Collaboration

Researchers report that the single most important variable explaining the use of educational research in policy making is the frequency of collaboration between researchers and policy makers (O'Connor, 2022[72]):

> *We have a kind of ongoing relationship. I get to speak to people in the department an awful lot and I would have quite a good relationship with members of the Inspectorate for example, because I've been around for quite a long time we collaborate on things (Researcher H, research institute).*

In Ireland, some educational researchers actively seek out opportunities to interact and engage with policy makers:

> *From a researcher's perspective it's about making sure that your results are being disseminated as widely as possible and that we are creating these opportunities where we are disseminating the results and offering a platform where there can be discussion among policy makers and other research users (Researcher I, research institute).*

Proximity can be a major influence on research use in Ireland. If a researcher is close to somebody in a senior policy position, particularly a politician, they can be asked to comment or advise on a policy:

> *Personalism is a recognised feature of Irish political culture. It comes down to a particular politician knowing a particular academic, knowing them and respecting them and being willing to listen to what they say about their research (Researcher B, university).*

Privileging certain research and granting selected researchers access to policy makers may be a practical way for busy officials to filter the huge volume of educational studies, but it risks marginalising other potentially useful sources of research. At the same time, some researchers are wary of getting too close to policy makers, concerned that their independence may be compromised:

> *You need to be very clear on what your role is as a researcher, that you are independent, that you are critical, so that findings have credibility and trustworthiness (Researcher D, university).*

Effective collaboration between researchers and policy makers is more likely when leaders seek to co-create support systems and mechanisms. Challenges are resolvable and worthwhile and can emerge from common sense:

> *If you have more interaction of people who are part of the same fold, it makes it easier to make some headway and to have those conversations about research and policy (Official C).*

Conclusion

Embedding a culture of research use in education policy is complex and takes time. Evidence from Ireland confirms that there is much truth in the archetypal portrayal of policy makers and educational researchers, and the inevitable tension between both cultures. This case study suggests that paying attention to values, incentives, communication and collaboration can help establish and embed a shared culture of research engagement and use. Important initiatives by government and the academy to better connect research and policy are underway and there is optimism that this dynamism will inspire and strengthen reciprocal initiatives in education planning and decision making.

In March 2023, the Irish government indicated its intention to appoint a government science advisor and to establish a National Science Advice Forum "to provide cross-sectoral and multi-disciplinary science advice to the government on complex policy issues".[4] This significant announcement builds upon several related developments. A new government department responsible for research, innovation, science and higher education policy in Ireland was established in 2020 and recently published a national research and innovation strategy, Impact 2030,[5] highlighting the need to "maximise the impact of research on public policy making and implementation". A new Evidence for Policy Unit in the department has been tasked with forging better links between public policy makers and the public research system. As part of the Civil Service Renewal 2030 Strategy[6] an independent review of the public policy development process in Ireland highlighted areas of opportunity and action to strengthen the policy development system (OECD, 2023[88]). These featured proposals for making better use of research. In parallel to these reforms, the Royal Irish Academy has led strategic engagement by the scientific community in making better use of public science.[7]

In education, there is renewed momentum to build new networks and communities, connecting those with a shared interest in research use for better policies and better outcomes for people. The complex nature of research use in education policy means that top-down, centralised and hierarchical tendencies could easily dampen enthusiasm (Ansell and Geyer, 2017[89]). As indicated in the introduction to this chapter, networked leadership approaches based on partnership and collaboration seem more suited to build and strengthen trust and create a shared cultural mindset, both of which are conducive conditions for the systematic and inclusive use of research in education policy in Ireland. Of course, as advocates for better research-policy engagement, we should all lead by example and place the best available research at the centre of our shared ambition to strengthen the use of research in education.

Creating a culture of research engagement in the education sector of Stavanger municipality, Norway

Jørn Pedersen and Inger Sofie Berge Hurlen, Stavanger Municipality, Norway

This case study examines Stavanger Municipality's efforts to create a culture of research engagement in its school sector. It first provides an overview of the legal framework for primary education in Norway and the Norwegian curriculum. It then presents partnerships that foster research use in Stavanger and discusses the role of leadership in these partnerships. The last section explores the notion that for schools to become learning organisations, professional collaboration is dependent on good leadership and management.

The Norwegian Education Act and the national curriculum

The Norwegian school sector and Stavanger Municipality are regulated by national laws and regulations in education from kindergarten through university. The Education Act gives all children between the ages

of 6 and 18 a right to education, and the content of the education is regulated through a core curriculum with associated subject plans.

School development requires school staff to take an active part in the professional learning environment. There should be room to ask questions, use research and look for answers on how school practice can contribute to pupils' learning and development. Through the Education Act, all municipalities and county municipalities have an obligation to work continuously on quality development.

> The municipality […] must ensure that the schools always assess the extent to which the organisation, arrangement and implementation of the training contribute to achieving the goals set out in the national curriculum. The pupils must be involved in this assessment. *(Ministry of Education and Research, Norway, 2020[90]; Ministry of Education and Research, Norway, 2017[91]) § 13-3e)*

The national core curriculum lays down guidelines for Norwegian schools to establish a professional environment where teachers, leaders and other staff members reflect on common values, assess and develop their practice, and where school development is research-informed.

> *All school staff must take an active part in the professional learning environment to develop the school. This means that everyone in the environment must reflect on the value choices and development needs, and use research, experience-based knowledge and ethical assessments as the grounds on which to base targeted measures. Well-developed structures for collaboration, support and guidance between colleagues and across schools promote a sharing and learning culture (Ministry of Education and Research, Norway, 2017, p. 20[91])*

Stavanger Municipality

Stavanger Municipality has approximately 145 000 inhabitants and 50 public primary schools. It is in a region that, over time, has been concerned with development and research, building up to become a high-tech industrial region with a relatively high level of education and particularly good competence in vocational subjects. The region is one of the most international cities in Norway, with about 190 nationalities. One in four inhabitants in Stavanger have an international background and as English is compulsory from the age of six, Norwegians are quite fluent in English.

As a municipality, Stavanger has, over time, been concerned with a research-based approach to quality development in schools. In 2022, it established a Research Department, which will contribute to stronger research-based public service development. The strategy for research in Stavanger is to develop and use knowledge to solve the social challenges the municipality faces. The research strategy outlines four goals and defines strategic measures to achieve them. Stavanger municipality:

- has good research expertise and capacity in its own organisation
- uses research as a basis for decisions, planning and development of municipal services
- is an attractive and professional research and development partner
- is a regional engine for investment in research.

Schools in Norway are state-funded and are not fully exposed to competition. This low level of competition means they do not run the risk of losing students or income if some schools become better or just as good as others.

Norwegian society is also characterised by a large degree of trust in the authorities and each other. This form of funding of schools and the degree of trust probably contribute to the culture of sharing knowledge with each other across schools.

Stavanger Municipality's partnership with the local university

Together with its neighbouring municipalities and the local university, Stavanger Municipality has established an inter-organisational system for learning through partnership. The partnership in the district

is in its fifth year and has developed collaborative structures to increase collective learning capacity (Paulsen, 2021[92]; Silins, Mulford and Zarins, 2002[93]). The partnership contributes to developing local competence in the schools in the region and raising both the quality development and research orientation of the schools.

As part of the partnership's initiatives, arenas have been established for leaders and schools to learn from one another and actively use research literature. One such initiative is the inter-municipal leadership network, where leadership groups from different schools in other municipalities meet regularly to disseminate research and share experiences. In between these meetings, the partners collaborate on joint assignments for learning, which the individual schools work on, preferably with partners. For instance, research on student engagement (Shirley and Hargreaves, 2021[94]) was disseminated among the network and translated into the schools' own context through collaborative efforts between meetings.

In addition, some schools establish partnerships with other schools and university partners to develop organisational learning capacity through collaborative efforts within the school. These partnerships are used to support the implementation of the core curriculum and curricula and are considered arenas for ensuring a common understanding and direction of the work, both in the inter-municipal leadership network and in individual schools.

Figure 11.2 presents a model that illustrates what we should strive for and what characterises partnerships that have built organisational learning capacity (Silins, Mulford and Zarins, 2002[93]; Paulsen, 2021[92]; Hurlen and Bræin, 2022[95]).

Figure 11.2. Characteristics of partnerships that have organisational learning capacity

Source: Adapted from Silins et al. (2002[93]), "Organizational learning and school change", https://doi.org/10.1177/0013161X02239641; Paulsen (2021[92]), *Schools Learning Collectively: Learning Together Through Trust-based Leadership*; Hurlen and Bræin (2022[95]), *Partnership – A Space for Knowledge Development?* https://www.duo.uio.no/handle/10852/99778.

For a partnership to build organisational learning capacity, it must establish a trust-based and co-operation oriented climate with measures that support teachers' professional development, where a culture has been created to take the initiative and there is a shared understanding of the mission that is followed up on (Silins, Mulford and Zarins, 2002[93]). Through the partnerships, schools can build learning capacity, and through their close contact with the university, use increasingly research-based approaches in their development. A combination of research and shared experiences serve to enhance the comprehension of the directives provided in the national curricula and facilitate the implementation of new practices in schools.

An inter-organisational infrastructure creates opportunities for learning between the partners in municipalities, schools and the university. The infrastructure and co-operation in the partnership contribute to the school owner being able to support the schools in their development work, and even out differences between municipalities of different sizes (Forfang and Paulsen, 2019[96]).

The partner from the university also takes learning from practice back to their own teacher training by demonstrating various methods observed in the field of practice or sharing insights on the concerns, struggles and successes of teachers in the field. The work is financed by national funds obtained through joint applications from the university and municipalities to state authorities. The distribution of funds relies on the collaboration between the university and the schools, ensuring mutual benefits, and is determined by the guidelines governing local competency development.

