

# **5**

## **Facilitating research use: Scary Barriers (and Super Mechanisms)**

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This chapter presents the results of the OECD *Strengthening the Impact of Education Research* policy survey with regard to the various mechanisms countries are using to facilitate research use. It presents a framework for classifying factors that influence research use, based on a review of literature. It then describes and contrasts mechanisms and barriers reported by the 37 survey-participating education systems. The chapter concludes by noting the importance of system-level coordination of the various mechanisms and research production.

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## Introduction

At the beginning of the 20th century, John Dewey, one of the founding fathers of the scientific tradition in education, considered that scientific knowledge had the enormous mission of influencing teachers' practices. But the abstract world of researchers, their simplification of the classroom for the study of phenomena, and the intricate social world that teachers live in made such study complex and challenging (Berliner, 2008<sup>[1]</sup>).

Close to 120 years later and despite a constant growing body of literature on the benefits of evidence-based practice and policy making for education, educational research remains under-used. Instead, what has become clear is that research alone does not inform or have direct effects – such as immediate adoption – on practice and policy (Jones, Procter and Younie, 2015<sup>[2]</sup>; Levin, 2011<sup>[3]</sup>). Communicating research findings is not enough to increase their use (Langer, Tripney and Gough, 2016<sup>[4]</sup>). And promoting the use of research is not the same as ensuring it (Fazekas and Burns, 2012<sup>[5]</sup>).

Governments around the world have much enthusiasm and expectations about educational research providing teachers “with evidence about what works” and thus improving the quality of teaching (Cain, 2015, p. 1<sup>[6]</sup>). However, this is not an easy task. Despite strong interest in research findings, decision-making practitioners and policy makers do not appear to be heavy consumers of education research, especially in its original format (Levin, 2013<sup>[7]</sup>). Many countries in the OECD have invested in remedying this situation in the past decade. As mentioned in the introduction to this volume, efforts have included the production of evidence synthesis for teaching practice and schools; partnerships between practitioners, policy makers and researchers for the sustainability of knowledge generation; and capacity building for research use.

The gaps between research production and its use in policy and practice (the so-called research-policy and research-practice gaps) together with interventions to bridge them have been the subject of recent research in a variety of sectors, including health, education, criminal justice and environmental conservation (Walter, Nutley and Davies, 2003<sup>[8]</sup>; Nutley, Walter and Davies, 2009<sup>[9]</sup>; Humphries et al., 2014<sup>[10]</sup>; Oliver et al., 2014<sup>[11]</sup>). Knowledge mobilisation in the education sector refers to processes aimed at improving the use of evidence to inform school leaders and teachers' practices, and policy makers' decisions. It has become a research field in its own right, and yet, the mechanisms that effectively mediate between research, practice and policy are not yet properly established (Révai and Guerriero, 2017<sup>[12]</sup>).

It is now time to take stock of the various mechanisms that scale up research use, making them accessible to educational researchers, policy makers, school leaders and teachers for effective evidence-based practices and policies (Jones, Procter and Younie, 2015<sup>[2]</sup>). Collaborative mechanisms that increase research use are also included. The momentary, unique and specific nature and context of each system makes it difficult to build generally applicable solutions. But common problems exist across different contexts and the sharing of this knowledge can reduce redundancy (Boh, 2007<sup>[13]</sup>).

This chapter presents factors that facilitate or hinder the use of educational research in policy making and in school and teaching practice. It starts by defining key concepts and suggests an overarching framework based on a cross-sectoral literature. This is followed by the presentation and analysis of the OECD *Strengthening the Impact of Education Research* policy survey results on mechanisms of and barriers to the use of educational research in national and sub-national systems. The last section discusses coordination of the educational research production system and identifies potential risks. The chapter ends with a brief conclusion that summarises the main findings.

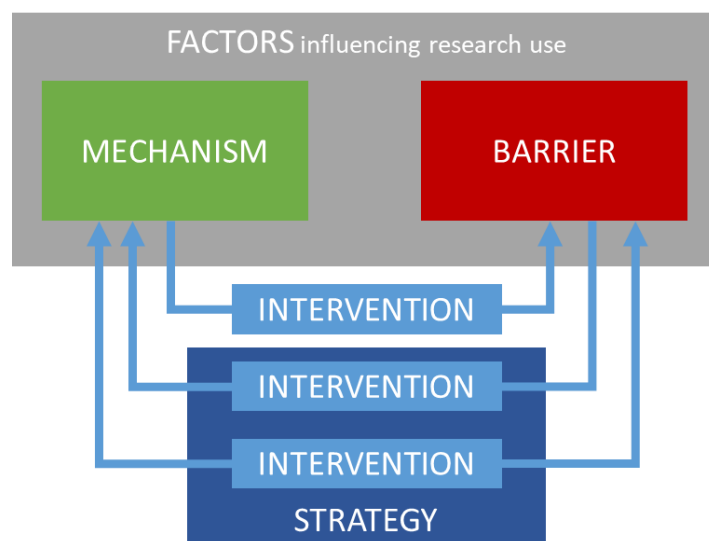
## What influences the use of research? Framing the discussion