It takes time to establish well-functioning partnerships, and relationships must be built and nurtured over time. The municipality tries to ensure sustainable funding (through the applications mentioned above) to maintain relationships. Productive interactions in partnerships depend on equality between the partners, which we consciously aim to ensure. Equality is a central concept important for understanding the phenomenon of partnership. Within the Municipality's partnerships, participants are cognisant of each other's knowledge bases and complementary roles and recognise each other as equally worthy contributors. Furthermore, establishing equality requires clarified expectations and definition of roles and firmly established trust (Coburn, Penuel and Geil, 2013[97]; Lillejord and Børte, 2016[98]; Hurlen and Bræin, 2022[95]).

Partnerships are managed at both the owner and school level to ensure progress and development. Ensuring equal participation in development work is crucial for establishing symmetry, and managers must be particularly attentive to this aspect.

In our partnerships, we develop (or encourage) agreements and norms together to support co-operation and create predictability. The relationships between the partners seems to create the greatest mutual obligation. The size of the partnership can be significant, and it may be challenging to strike a balance between ensuring research relevance for all participants and establishing a knowledge-developing partnership with every teacher involved. Establishing good relationships through close dialogue and trust can be difficult to achieve if the distance becomes too great (Hurlen and Bræin, 2022[95]).

Professional environments for learning depend on leadership

It has been a priority for Stavanger Municipality to establish a research-based culture for school development. Over the past ten years, strategic decisions have been based on research and experience.

An important enabler of creating a research-use culture is that schools in Stavanger Municipality all have one to three hours per week for professional development, where all teachers gather for professional learning. The municipality, school and elected representatives of the teachers have made agreements on the allocated time to be used, which is managed by the headmaster.

For schools to become learning organisations, professional collaboration is dependent on good leadership. Professional learning communities in schools also require good management, which facilitates and leads

teachers' learning and development (Kools and Stoll, 2016[99]; Robinson, 2016[100]). The role of leadership in nurturing professional collaboration is explicit in the Norwegian core curriculum:

> *Professional collaboration in school requires good leadership. Good school leadership in turn requires legitimacy in professional leadership and good understanding of educational and other challenges teachers and other members of staff are facing. Good leadership gives priority to developing collaboration and relationships to build trust in the organisation. The school leaders are in charge of and facilitate the learning and development of pupils and teachers. The school leaders must lead the educational and professional collaboration between the teachers and help to develop a stable and positive environment where everyone is focused on performing at his or her best. It is the duty of the school leaders to ensure that all staff can make use of their strong sides, experience mastering and develop in their profession. Good school development requires that there is room to ask questions and look for answers, and needs a professional environment interested in how the school's practice contributes to the pupils' learning and development. (Ministry of Education and Research, Norway, 2017, p. 20[91])*

Stavanger Municipality has established learning arenas for the management groups in the schools, which include learning networks, principals' meetings and school leaders' gatherings. In recent years these have evolved from more administrative meetings to learning meetings where participants gather to read research-based books and articles. The emphasis is on modelling collaborative cultures, creating and sharing knowledge, and investigating approaches to learning to establish a professional learning community (Stoll et al., 2005, p. 206[101]). The various arenas are intended to contribute to both learning and training (Fixsen et al., 2005[102]). Preparing for learning meetings requires investing a significant amount of time and effort from system leaders, like the municipality. Meetings should be relevant and build on each other to strengthen the learning points through dialogue with managers. School leaders also need to dedicate time for preparations and interim work.

Digital tools have made administration more efficient, freeing up time for more learning meetings. The shift from administrative to learning meetings is motivating for school leaders, who increasingly demand more of these opportunities. In the past year, we have focused on developing effective leadership groups (Bang and Midelfart, 2022[103]) that balance administration and development in an efficient manner.

There are many groups that must create results together and we depend on effective leadership groups (Bang and Midelfart, 2022[103]) to contribute to quality in the school and build collective capacity, but where sharing and learning is an intrinsic value for the leaders involved. Principals have been tasked with facilitating learning within and across schools. The leaders again bring their experiences when municipal managers facilitate learning between leaders, in networks and meetings. Learning must be high on the agenda. In recent years we have focused more on reflecting our experiences in research.

We, therefore, open up our schools so that universities and others can carry out research, and we have gradually become better at ensuring that the research that is carried out is also useful for the municipality and the schools. Stavanger Municipality was recently awarded a public PhD[8] through its Research Department's partnership with the University of Stavanger. One of our teachers will conduct research on collective teacher efficacy (Donohoo, Hattie and Eells, 2018[104]). Additionally, Stavanger Municipality is collaborating with the National Knowledge Center for Education at the University of Stavanger on a project to enhance the use of research in schools. The municipality intends to establish a public PhD in this area as well. Research must tackle the pertinent issues in schools concerning students and have methodological implications for teachers to help with school-based improvement.

Another enabler of research-focused learning is ensuring that teachers are trained to engage with research. The teacher education system in Norway was reformed in 2017, resulting in newly qualified teachers with Master's degrees, thus better equipped to use research. As a result, they have the potential to act as catalysts for change and foster a more analytical approach to teaching, increasing motivation among new graduates to continue in the profession. The establishment of a research-oriented culture in schools necessitates proactive principals to establish a professional learning community for all teachers.

The municipality is reflecting on how it can support leaders to make the best use of newly qualified teachers with research skills.

Achieving even more research-informed practices requires awareness of how we request and use research and ensuring that the management arenas are not used for administrative tasks or disseminating information. At a higher level, the municipality aims to model good learning arenas where research is used so that the leaders do the same for their teachers. It takes time to find good research literature that is relevant, and there is potential to further develop our partnership with universities to make research more accessible.

To further develop our schools, the municipality plans to design and incorporate a research-based framework for leadership practice into deep collaboration with school leaders. In designing the framework, emphasis will be placed on reading research literature at the same time as the framework evolves. The use of research will also be one of the hallmarks of good practice in the framework for school leaders. More active use of research in schools requires conscious municipal supervisors and school leaders who lead by example on all levels. A school's experiences should be reflected in the research literature, and researchers should investigate relevant problem situations so that practice and research inform each other and contribute to the school's and pupils' learning and development.

Conclusion

As system leaders of schools in Stavanger Municipality, we have identified several factors – both systemic and local – that are crucial to establishing a more research-oriented practice in our schools. Systemic factors include:

- schools having incentives to collaborate rather than compete
- national policies that emphasise research engagement
- school leaders being trained to facilitate professional learning and engagement with research.

Local factors include:

- initiatives and activities that facilitate research engagement
- appropriate arenas for research to meet practice
- local initiatives for relevant PhD positions that can be useful for schools.

In Stavanger, we aim to create these local enablers of research-oriented practice by engaging with research ourselves. As demonstrated above, we read, interpret and apply the evidence on facilitating collaborative professional learning, supporting leadership, managing partnerships and research mobilisation. By doing so, we believe that the education system can promote a more research-oriented practice in schools.

The role of research in developing the Welsh government's education policy and the practice of educationalists[9]

Huw Morris, Institute of Education, University College London

The role of research in the development of government policy in Wales is complex and has changed significantly over recent years following changes in government; changes in ministerial responsibilities; shifting circumstances and changes in civil service personnel; and parliamentary scrutiny and challenges from stakeholders. This case study seeks to chart some of the key features of these changes in the field of education policy in the period 1998-2022.

Wales is a small nation of 3.1 million people within the United Kingdom. Over the last 150 years, an increasing range of government policy, funding and regulatory decisions has been devolved to agencies and, since 1998, to the National Assembly, which, in the course of the last 20 years, has developed to become a devolved government and parliament (Knight and Crick, 2022[105]).

A common theme through this case study is the role of particular thought leaders in policy development and the gradual emergence of a supportive culture for research-informed policy and practice. The complexity and dynamism of this system as a whole have meant that it is beyond the direction of any one leader or group. System leadership is important, as witnessed by the number of system leaders who influence policy and practice through a series of shifting compromises. These shifts have consequences for the dominant narratives that represent current practice and intended future change (Rickinson et al., 2019[106]; Gerson, 2020[107]).

This case study is divided into five sections. The first section considers how the place of research in education policy was established during the formation of the Welsh government. The second section looks at how budget cuts, new ministers and a review by the OECD changed this approach in the late 2000s. The third section outlines how increases in the number of staff with research expertise improved the use of evidence and evaluation. The fourth section details a number of initiatives that increased the demand for research to inform policy and strengthened the capability of the organisation to deliver on this agenda. The last section describes the measures taken to encourage practitioner engagement and involvement with research.

Establishing the place of research in education policy development

The importance of research in the development and evaluation of policy and practice has been a key theme in the work of the Welsh government's Education Department since its formation in 1998. In the early years of the Welsh Assembly Government, the selection of government ministers, special advisors and civil servants with a background in university-based education research helped to establish a culture which supported this activity. Pivotal in these early stages were Jane Davidson (Minister for Education, Lifelong Learning and Skills) and her team of civil servants and specialist advisors who oversaw the drafting of *The Learning Country*. This was the first comprehensive statement of the new government's education strategy and policy intentions (Egan, 2022[108]). This paving document made frequent reference to the aims of increasing the use of educational research to raise whole school attainment, reduce exclusion, promote Welsh language provision and widen access to higher education (National Assembly for Wales, 2001[109]). This link between research and policy was further reinforced in the successor strategy introduced by the same minister in 2007, shortly after the formation of a Labour Plaid Cymru coalition government with the support of a new Director of Education and an expanded team of advisors. "The Learning Country: Vision into Action" strategy included comments on what research and analysis revealed before detailing future objectives in each of its constituent six sections (Department for Education, Lifelong Learning and Skills, Wales, 2007[110]).

National Assembly ministers sought to work with the representatives of key stakeholders and respect the autonomy of the teaching profession and educational leadership in the gradual development of practice while implementing significant new initiatives like a play-based foundation phase in primary education influenced by Scandinavian approaches and a Welsh Baccalaureate to complement the existing suite of academic and vocational qualifications influenced by the International Baccalaureate.

In the late 1990s and early 2000s, the newly elected Labour-led government in Wales was complemented by a Labour-led UK government with a similar outlook. The UK government, under the leadership of Tony Blair with David Blunkett as Secretary of State for Education, looked to Michael Barber, a former National Union of Teachers researcher and chair of a local government education committee in London, to help develop and implement policy. The approach that Michael Barber adopted drew on debates about evidence-based policy in health and education to map out the cases for change and logic models for any

proposed policy changes, as well as systems for monitoring implementation and impact. This approach became known as "deliverology" and was documented in a series of books over the next decade (Barber, 2007[111]; Barber, Moffit and Kihn, 2011[112]). In the late 1990s and early 2000s, this approach had a significant impact on the way the UK government monitored and attempted to influence the delivery and outcomes achieved by new education policies in England. It had, however, relatively little impact in Wales in the early 2000s after the formation of the Welsh Assembly Government as the Welsh Labour Party and Government, under the leadership of Rhodri Morgan, sought to maintain their policy differences with their UK Labour Party counterparts in England. This was a policy referred to locally as establishing "clear Red Water" between Wales and England (Davies and Williams, 2009[113]).

Shifting the policy focus

In 2010, the newly appointed Welsh Minister for Education, Leighton Andrews, faced significant challenges due to disappointing results in the OECD Programme for International Student Assessment (PISA), a critical report from the Chief Inspector of Education and an 8% cut in the budget as a consequence of austerity measures introduced by the United Kingdom's newly elected coalition government of Conservative and Liberal Democrat ministers (Reid, 2011[114]). Leighton Andrews was determined to address the perceived shortfall in pupil performance and challenge the approach adopted previously by school leaders, teacher educators, universities and civil servants. In 2011, a 20-point plan was published to address these issues, which was informed by policy-oriented education research reviews of the sort provided by the Sutton Trust Toolkit, which later became known as the Education Endowment Foundation's Teaching and Learning Toolkit (EEF, 2023[115]; Higgins, Kokotsaki and Coe, 2011[116]).

Leighton Andrews and his team were influenced by the ideas of Michael Barber about how change can be effectively implemented within education settings (Barber, 2007[111]; 2016[117]). Key to this approach was a belief that there are approaches to teaching and the organisation of education which are more effective and, therefore, the task for ministers is to encourage educational leaders and teachers to adopt these practices (Barber, 2009[118]). This message was relayed by senior civil servants who had been newly recruited to the Welsh government from previous roles in the Labour government-led Department for Education in London. Through this approach, effective policy and practice are determined by reference to a hierarchy of less or more valid research approaches from classroom observation to randomised control trials (HM Treasury, 2011[119]; Puttick and Ludlow, 2013[120]). Once established, it was suggested these more valid methods could be introduced through a mix of professional autonomy, top-down targets or quasi-markets (Barber, 2009[118]). Leighton Andrews shunned his predecessors' emphasis on professional autonomy and the market-based model of English ministers, preferring instead to focus on top-down targets. This approach prompted a challenge from a number of university researchers and media commentators in Wales (Rees and Taylor, 2015[121]; Evans, 2015[122]; Dixon, 2016[123]; Power, 2016[124]).

A new Education Minister, Huw Lewis, was appointed in 2013. One of his first actions was to ask experts from the OECD to review the department's education strategy and outline proposals to improve it (OECD, 2014[125]). In response to this review, the Welsh government reviewed its education strategy and published a new one entitled "Qualified for Life", drawing on advice from university-based researchers, including professors Mel Ainscow, Graham Donaldson and John Furlong, among others (Welsh Government, 2014[126]). As the objectives and commitments to action in this document made clear:

> *Our plan for improving education is based on evidence of what works. It is essential that we are evidence-based, both as policy makers and as practitioners. We know that resources are tight; in future years there will be further pressure on budgets and this places a premium on knowing and implementing what works. (Welsh Government, 2014, p. 11[126])*

The implementation of this new strategy was supported by publicly available guidance from a range of bodies, not least the EEF. This "What Works Centre" modelled its work on the What Works Clearinghouse introduced in the United States in 2002. The EEF was established with an anticipated budget of

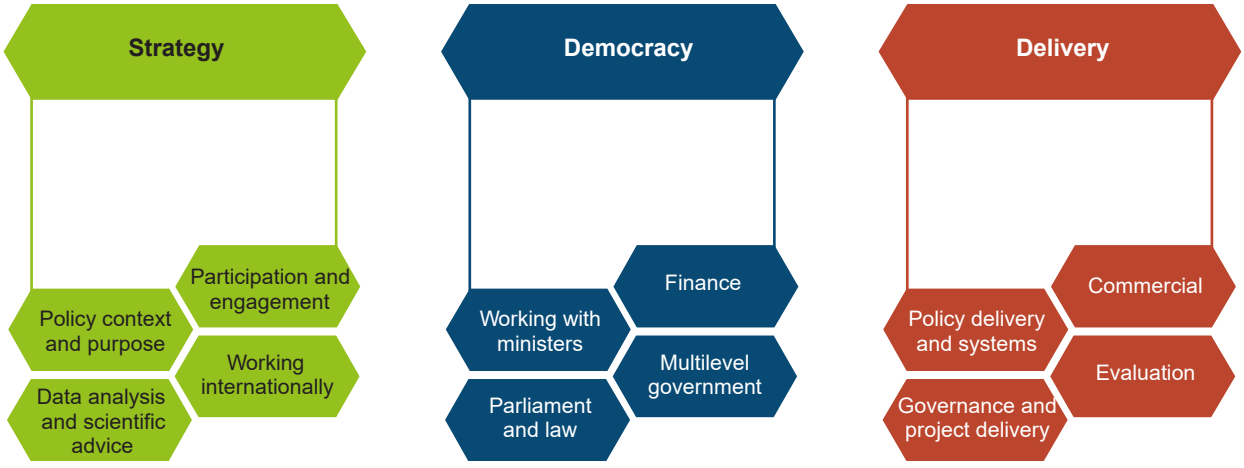
GBP 200 million from the UK government for a 15-year programme of research to establish the most effective educational practices based on randomised control trials and systematic reviews (Edovald and Nevill, 2021[127]).

The new approach in "Qualified for Life" was less managerial in approach, as it placed a greater emphasis on supporting teachers to develop strong pedagogy, engaging learners with attractive curricula and maintaining internationally respected qualifications, as well as education leaders supporting each other to create a self-improving system.

Increasing the number of staff with expertise in policy research

Civil servants in Wales are part of a wider UK civil service, where recruitment takes place through annual apprenticeship and graduate fast-stream processes, as well as internal promotion arrangements and direct external recruitment. Once recruited, civil servants are regularly reminded of the organisation's four core values – honesty, objectivity, impartiality and integrity – which support a research-based approach to policy development. Civil servants are also encouraged to align their career development with one of 27 professions (Civil Service, 2023[128]). Reforms introduced since 2013 have strengthened the role of these professions and improved the training and support available to staff. The policy profession is one of the largest occupational groups within the civil service, with close to 30 000 members. The professional standards for this group require staff at senior levels to demonstrate a range of skills arranged under three pillars (Figure 11.3). Under the first of these pillars – strategy – policy professionals are expected to be able to apply research methods to model, test and improve policy solutions, as well as to commission, understand and use data, evidence and advice from analytical, scientific and technical sources.

Figure 11.3. The three pillars of the policy profession standards



Source: Adapted from Policy Profession (2021[129]), "Policy Profession Standards", https://assets.publishing.service.gov.uk

Since these standards were introduced in 2013, they have strengthened the pre-existing expectation that civil servants will base policy proposals on a review of the evidence and use evaluation throughout the policy implementation process (Policy Profession, 2021[129]).

Staff in the policy profession are supported by civil servants in the analysis profession, which draws together statisticians; economists; operational researchers; social researchers; and digital, data and technology specialists. Each of these occupations has its own dedicated recruitment and staff development channels. To support staff in the policy profession and their analyst colleagues in the Welsh government, a series of meetings and, since the COVID-19 pandemic, online seminars, have provided a platform for researchers and officials to talk about policy issues, review evidence and consider evaluation plans. There

have also been secondment arrangements for researchers and policy specialists from other organisations, student placements at Master's and PhD levels and, more recently, policy fellowship opportunities for mid-career university researchers. This and other direct recruitment activities have steadily increased the number of civil servants in the Welsh government with research skills and experience. This, in turn, has increased the volume and diversity of research used to inform policy development and evaluation.

Building and sustaining policy-oriented research capacity and capability

Welsh and UK government agencies have sponsored a series of initiatives to bolster the policy expertise of university-based researchers in Wales. A key component of this activity was the establishment of the Public Policy Institute for Wales in 2014, with matched funding from the Welsh government and the Economic and Social Research Council. This new organisation was established to:

- stimulate policy-maker demand for evidence by working with ministers to identify their evidence needs and make connections across policy areas
- improve the supply of evidence by making policy-maker evidence needs known and generating independent authoritative analysis and advice
- support interaction between evidence suppliers and policy makers.
- facilitate knowledge exchange between Wales, the rest of the United Kingdom and beyond.

The Public Policy Institute for Wales was renamed the Wales Centre for Public Policy in 2017 as a member of the newly established UK network of What Works Centres with funding for a five-year period of GBP 7.4 million from the Economic and Social Research Council, the Welsh government and Cardiff University (Bristow, Carter and Martin, 2015[130]; UKRI, 2023[131]).

In Wales, contrary to the wider United Kingdom, there are relatively few policy think tanks and independent research organisations (exceptions are the Bevan Foundation, the Institute of Welsh Affairs, and the Learning and Work Institute). In addition, the Welsh government makes less use of large consultancy companies and audit firms to provide policy advice or undertake programme evaluations than its counterparts in government departments in London (Box 11.6).

Box 11.6. Consultancies in Wales

Those consultancies that are contracted generally have local expertise and the ability to use the Welsh language. Considerable funding and policy makers' time has been devoted to working with a growing network of university-based research centres, especially in the field of education. Chief among these centres are:

- Y Lab – a public services innovation lab for Wales
- Wales Institute of Social and Economic Research and Data – a national, interdisciplinary, social science research institute
- Wales COVID-19 Evidence Centre – conducts systematic research and commissions new studies
- four collaborative research networks designed to engage school-based teachers with university-based research and associated policy
- Children's Social Care and Development Centre – improving the well-being of children and their families.