The use of evidence in educational policy and practice depends on a variety of elements (Levin, 2013<sup>[7]</sup>). The literature defines and uses concepts such as factor, mechanism, facilitator, intervention and strategy in a variety of heterogeneous ways that commonly overlap each other. The following definitions attempt to introduce more uniformity into the understanding and use of these concepts in this chapter.

- **Factors** are processes or means by which the particular activity influences research use. Mechanisms enable and barriers hinder the use of evidence in policy making and practice (Gough et al., 2011<sup>[14]</sup>). These factors can be intentionally created, such as mechanisms specifically designed to bridge the gap between research and its use. They can also be unintentionally created, such as organisational structures or cultures that may act as mechanisms or barriers without this being its original, intentional goal. They can also be formal or informal.
- **Intervention** is a deliberate action or plan to enhance the use of research evidence, addressing genuine barriers to research uptake and drawing on mechanisms which are likely to affect it (Oliver et al., 2014<sup>[11]</sup>).
- **Strategy** is a concrete and wider action plan commonly based on more than one of these interventions in order to encourage better use of research (Nutley, Walter and Davies, 2009<sup>[9]</sup>). This can also be the other way around, with designed interventions based on a previously established broad strategy.

Figure 5.1 represents graphically these concepts, and their link to each other, to ease their comprehension.

Figure 5.1. Mindmap of concepts



### ***Mechanisms and barriers influencing research use***

Mechanisms vary according to the different levels at which they act: individual, organisational and system (Nutley, Walter and Davies, 2009<sup>[9]</sup>). On the one hand, organisational mechanisms, also referred as institutionalised mechanisms, are collective and formally embedded into the processes, structures and culture of organisations. These mechanisms enable a more effective mobilisation of knowledge to a larger number of individuals and allow organisations to select the knowledge to be mobilised. They are, however, costly in terms of time and resources. On the other hand, individualised mechanisms are casual, unstructured, and informal. These mechanisms have limited reach as they are unique to individuals or

small groups but free of the organisations' interests and structured forms. For the same reasons, they can suffer from problems of scalability (Boh, 2007<sub>[13]</sub>).

Another widely used categorisation of knowledge mobilisation activities is based on three conceptual approaches described by Best and Holmes (2010<sub>[15]</sub>) (see Chapters 1, 2 and 6 for further details): linear, relational and systems. Linear models focus on the dissemination of research findings. This includes making research available for users in terms of format and accessibility. Relationship models emphasise strengthening relationships among stakeholders in order to facilitate the research-practice-policy link. And finally, systems models recognise that actors are part of a complex system. They aim to activate this entire system rather than just a few elements of it.

Humphries and colleagues' (2014<sub>[10]</sub>) categorisation of factors fairly and consistently represents the variety of levels present in the research production and use system. For the purposes of this chapter, this framework has been adapted and enriched with the work of other authors who have studied factors of research use beyond the healthcare sector to propose a new typology (see Table 5.1). It broadens the definition and applicability of the categories in the education sector and considers both practice and policy contexts. This proposed typology and the above-mentioned Best and Holmes' conceptual approaches will frame further analysis in this chapter.

**Table 5.1. Typology of factors influencing research use**

Type	Definition
Information	Factors related to the existence and quality of relevant research evidence, its availability, accessibility, format, presentation, and the characteristics of its level and channels of circulation and dissemination.
Interaction	Factors related to the contact, collaboration and flow of information between researchers, practitioners and policy makers through formal or informal, intended or unplanned relationships, as well as the values associated with them, such as trust and mutual respect.
Individual characteristics	Factors related to researchers' understanding of the policy and practice processes and context, and to practitioners and policy makers' skills and capacities to use and apply research, and their formal education and/or training experience for this. It may also consider the presence of other actors influencing the use of research evidence.
Structure and organisation	Factors related to the existence of system and/or organisational support for the production and use of research, manifested in their formal structure (e.g. provision of time, funding, learning opportunities, formal training) and/or processes (e.g. the presence of guidelines and financial incentives).
Culture	Factors related to: researchers, practitioners and policy makers' priorities and their alignment; practitioners and policy makers' attitudes towards research and will to use it; and system and/or organisational values, principles, beliefs, and valorisation of research production and use.