The centres listed in Box 11.6 operate across Wales and are co-located with the Welsh nodes of several pan-UK research institutes (e.g. the Productivity Institute, the International Public Policy Observatory and

the Administrative Data Repository) as well as a number of other public and private sector research users in SPARK, a dedicated building dubbed the Social Science Park (SPARK, 2023[132]).

The physical co-location of policy researchers from a number of different centres was intended to promote innovation through the exchange of ideas and staffing. The shift to increased home and online working that accompanied the COVID-19 pandemic appears to have reduced the scale of this interaction, but the joint organisation and branding have helped to raise the status and alter the representation of these researchers.

Improving practitioner understanding of research and specific commissioned reviews

The appointment to a Labour-led government of Huw Lewis as Education Minister from 2013 to 2016 and subsequently Kirsty Williams, the only liberal democrat minister in the Welsh government, from 2016 to 2021, presaged the development of a more collaborative approach to policy development (see Box 11.7). This new approach expressed the values of the Labour government as articulated in the Well-Being of Future Generations (Wales) Act 2015. This act advocated five ways of working, with an emphasis on long-term planning, integration, collaboration, involvement and problem prevention (Welsh Government, 2021[133]). In retrospect, it is possible to see evidence of this change in approach in a series of reviews which were then commissioned by ministers and led by university professors supported by expert panels. These reviews sought to synthesise research findings while seeking to develop a policy consensus between stakeholders to guide future action. This was achieved by allowing time for the reviews, arranging in-person meetings with stakeholder groups and key individuals, and providing for extensive formal consultation and response when recommendations were published. Among the issues covered through these reviews were:

- curriculum and assessment arrangements (Donaldson, 2015[134])
- initial teacher education (Furlong, 2015[135])
- higher education funding (Diamond, 2016[136])
- tertiary education (Hazelkorn, 2016[137])
- further education teachers and work-based learning staff development (Lucas, 2017[138])
- accountability in a tertiary education system (Weingarten, 2018[139])
- research funding (Reid, 2018[140])
- the role of civic universities (Goddard et al., 2018[141]).

For a number of these initiatives, there was unanimity or a very substantial majority among the stakeholders represented on the committee or steering group developing the recommendations. On no occasion were there minority reports or documented dissenting opinions in these groups, although wider consultation processes invariably revealed a greater diversity of views among the tens or hundreds of stakeholder groups replying.

This collaborative systems-based approach was further formalised with the publication of a revised strategy, “Education in Wales: Our National Mission”, in 2017 following another review of educational progress in Wales by the OECD (OECD, 2017[142]; Welsh Government, 2021[143]). The key theme linking these initiatives in this new document was the focus on creating a self-improving schools system, parelleled by similar developments in the post-compulsory phase as detailed in a ten-year strategy for tertiary education and an associated Tertiary Education and Research Act (2022) (Welsh Government, 2022[144]). To support this work, sizeable investments were made for developing the research skills of teachers and the university staff who support them in initial teacher education and continuous professional development. The vision behind these investments and the methods that would be used to realise it was then spelt out in more detail in the National Strategy for Educational Research and Enquiry (Welsh Government, 2021[143]).

Box 11.7. Developing a collaborative culture

The collaborative approach to education policy development informed by research was reinforced through the experiences of the COVID-19 pandemic. Between March 2020 and November 2022, the Welsh government's Cabinet, supported by officials organised through a technical advisory group, held a series of regular meetings which mirrored the operations of the Scientific Advisory Group on Epidemics with corresponding sub-committees, not least in the field of education, where four groups met regularly with practitioners and researchers specialising in early years, schools, further education and universities. Through these groups, research was considered to inform the drafting of advice and regulation for consideration by ministers. This close co-operation helped to further forge a collaborative culture but did not seek to remove scrutiny or challenge by those present or others not yet involved. The publication of the OECD's PISA results in December 2023 will reveal the strength of these arrangements.

Conclusion

As the approach for using research in policy development and implementation has changed in Wales over the last 20 years, so have the dominant leadership styles and cultures of engagement from politicians, policy makers, intermediate body representatives, education institution leaders and practitioners. During the period of professional autonomy, institution leaders were encouraged by ministers and policy makers who co-operated with institutional leaders and practitioners in their interactions with other stakeholders. This light-touch collaboration was in marked contrast to the more rigorous top-down leadership, target setting and performance management, which became more prevalent during the period of more overt "deliverology". During this time, system leadership was more overt and often subject to a single point of direction. In the last of the three phases reviewed, a more co-ordinated, co-operative and distributed form of systems leadership emerged, with clear evidence of multiple points of influence and development from a shifting array of policy makers, institution leaders, practitioners and other stakeholders.

How the arrangements described in this case study will fare in the future is impossible to predict, but there is evidence that over a sustained period, the Welsh government has sought to encourage and embed a partnership approach for using research evidence and methods and the co-construction and implementation of existing and new policies. This approach has supported the introduction of activities which have endured and have improved educational performance as measured by a range of external benchmarks, including PISA and qualification attainment.

Conclusions: The role of leaders in systems and networks

Melissa Mouthaan, OECD

The five case studies in this chapter presented different examples of leadership for research engagement in organisations of policy and practice. They explored the challenges and opportunities that systems experience, as well as the practices that different systems are experimenting with to establish a culture of research engagement.

The introduction to this chapter invited authors to explore specific questions relating to leadership in education. What does strong leadership in a policy or practice organisation look like? What insights can recent research on networks and leadership give us regarding high-quality evidence use in organisations? What roles can drive a culture of research use and how can leadership strategically identify individuals in these roles and leverage them?

These questions were explored to different degrees, and from different angles. While drawing on often quite different contexts, three common themes clearly emerge.

There is a better understanding in the education sector of the nature of relationships, and how we can support these more effectively

Several of the case studies discussed the complex social processes that characterise research engagement. The authors gave concrete examples that speak to this complexity and indicate some of the initiatives that systems and organisations have put in place to promote relationship-building and collaboration. They illustrate how relationship-building must feature as a core component of building a culture of research engagement, examining the need for better relationships among different actors and between systems.

Looking at research-policy relationships, Huw Morris and John O'Connor discuss the need to build stronger and more effective links in Wales and Ireland. Morris notes some of the initiatives that UK government agencies have put in place to build the policy expertise of education researchers, such as the establishment of what is now the Wales Centre for Public Policy within the UK network of What Works Centres. Beyond research-policy relationships, Morris reminds us that a key role of knowledge brokers can also include facilitating knowledge exchange between systems, similar to how the Wales Centre for Public Policy facilitates such exchanges between Wales and other systems. Finally, relationship-building also needs to be threefold in the form of stronger research-policy-practice links, and Wales is also trialling a more collaborative approach to education policy development whereby policy makers meet regularly with practitioners and researchers. John O'Connor's piece illustrates that building relationships in Ireland is done formally but also often informally. He notes that personal networks of academic researchers with policy makers is an important influence on education research use in the Irish system – and concludes that a more systematic, less *ad hoc* approach of drawing research and researchers into education policy development could be more effective. Notably, he suggests that co-creating support systems and mechanisms would be a better solution.

Jørn Pedersen and Inger Sofie Berge Hurlen's Stavanger case study gives valuable insights into a Norwegian municipality's efforts to establish partnerships between schools, universities and other actors. Their analysis illustrates two points. First, that an important condition for a culture of research engagement is funding for relationship-building and dedicated time. Ensuring stable funding for Stavanger Municipality's partnerships with other actors enables it to operate sustainably in the long term, and securing such funding is thus an important activity for the municipality. Second, its experiences confirm what has also been found in the literature: that partnerships and networks work best when there is equality among the different participants, and clear expectations regarding roles and the purpose of the network or partnership (see also Chapter 2). The importance of the equal nature of relationships is echoed in Mauricio Pino-Yancovic's analysis of educational networks in Chile. He suggests that the use of these networks as a supervision mechanism by the Ministry of Education gives them a hierarchical structure that network participants struggle with – and limits the ability of these networks to become spaces for genuine collaborative research and research engagement. Overall, both these case studies and wider studies on how to conduct collaborative research offer excellent insight into the nature of relationships that can contribute to establishing a culture of research engagement, and how to build effective partnerships in diverse contexts.

There is more clarity regarding the concrete actions leaders can take to support research engagement

We previously noted that strategic leadership within and across organisations is needed to drive the dynamics of research production and use (Révai, 2022[145]). The case studies in this chapter articulate what this concept involves, some of the challenges of this role and demonstrate through diverse examples that creating a culture of research use in education requires a nuanced set of leadership skills. First, it

requires leaders take concrete actions that redefine organisational culture in favour of a culture of research engagement, such as taking the lead in ensuring staff time is used optimally. Second, leaders are required to navigate a complex or uncertain environment and take strategic, thoughtful decisions with respect to using research to improve practice.

Within organisations, leaders play an important role in (re)defining organisational practices and (re)arranging how scarce resources, such as time, are allocated. Toby Greany and Georgina Hudson's case study highlights that one of school leaders' key tasks is to make evidence both simple, and important, given how time-poor teachers are. Several of the pieces, and particularly the case studies describing the work context of leaders in practice organisations, remind us that working behind the scenes as a facilitator of meaningful interactions that promote thoughtful engagement with research, and being the organiser of the spaces and places where such interactions take place, is an important aspect of leadership that is perhaps underestimated. Jørn Pedersen and Inger Sofie Berge Hurlen note the important role played by headmasters in managing teachers' professional development time. Leaders of schools in their municipality have increasingly shifted from organising administrative meetings to organising "learning meetings", where practitioners gather to read and discuss research articles. Preparations for such meetings take time: crucially, school leaders need both the time and the training to perform this supporting role well. Taken together, leaders can take concrete actions to promote changes in organisational culture that lead to more systematic engagement with research.

The case studies provided rich insights into the complex and uncertain decision-making environment that organisational leaders work in. Toby Greany and Georgina Hudson illustrate the competing pressures that school leaders in England are faced with. Their analysis of two interventions in Cumbria, England, shows the tensions and paradoxes that exist in many school networks and with which school leaders are confronted. The authors conclude that effective leadership in such networks must aim to strike a balance between a "what works" purist approach (only drawing on proven interventions and particular methodologies) and a more pragmatic approach that also draws on different and more diverse types of evidence, and addresses schools' needs. In many instances, there are no obvious answers concerning the exact balance or approach to take when taking decisions in complex environments. In sum, leaders' individual qualities and concrete actions in bringing together actors, and taking strategic decisions, is an important aspect of a culture of research engagement.

Leadership at different levels should be strongly connected and oriented towards research engagement

The case studies demonstrate that coherent and effective system leadership is critical to building such a culture. Effective system leadership supports networks and leaders in schools and policy organisations in research engagement rather than obstructing these.

We noted in the introduction to this chapter that system leadership in the traditional sense can be defined as school leaders who operate beyond the immediate borders of their own schools, concerned with the improvement of schools in the wider system, not only their own (Fullan, 2002[7]). The case studies lend themselves to a broader understanding, however, of "system leadership". Drawing on the different national contexts illustrated by the case studies, we demonstrate how different types and levels of system leadership are needed – but also, robust connections between them.

Several examples in this chapter illustrate how system leadership at the national level is critical to ensuring the conditions for creating research-engaged schools. Mauricio Pino-Yancovic demonstrates how a confusing double focus at the system level acts as an obstacle to the effective running of school networks in Chile, as there is a lack of clarity in these networks' goals. His case study illustrates how politics shape the dynamics of knowledge use in schools in Chile, as well as conditions for network leadership. Both the Chilean case study and the English case study presented by Toby Greany and Georgina Hudson emphasise the disruptive nature of inter-school competition. It is clear from these pieces that schools need

to be incentivised to collaborate with each other rather than to compete, and national-level system leadership plays a key role in establishing such a collaborative, rather than competitive, environment. Huw Morris illustrates how a vision for widespread civil service reform introduced in the United Kingdom in 2013 has better equipped policy makers in education and other policy fields with the skills to understand, analyse and use data and evidence, but also to engage with researchers, research institutions and commission research. Finally, John O'Connor's study of education research policy relations in Ireland highlights a common issue that Ireland and other systems experience: the misalignment of academic incentives with the research impact and engagement agenda. As O'Connor also concludes, this misalignment is not inevitable. But addressing this will require significant and concerted efforts at the system level.

In Stavanger, Jørn Pedersen and Inger Sofie Berge Hurlen discuss the role of local governance actors, in their case, the municipality, as a system-level leader. They demonstrate that their own understanding of, and interactions with, national policy instruments have resulted in them securing funding for school partnerships, which is, in turn, a key support that allows municipalities to establish a culture of research engagement through tailored initiatives.

The findings of the case studies point to a critical role of systems thinking in connecting these different types and levels of system leadership. System leaders, in the traditional sense, are better equipped to build a culture of research engagement in their schools and networks when the appropriate conditions are ensured at the local and the national level. Such conditions, as illustrated above, include less inter-school competition, more time (or allowing the reallocation of it) and appropriate incentives. There is also a role in many systems for local governance actors, such as municipalities, to capitalise on these conditions, or to advocate for them when they are not yet in place. Arguably, local governance actors are well-placed for this kind of work, given their strong links with schools but also other levels of governance. Finally, Toby Greany and Georgina Hudson's case study is an excellent illustration of how school network system leaders navigate the conditions and constraints that are ultimately defined elsewhere in the system in an effort to make the best out of the given possibilities. In sum, effective system leadership, and strong connections between different levels and types of system leadership, enables schools and policy organisations to establish a culture of research engagement. While this chapter has focused on culture and learning within and across organisations of policy and practice, it is also evident that such organisations operate in a context characterised by relations with actors at other levels that also shape the nature of engagement with research in education. This includes organisations responsible for funding, creating and synthesising knowledge and supranationational actors. The existence of this wider group of actors bolsters the case for better system co-ordination and having appropriate forms of system leadership in place.

Bottom line

Our last publication concluded that strategic leadership, incentives and resources are key factors for evidence-informed education policy and practice (Révai, 2022[145]). The case studies presented in this chapter dug deeper into what exactly leadership, incentives and resources mean for a stronger culture of research engagement, but also how these play out together.

The different cases demonstrated some of the qualities associated with the type of leadership that strengthens research engagement, including leadership taking a role in interpreting research findings and adapting it to the local or school context. This can be considered a form of "thoughtful engagement" with research that leaders demonstrate (Rickinson et al., 2022[146]). The cases also gave insights into what could be considered good or promising practices in practice and policy organisations in establishing the necessary incentives and resources for research engagement.

At the same time, the research questions laid out in the introduction to this chapter and the accompanying case studies also show that there is scope for further research in a few key areas. Largely, the case studies

reported on leaders in organisations and in the system who are easily identifiable. The literature, on the other hand, suggests that some actors perform key support roles implicitly within the system, without this necessarily being a key part of their formal role or identity (Cairney, 2016[18]; Aldrich and Herker, 1977[147]; Schotter et al., 2017[148]). Individuals in these types of roles have been shown, for example, to be essential in encouraging or facilitating research use in organisations as builders of networks or as research champions. Future research would benefit from understanding these key roles that can drive a culture of research use, how to identify individuals in these roles, and how to strategically leverage and support their work.

In addition, several of the case studies suggest that strategic leadership of relationships and interactions with the goal of reinforcing research engagement (among other goals) would be welcome. This resonates with the concept of networked leadership, which spans several organisations and sometimes also boundaries of communities (e.g. policy makers and researchers). What exactly is distinct in networked leadership from system leadership and how each concept can support our understanding of the role of leadership in improving research generation and engagement are still open questions. These case studies may prompt further efforts to investigate the nature and quality of networked and system leadership approaches.

On a final note: this chapter, by examining both cases of practice and policy organisations, draws together different strands and traditions of research that have developed somewhat in isolation, but that nonetheless run on parallel tracks, and address common issues. We hope, therefore, that this type of analysis provides food for thought for ways in which practice and policy can learn from each other.

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Notes

[1] This study applied a mixed-method research guideline (Greene, 2007[150]). The questionnaire was answered by 1 786 principals and curriculum co-ordinators who participate in 483 SIN. For this study, the Educational Collaborative Networks Questionnaire (ECN-Q) by Díaz-Gibson et al. (2014[153]), a Likert-scale questionnaire, was adapted and validated. The 2016 and 2017 studies were integrated using the theoretical perspective on collaborative inquiry (DeLuca et al., 2015[152]; Pino-Yancovic, González and Ahumada, 2018[151]) to identify the common challenges defined in educational networks, the type of inquiry and action carried out, and the monitoring and reflection processes they undertake.

[2] For more information on the WELL initiative see: https://welleducation.uk.

[3] The EEF is an independent charity which supports schools to improve teaching and learning through better use of evidence, including through the national Research Schools Network; see: https://educationendowmentfoundation.org.uk.

[4] The WELL Year 1 evaluation report is available at: https://welleducation.uk/wp-content/uploads/2023/01/WELL-Project-Evaluation-Year-1-Report-FINAL-REVISED-24.1.23v2.pdf (accessed on 6 March 2023).

[5] The EEF guide sets out six principles/steps for leaders to follow: 1) treat implementation as a process, not an event; 2) create a conducive climate; 3) explore – identify the problem to address and the programmes/practices to implement; 4) prepare – the staff and resources required; 5) deliver – support staff, monitor progress, adapt if needed; 6) sustain – plan for sustaining and scaling from the outset.

[1] The Research for Public Policy seminar series was a joint initiative of the Royal Irish Academy and the Irish Research Council. The first seminar took place on 27 January 2021 and can be viewed at: https://www.ria.ie/news/policy-and-international-relations-policy-working-groups-research-public-policy/research-public.

[2] Semi-structured interviews were conducted with senior policy makers in the Department of Education and Skills and with educational researchers in Irish universities and two main research institutes – the Education Research Center and the Economic and Social Research Council. In July 2020, the government approved the establishment of a new Department of Further and Higher Education, Research, Innovation and Science. The Department of Education and Skills was renamed the Department of Education.

[3] The Declaration on Research Assessment recognises the need to improve the ways in which researchers and the outputs of scholarly research are evaluated. See: https://sfdora.org.

[4] See: https://www.gov.ie/en/press-release/f343c-national-science-advice-forum-and-government-science-advisor.

[5] Impact 2030: Ireland's Research and Innovation Strategy was published in 2022: https://www.gov.ie/en/publication/27c78-impact-2030-irelands-new-research-and-innovation-strategy.

[6] For further details see: https://www.gov.ie/en/publication/efd7f-civil-service-renewal-2030.

[7] The Royal Irish Academy (RIA) have put the issue of science advice for policy on the agenda of research-performing organisations in Ireland. For examples of RIA initiatives, see: https://www.ria.ie/policy-and-international-relations/science-advice.

[8] A public PhD is a study scheme in Norway whereby the doctoral student works part time in a university and part time in a public service body (e.g. ministry, school). The theme of the doctoral research has to be relevant for the public institution.

[9] This article represents the author's personal views based on his experience of working in the Welsh government between 2013 and 2022; a review of the literature; and discussions with colleagues within the Welsh government, universities, colleges and schools. The author declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article. The author received no financial support for the research, authorship and/or publication of this article.

12 Building a culture of research engagement: What are the success factors?

Nóra Révai, OECD

Melissa Mouthaan, OECD

This chapter brings together the lessons learnt from the chapters in this report. It starts by elaborating on the ingredients and basic enabling conditions of thoughtful engagement with research. It then discusses insights on learning both as a core component of a strong research engagement culture and as an explicit capacity-building strategy. The chapter summarises structures, processes and tools that bridge the research-policy-practice gap and discusses implications for leadership. It concludes with thoughts about the future of research engagement and suggests concrete actions.

Introduction

Building a strong culture of research use in policy and practice means developing beliefs, values, norms and attitudes that consider research evidence a major source of knowledge for decision making at all levels of the education system. This is by no means an easy task, and it demands a collaborative and self-reflective effort from researchers, policy makers, practitioners, intermediaries and other actors. This report set out to examine how we can develop a culture of research engagement and what learning it involves for individuals, organisations and the system. The initial questions that guided this report were:

- What do we mean by a culture that supports research engagement? What are the characteristics of such a culture and how can we develop these in educational organisations and at the system level?
- How can we develop individuals' and teams' skills and organisational and systemic capacity for a quality use of research in policy making and practice?
- Which structures and processes support the development (or transformation) of an organisational and system-level culture for better research engagement?

Chapter 1 of this report pointed to the heterogeneity of culture(s) within and across organisations and systems. It raised the conceptual question of whether culture is the inherent nature of organisations and systems or an attribute we can transform. The chapters in this report suggest that there are some key factors that influence the culture of research engagement in policy and practice, and these factors can be actively shaped and supported. Authors gave insights into what key ingredients are still lacking in systems and how we can better align and co-ordinate mechanisms. Importantly, they also gave numerous examples of existing initiatives, tools and practices which have been shown to support engagement with research. This chapter highlights the main messages that have emerged.

Understanding and enabling thoughtful engagement with research

The foundation of a culture of research engagement is developing a shared and deep understanding of what research evidence and "thoughtful engagement" with it mean – to use the term Mark Rickinson and colleagues introduced (Rickinson et al., 2022[1]). Yet, this shared understanding is simply missing in more than half of the systems that responded to the OECD survey (see Chapter 3).

Research evidence remains just one source of knowledge that competes with the contextual and professional knowledge of different actors and the interests and views of a range of stakeholder groups. The two evidence use journeys portrayed by Rien Rouw and Quirine van der Hoeven (Chapter 4) and Jeroen Backs and colleagues (Chapter 5), as well as John O'Connor's case study of the research-policy interface in Ireland (Chapter 11), demonstrate the complexity of using research in a policy process through the authentic voices of policy officials. In addition to complexity caused by different sources of knowledge and views, research itself originates from different disciplines (e.g. curriculum research, policy evaluations, foresight research) and contexts (local, national, international) and thus needs to be translated or interpreted when applied to another context. Research sometimes presents conflicting findings, or implications for policy or practice are not clearly defined. Ultimately, political values and the political agenda play a major role in policy decisions. These factors altogether show that an instrumental use of research, i.e. direct implementation of evidence, is hardly ever possible for complex policy questions.

Similarly, Toby Greany and Georgina Hudson (Chapter 11) point to the difficulty of instrumental evidence use, even when robust evidence and implementation guides, such as the Education Endowment Foundation's resources, are available. School leaders and teachers also face strategic choices and operational dilemmas that require thoughtful engagement with research rather than its straightforward application.

These challenges together do not invalidate the legitimacy of strengthening research engagement. Rather, they call for developing thoughtful engagement with research by all stakeholders involved in policy and practice decisions. The strength of decision-making processes lies in the meaningful combination of different knowledge sources, values and agendas, with research evidence playing an important role in determining the trajectory of policies and practices.

Ingredients of thoughtful engagement with research

A key piece in thoughtful engagement with research is genuine *motivation* and *willingness to challenge one's views* based on research. OECD survey data presented in Chapter 3 show that while motivation is strong overall, ministries in half of the respondent systems think that practitioners and policy makers are unwilling to question their opinions. Challenging one's own views and preconceptions is more difficult than ever before in our narcissistic western societies so strongly centred on our projected image (Revel and Ricard, 1997[2]). It requires authentic self-reflection and courage to investigate our thoughts and actions deeply, acknowledge when we are wrong and identify areas for improvement, and recognise when ideas are based on ideology. In this respect, the self-reflective analysis of the evidence use journeys presented in Chapters 4 and 5 are notable demonstrations of thoughtful engagement with research at the system level.

Genuine *curiosity,* or an *"inquiry habit of mind",* as Chris Brown and Cindy Poortman (Chapter 8) describe it, is another key element. It involves seeking out a range of perspectives, relevant information from numerous and diverse sources, interpreting and challenging these, and exploring new ways to resolve problems. The same chapter stresses the role of emotions in being open, curious and willing to challenge our own preconceptions.

An emotional state that drives exploration and creativity will only develop in a trusting environment. *Trust* allows people to open up, be vulnerable, share difficulties, propose innovative ideas and take risks (Cerna, 2014[3]), as underlined across almost all chapters in this report. Yet, trust in research itself and trust between researchers and policy makers/practitioners are both generally weak across OECD systems (Chapter 3).

Basic enabling conditions

Facilitating a culture of engagement with research requires enabling conditions and incentives for thoughtful engagement among all actors. Various chapters across this report discuss these conditions.

It is by now well-established and often observed that a fundamental condition for research engagement is *time*. A lack of time has been and still is perceived as a shared barrier to engaging with research in policy and practice across systems (OECD, 2022[4]). As Elizabeth Farley-Ripple and co-authors highlight in Chapter 10, in schools with a strong research engagement culture ("deep-use" schools), using research is not additional work, it is part of "the work". Inger-Sophie Berge Hurlen and Jørn Pedersen (Chapter 11) describe how a municipality creates space and time for developing and sustaining relationships between school leaders, universities and local policy makers. Allocating time for something is giving it importance. Systems and leaders within them have a duty to ensure that research engagement does not become yet another item that falls onto teachers or civil servants to incorporate in their already busy workloads.

Developing trust and a shared understanding requires *stable relationships* and *quality interactions* between stakeholders, which is the third condition. This involves regularly identifying key actors and strategically investing in their interactions. Partnerships work best when power is shared among the different participants and when there are clear expectations regarding roles and the purpose of the partnership. These elements can be supported by structured dialogues in which research evidence can be collectively appraised and other types of knowledge, as well as values, taken into account. The learning conversations presented in Chapter 8, the arts-based approaches discussed by Amanda Cooper and colleagues in

Chapter 9, and the collective evidence appraisal in deliberative decision making briefly described in Chapter 6 are all concrete tools that support quality interactions.

Giving importance to research engagement is also reflected in systemic *incentives*. Chapter 3 notes that using research is important to policy makers and practitioners in most of the systems, but in about a quarter of them, there is no clear expectation to use education research. While *setting expectations* to use research is acknowledging its importance. Chapter 8 reminds us that using research for accountability rather than a genuine commitment to improving, will likely not result in thoughtful engagement. Building and sustaining quality relationships necessitates not only dedicated time but also *stable funding,* as demonstrated in the Stavanger, Norway case study in Chapter 11.

This report suggests that there is considerable scope to establish strong incentives for research engagement in organisations and systems, with system leaders playing a key role in establishing these incentives.

Connecting research generation and research engagement

There is no thoughtful engagement with research without appropriate research in the first place. From the perspective of research engagement, there are two aspects of quality: the quality of research evidence itself and the quality of engagement with it (OECD, 2022[4]; Rickinson, Sharples and Lovell, 2020[5]). The quality of research in this context goes beyond methodological quality and includes its relevance and accessibility as well. Melissa Mouthaan and Mykolas Steponavičius show in Chapter 2 that OECD systems consider various types of research relevant for policy, but some of these are not yet highly accessible. They argue that well-designed mechanisms to co-ordinate the production of education research could help address gaps in research and issues around accessibility. Synthesising evidence is one such mechanism that is still lacking in education despite wide recognition of its importance in reinforcing research engagement. All policy pieces (featured in Chapters 4, 5 and 11) emphasise that more high-quality evidence syntheses could strongly support research engagement in policy making.

Involving practitioners and policy makers in research has been proposed by many as a way to make research more relevant and strengthen engagement with it (OECD, 2022[4]). But alongside the promises of collaborative research, critical voices remain, particularly about the scientific rigour, feasibility and value of such research (Kieser and Leiner, 2011[6]; Oliver, Kothari and Mays, 2019[7]). Innovative approaches to collaborative research engagement are emerging using arts and games as a means to bring different actors together, create a shared language and mutual understanding (see Chapter 9). Another actionable approach detailed in this report is that of learning conversations that can be used in data teams and research learning networks (Chapter 8). Action research was used to evaluate interventions in schools in the England case study in Chapter 11. The analyses of evidence use journeys could be described as policy action research and in Chapter 6, Nóra Révai argued that they are valuable for improving policy and have the potential to enrich research itself.

Most of the examples of collaborative, practitioner or policy research featured in this report are not quite like research production in its traditional, academic sense. Perhaps the main criticism of these less traditional forms of research could be alleviated if we considered them as research engagement rather than research production. If their goal is school and policy improvement and if this goal is achieved, their value is hardly questionable. The examples in this publication suggest that collaborative research is something in between research production, mobilisation and use. Certainly, as Chapter 2 emphasises, more research is needed to explore their forms, impact and value for research generation and engagement.

Overall, many chapters suggest that developing a culture of research engagement would require better connections between research generation, mobilisation and engagement processes. Only a handful of countries have a national strategy for education research that encompasses all these pieces. Norway is a good example that recently revised its education research strategy and expanded its scope to include a

stronger focus on research dissemination and user participation (Chapter 7). Such strategies, as well as other system-level co-ordination mechanisms, would also be needed to strengthen the link between generation, mobilisation and engagement.

Learning as culture and strategy

Professional learning is a core building block of a strong research use culture. So much so that we wonder if learning is not part of the culture. Chapters across this report showed two angles of learning in the context of research engagement: learning as an attribute of a research engagement culture and learning as a strategy to develop a research engagement culture.

Under the first angle, a learning-centred attitude is a descriptor of an organisational or system-level culture. Chapter 8 identifies a norm of innovation and adoption as a success factor of learning conversations, a process that facilitates engagement with research and data to address problems. The authors associate the concept of learning organisation with this norm. Learning organisations have been described as:

> *… an organizational culture in which individual development is a priority, outmoded and erroneous ways of thinking are actively identified and corrected, and the purpose and vision of the organization are clearly understood and supported by all its members. (Worrell, 1995, p. 352[8])*

The OECD identifies a culture of inquiry, exploration and innovation as one dimension of learning organisations (OECD, 2016[9]). This is to say that learning, innovation and research engagement are intimately associated from the perspective of organisational culture. In Chapter 11, research engagement is termed as "evidence-informed learning and improvement" in the England case study, which emphasises collective sensemaking and learning as key attributes of leadership that support this. Similarly, a culture of improvement is a feature of schools that are "deep users" of research, and Elizabeth Farley-Ripple and colleagues (Chapter 10) identify a strong focus on professional learning by leaders as key to developing this culture.

Under the second angle, *learning as a strategy* involves deliberately developing individual skills and collective capacity for research engagement in policy and practice-oriented organisations. Two components of this strategy emerge from this report. The first is setting expectations and standards with respect to developing research engagement skills. In Chapter 11, Huw Morris examines how changes to the standards in the policy profession have strengthened the expectation that civil servants in Wales integrate research evidence and use evaluation throughout the policy implementation process. The Dutch and Flemish evidence use journeys both suggest that the civil service competence framework recently developed by the European Commission's Joint Research Centre (Schwendinger, Topp and Kovacs, 2022[10]) could be a useful tool for capacity development in ministries.

The second is developing practitioners' and policy makers' research-related skills. Chapter 3 points to serious gaps in this regard: the research literacy skills of practitioners and policy makers are not yet omnipresent across OECD systems, and teachers do not have sufficient opportunities to develop these in initial teacher education and continuous professional development. Chapter 4 proposes comprehensive human resource strategies for a ministry to ensure appropriate research-related capacity in policy processes. Such strategies can include recruitment, professional development for staff, and schemes such as secondments or public PhD programmes.

In organisations and systems with strong research engagement, learning as a norm (and as such part of the culture) and learning as a strategy are hardly separable. The Norway (Stavanger) municipality case study in Chapter 11 demonstrates how system-level expectations with respect to professional learning, a research-focused culture at the municipality and the municipality's specific initiatives of collective learning among schools play out jointly to foster a culture of research engagement. Similarly, the learning conversations discussed in Chapter 8 and schools that are deep users of research (Chapter 10)

incorporate a cultural and a strategic aspect of learning. In these promising examples, learning is both a cultural norm of improvement and innovation, and a strategy with deliberate initiatives focused on professional learning for teachers to hone their research engagement skills.

This report focused primarily on practitioners' and policy makers' skills, thus fewer chapters addressed the question of learning for other actors, notably researchers and intermediaries. Yet, their skills and capacity are also critical to strengthen the impact of education research in policy and practice. Sufficient capacity for conducting policy-oriented research and synthesising research evidence to support policy making were highlighted as key in the Flemish evidence use journey (Chapter 5), and the case studies on Ireland and Wales (Chapter 11). Despite efforts in some countries, academic incentives are still a major barrier to conducting, synthesising and communicating, and possibly co-producing policy- and practice-relevant research (Chapters 2 and 11). Incentives should encourage researchers to develop their understanding of the nature, questions, problems and context of policy making, schools and teaching practice. In addition, leaders of schools, policy and research organisations play a key role in reinforcing research engagement and should have adequate opportunities to learn how to do this effectively. Future work should explore the extent and quality of learning opportunities for actors beyond practitioners and policy makers.

In sum, several of the contributions in this report show that education policy makers and practitioners in some systems demonstrate a reasonable – and at times quite advanced – understanding of research and its role (including limitations in what research can do). They also demonstrate competences to engage with research to solve challenges. While there is still a need to extend teachers' and policy makers' opportunities and systemic and organisational incentives to learn to engage with research thoughtfully, there are promising developments in this area, and ample room for mutual learning across countries and the policy and practice contexts.

Structures, processes and tools to bridge research, policy and practice

As noted in Chapter 1, there are significant communication and culture gaps between research, policy and practice communities. This report showcased numerous structures and processes that help bridge research, policy and practice and increase research engagement, along with concrete tools and strategies that support these. Structures, processes, tools and strategies are not hard and firm categories and sometimes it is difficult to distinguish between them. Structures roughly refer to the arrangement or organisation of something, while processes to a series of steps taken to achieve an outcome. Tools can be methodologies and artefacts that support processes, and strategies can refer to projects or sets of activities that sometimes combine structures and processes. This section uses these somewhat overlapping categories as a pragmatic way to present emerging findings from the report.

Structures and systems thinking

This report presented multiple types of *structures*, as summarised in Table 12.1. First, formal organisations that have the specific goal of closing the research-policy or research-practice gap. These organisations usually reflect long-term investments to establish stable structures. Second, informal networks and organisations that are shorter term structures set up to address specific issues. A third and perhaps less tangible type of structure are schemes that bring researchers and policy makers or practitioners closer to each other. These include secondments, fellowship arrangements and other structured mobility programmes for researchers and policy specialists to spend extended periods of time in each other's organisations to better grasp the day-to-day realities of each other's communities. The proximity of different actors was highlighted as an important factor in increasing research engagement in policy in the Wales and Ireland case studies (Chapter 11). There is growing evidence that such schemes drive the professional development of both educational researchers and policy makers (Chapter 11).

Table 12.1. Typology of structures showcased in this publication that support research engagement

Structure	Examples	Source in this report
Formal organisation	Public Policy Institute for Wales (United Kingdom) Netherlands Initiative for Education Research (Netherlands) Education Endowment Foundation (United Kingdom) Norwegian Knowledge Centre (Norway)	Chapters 4, 7 and 11
Informal networks and organisations	Research learning networks Network for Evidence-Informed Policy and Practice (Canada) Educational networks (Chile)	Chapters 8, 9 and 11
Schemes to promote proximity, mutual learning and interactions between the research, policy and practice communities	Secondments and policy fellowships Structured mobility programmes	Chapters 7 and 11

Note: This list is non-exhaustive.

This report showed that each of these types of structures can support research engagement and thereby improve policies and practices. However, what also emerges is a need for a system-level understanding of the landscape of these structures, their respective roles and impact. This would allow mapping missing links, and addressing needs through overall co-ordination mechanisms across these structures (Maxwell, Sharples and Coldwell, 2022[11]). The concept of knowledge infrastructure used in the Dutch evidence use journey (Chapter 4) reflects precisely this systems view. The analysis of the different actors and their roles in the curriculum revision process helped understand the dynamics of knowledge use over time and across the different stages of a policy process and led to valuable insights with respect to improving research engagement. Such analysis is a wonderful example of turning the abstract concept of systems thinking into a very concrete, actionable exercise.

Processes

In addition to structures, this report also presented a range of *processes* specifically designed to strengthen thoughtful engagement with research.

A wide range of processes exists in the context of practice. Chapter 8 describes the process of learning conversations with concrete guidance on the phases and activities, as well as the success factors. Engagement with data and research is at the core of this collaborative learning and school improvement process. Chapter 9 features approaches that support research-practice partnerships in ensuring that the basic ingredients and enabling conditions of thoughtful engagement discussed above – time, trust, quality interactions, curiosity. The collaborative inquiry networks presented by Mauricio Pino-Yancovic in Chapter 11 and the Norway (Stavanger) and England case studies in the same chapter also describe processes that facilitate research engagement in schools.

Processes that support policy makers' engagement with research include research-policy-practice partnerships discussed in Chapter 9 and processes that facilitate stakeholders' engagement with evidence in policy processes. Examples of the latter are the collective evidence appraisal by stakeholders (Chapter 6) and the stakeholder user groups introduced during the development of standardised tests in Flanders (Chapter 5). Through these user groups, teachers, school leaders, teacher trainers and other educators meet with researchers to discuss research proposals and provide input based on their own professional knowledge.

Tools and strategies

There are concrete tools and strategies that can support the effective functioning of these structures and processes. These include tools and strategies to develop policy makers', practitioners' and researchers' skills; and to bring together stakeholders for evidence-informed learning or discussions. Many of these have been tested or trialled in one or more contexts. They often include clearly described stages and activities, and reflections from designers of these tools and their users, on contexts in which they can be applied as well as current limitations. As Table 12.2 shows, evidence of the impact of any such tool or approach is often still limited. But in many cases, evidence of positive impact and effectiveness is emerging. Some, such as Amanda Cooper and colleagues (Chapter 9) also emphasise the difficulty of determining the impact of some approaches and call for developing a broader understanding of impact that goes beyond traditional metrics and indicators.

Table 12.2. Tools showcased in this report that can support a culture of thoughtful engagement with evidence

Tool/programme/strategy	Purpose/description	Context	Evidence on effectiveness/ impact	Source in the report
Competence framework for policy makers and researchers (Joint Research Centre)	To inform human resource strategies: recruitment, skills and capacity development in policy and research organisations.	Policy/research	No (pilots in progress)	Chapter 3; Box 3.2
Nesta programmes for research engagement	Learning or training programmes for policy makers to develop skills and knowledge to engage with research.	Policy	Yes	Box 3.3
New Zealand Policy Project	Frameworks and repository of policy development methods to support policy making.	Policy	No	Box 3.3
Quality Use of Research framework	Framework that defines and elaborates what "quality use of education" means and its individual, organisational and systemic enablers. It can be used for self-reflection and collective professional learning in schools. The framework has accompanying support tools.	Practice (in this report applied for policy)	Emerging	Chapter 4
OECD Strategic Education Governance framework	A normative framework that defines six elements of effective governance. Designed to help countries meet modern education governance challenges.	Policy	No	Chapter 5
Collective evidence appraisal by stakeholders	A group of approaches used primarily in the healthcare sector that aim to structure stakeholder conversations around the best available evidence. Intended to inform policy making in a controlled way on a pre-determined topic.	Policy	Yes	Chapter 6; Box 6.1
Norway Strategy for Educational Research	To raise the quality and scope of education research in selected areas; to promote user participation and practice-oriented issues in research; to stimulate method and theory development.	Policy/research	Yes	Chapter 7; Box 7.1
Norway Public Sector PhD Scheme	To expand research activities in public sector bodies, increase researcher recruitment within the public sector and to promote greater collaboration between academia and the public sector.	Policy/research	Emerging	Chapter 7
Learning conversations	A form of professional learning for practitioners that involves identifying and defining a specific problem and engaging with research, data and other forms of evidence to design and evaluate an approach/practice to overcome the problem.	Practice	Emerging	Chapter 8

Tool/programme/strategy	Purpose/description	Context	Evidence on effectiveness/ impact	Source in the report
Arts-based approaches to research co-production and knowledge mobilisation	Use of a wide range of arts-based activities (e.g. visual arts) at different stages of the research process as a mechanism to improve research engagement among participants.	Practice/research	Emerging	Chapter 9
The virtuous diamond framework of "deep users" of research	Framework outlining four organisational and interconnected dimensions (culture, structure, leadership and processes) that promote deep use of research in schools.	Practice	Emerging	Chapter 10
Policy Profession Standards in the United Kingdom	Professional standards for civil servants defining the range of skills expected at different levels. Arranged under three pillars.	Policy	No	Chapter 11, Figure 11.2
Collaborative Inquiry Network methodology	Support teachers in collectively addressing a practice-based challenge through inquiry and engagement with data and research.	Practice	Emerging	Chapter 11, Figure 11.3

Note: This list is non-exhaustive.

The richness of structures, processes, and supporting tools and approaches implemented with promising results in systems shows the progress made in closing the gaps between research, policy and practice. These tools, frameworks and approaches should be better leveraged. Often, innovation in such tools has not translated into wider testing or uptake in or across systems, suggesting there is scope for peer learning among countries and actors. An important next step would be to identify how systems can be supported in trialling these in their contexts. Ultimately, trialling novel tools should be accompanied by rigorous evaluation that will allow further insights into impact and effectiveness, including transferability across different contexts.

Leadership for research engagement

Leadership is key in role modelling behaviours, enabling the necessary conditions and forging connections for research engagement. Remarkably, only a minority of ministries reported that school leadership is supportive of research use (Chapter 3). This report shed light on the role of leadership in driving a culture of research engagement within and across organisations, but also crucially, at the system level. As the England case study in Chapter 11 noted, evidence-informed learning and school improvement at scale require sophisticated forms of system and network leadership. Across chapters, there is insight into what strong leadership in a policy or practice organisation might look like and how leaders can organise to promote research engagement. Chapter 11 explored the theme of leadership in depth through five case studies drawn from different national contexts.

Leaders as drivers of research engagement and innovation

A culture of research engagement and learning is connected to a culture of innovation and willingness to test new practices or approaches that stem from research evidence. Leadership plays a crucial role in ensuring that individuals in policy or practice organisations feel able to experiment with new approaches. Civil servants can perceive uncertainty as an obstacle to the development and agreement of policy proposals, but technical rationality in bureaucratic organisations can be an inappropriate response to problems that are ill-structured, messy or wicked (Sedlacko, 2016[12]). High levels of trust and strong signals from leaders that innovation is encouraged can help build a strong culture of research engagement, as underlined in most chapters of this report. In Chapter 11, the example given in the Norwegian municipality case study illustrates this very well. In this case, local governance actors in the Stavanger municipality of Norway work together in highly collaborative ways to promote research engagement among

practitioners, and schools are actively encouraged to work together to strive for system-level improvement, thus also focusing on collaborating rather than competing. Leaders need to make sure that innovation processes systematically engage with research, and that any resulting experimentation is accompanied by evaluation to the extent possible. Good leadership drives research and innovation processes towards systematic improvement and establishing a culture of research engagement within an organisation or system.

Leaders as role models

It is also clear that leaders can model what "thoughtful engagement" with research looks like. This involves taking time for professional development to build the necessary skills for research engagement but also demonstrating that working thoughtfully with evidence can be highly nuanced and is rarely straightforward. In the England case study (Chapter 11), the authors draw on the concept of sensemaking (Weick, 1995[13]) that emerged from organisational studies: leaders make sense of complex environments as an ongoing process and through their interactions with this environment. As such, they develop their own knowledge of what thoughtful engagement with research entails and are able to share this knowledge with other practitioners. Chapter 10 describes how school leaders are responsible for setting a vision for evidence-informed improvement, demonstrating their availability and openness to staff, and modelling vulnerability by being candid about their own learning and development trajectories.

Leadership and systems thinking

One of the ambitions of this report has been to bring to life the concept of a "systems approach" by providing concrete insights into what it might entail. Chapters across the report demonstrated the mutual influences between organisational and system-level cultures. Making this link a virtuous, rather than a vicious, circle requires coherent leadership across the different levels with a shared vision and a focus on research engagement.

System leadership at the national level emerged as critical to ensuring the conditions for thoughtful engagement with research in policy and practice. Systemic factors, such as a competitive school context, a strong focus on accountability to the detriment of innovation, and inappropriate expectations and incentives at the system level act as obstacles to all efforts to enhance research engagement. Chapter 8 and the case studies on England and Chile in Chapter 11 demonstrate this very clearly. Conversely, a system-level vision with sufficient resources, incentives and opportunities can strongly reinforce research use in schools and policy organisations, as shown in the Norway (Stavanger) and Wales case studies (Chapter 11), for example.

Chapter 11's conclusion points to the importance of creating coherence across the different levels of leadership. School leaders can be more effective in building a culture of research engagement in their schools when the appropriate conditions are ensured by local and national-level leadership. In decentralised systems, local government leaders such as municipalities, play a key role in capitalising on national policies and translating them into appropriate local conditions. They can also advocate for appropriate conditions when these are not yet in place at the national level. School network system leaders also navigate the conditions and constraints that are ultimately defined elsewhere in the system in an effort to make the best out of the given possibilities.

In sum, while individual elements of leadership (e.g. leadership in schools, networks and local policy authorities) can be promising, a research-engaged culture benefits strongly from coherence across the different levels. A systems approach in practice, therefore, requires strong connections between leadership at different levels.

The future of research generation, mobilisation and engagement

This report explored how education systems can develop a culture of research engagement in practice and policy organisations and at the level of the system. While major gaps remain with respect to ensuring key conditions for research engagement, including allocating resources, introducing appropriate incentives and providing suitable learning opportunities for all actors, there are also promising developments. The report showcased numerous examples of structures, processes and concrete tools that support research engagement at various levels.

The first report of the OECD *Strengthening the Impact of Education Research* project presented cutting-edge research on knowledge mobilisation. It called for more research in this field to better understand which structures, processes and practices are effective and how we can support countries and organisations in implementing them (OECD, 2022[4]). Gaps in our knowledge about strengthening research generation, mobilisation and engagement undoubtedly still exist, and this report indicated a few. In particular, this report focused less on the culture, learning and leadership of research and intermediary organisations. While the amount of knowledge and resources available in this field has been steadily growing, an important next step would be to better leverage this knowledge.

A key starting point would be to adapt, trial and evaluate the practices that have shown to be promising. With respect to leveraging knowledge, the call for more and better evidence syntheses also holds for the field of knowledge mobilisation. Systematic reviews and a structured repository of evidence in this field could help countries and actors engage with this research and improve the culture of research engagement in an evidence-informed way. It could also help researchers to identify knowledge gaps more clearly and co-ordinate efforts to address them.

With respect to existing practices, it would be desirable to inventory them – including structures, processes, tools and strategies – and categorise them in terms of their purpose and context, and regularly update information on how they have been used and what results they have produced. Notably, adapting and testing these across country contexts and sectors – education has a lot to learn from health and other sectors (OECD, 2022[4]) – could help further build the knowledge base. We have also seen promising examples of using tools developed for practice in the policy context and vice versa.

However, we must emphasise – based on robust evidence – that a research repository and an inventory of practices will not be sufficient to mobilise this knowledge. A systems approach will involve building relationships internationally and enabling quality interactions and peer learning among actors who wish to build a stronger culture of research engagement in education. The project's two learning seminars demonstrated the potential of such interactions and mutual learning among policy makers for facilitating system change. Generating quality interactions and learning is also needed among intermediary actors that, in many systems, are weaving the connecting tissue between research, policy and practice. There have been increasingly more initiatives in this direction in recent years (e.g. Transforming Evidence Network, the Education Endowment Foundation's Global Partnership, the European Commission's Learning Lab and more). According to this report, a systems approach would involve mapping and supporting these initiatives, and engaging them in collective learning and knowledge building.

Finally, we would like to remind the readers that the goal of strengthening research generation, mobilisation and engagement is to improve education systems and ultimately student learning. To ascertain that we are achieving this goal, we need to collectively make a stronger effort to measure and systematically monitor the impact of initiatives. This is a challenging endeavour given the multitude of factors interacting in complex education systems. A better understanding of the impact of knowledge mobilisation activities of intermediary organisations (Torres and Steponavičius, 2022[14]) will be the OECD *Strengthening the Impact of Education Research* project's next step in this direction.

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Educational Research and Innovation

Who Really Cares about Using Education Research in Policy and Practice?

DEVELOPING A CULTURE OF RESEARCH ENGAGEMENT

In today's dynamic and rapidly evolving world, evidence-informed decision-making has emerged as a cornerstone in guiding effective education policy and practice. In particular, creating a culture of research engagement is often highlighted as a key ingredient to strengthening the impact of research. However, it is not always clear how that works in practice.

The publication provides analyses of data collected from more than 30 education systems. It delves into how systemic and organisational capacity for thoughtful engagement with research can be built into policy and practice. It also contains concrete examples of building a culture of research engagement by presenting diverse case studies, analyses, tools and processes. It is intended as a practical resource for policy makers, educational leaders, teachers and the research community to stimulate reflection and guide their efforts to developing a culture of research engagement in education.

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