Source: Adapted from Humphries, S. et al. (2014<sub>[10]</sub>), "Barriers and facilitators to evidence-use in program management: A systematic review of the literature", <https://doi.org/10.1186/1472-6963-14-171>.

Annex Table 5.A.1 summarises the mechanisms and barriers identified by the literature and classified by the proposed framework. It is important to mention that these categories are not exclusive as a mechanism or a barrier can be classified in more than one category, depending on the lens through which it is studied.

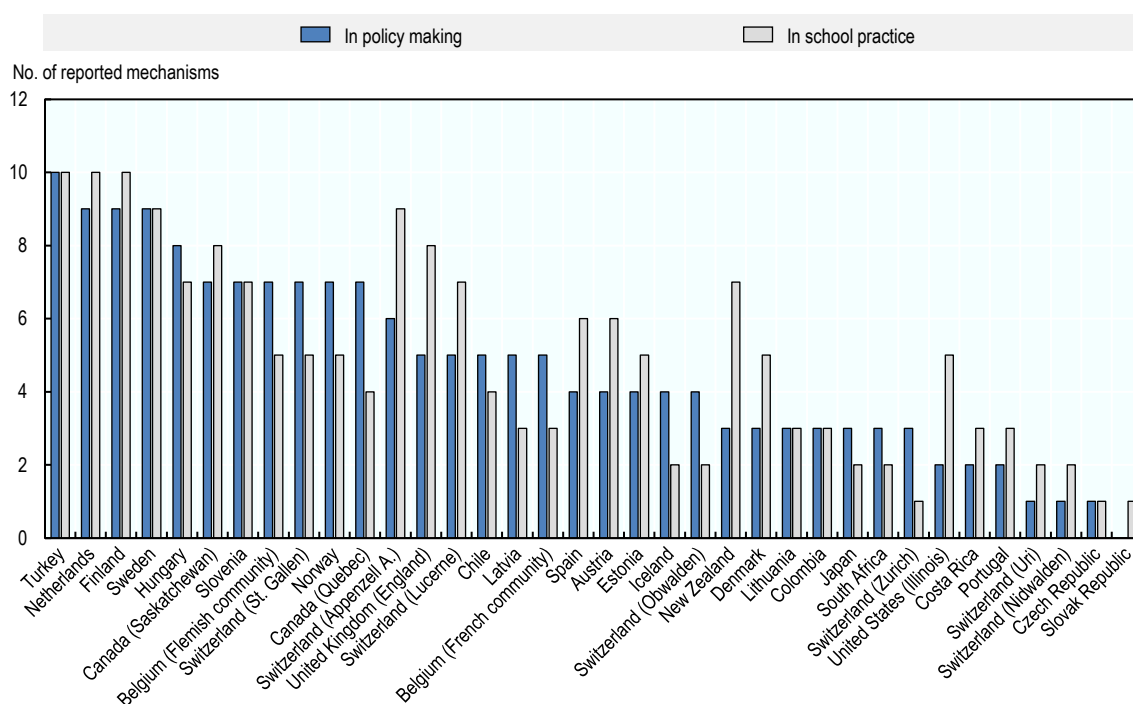
## How do systems facilitate the use of research? Findings from the survey

The presence of mechanisms and barriers provides valuable information on the level of relevance and priority research, research use, and research mobilisation have for different education systems and their communities. Few mechanisms and many barriers indicate that facilitating research production and use is a low priority for an education system (Levin, 2011<sub>[3]</sub>).

*Strengthening the Impact of Education Research* surveys 37 education systems in 29 countries about the production and use of educational research in policy making and practice. Six countries were selected for further data collection through semi-structured follow-up interviews. The following three sections analyse the results related to factors that facilitate or hinder the use and production of education research in these systems.

The survey proposed a dozen mechanisms for and barriers to research use in participating systems. These are classified conceptually based on the work of Best and Holmes (2010<sup>[15]</sup>) and the proposed framework of the preceding section in Annex Table 5.A.2 and Annex Table 5.A.3, respectively.

**Figure 5.2. Number of mechanisms by system, 2021**



Note: Data refers to the number of reported mechanisms out of a dozen options, by system and context. Data was collected at national and sub-national levels.

"Appenzell A." refers to the Swiss canton of Appenzell Ausserrhoden.

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

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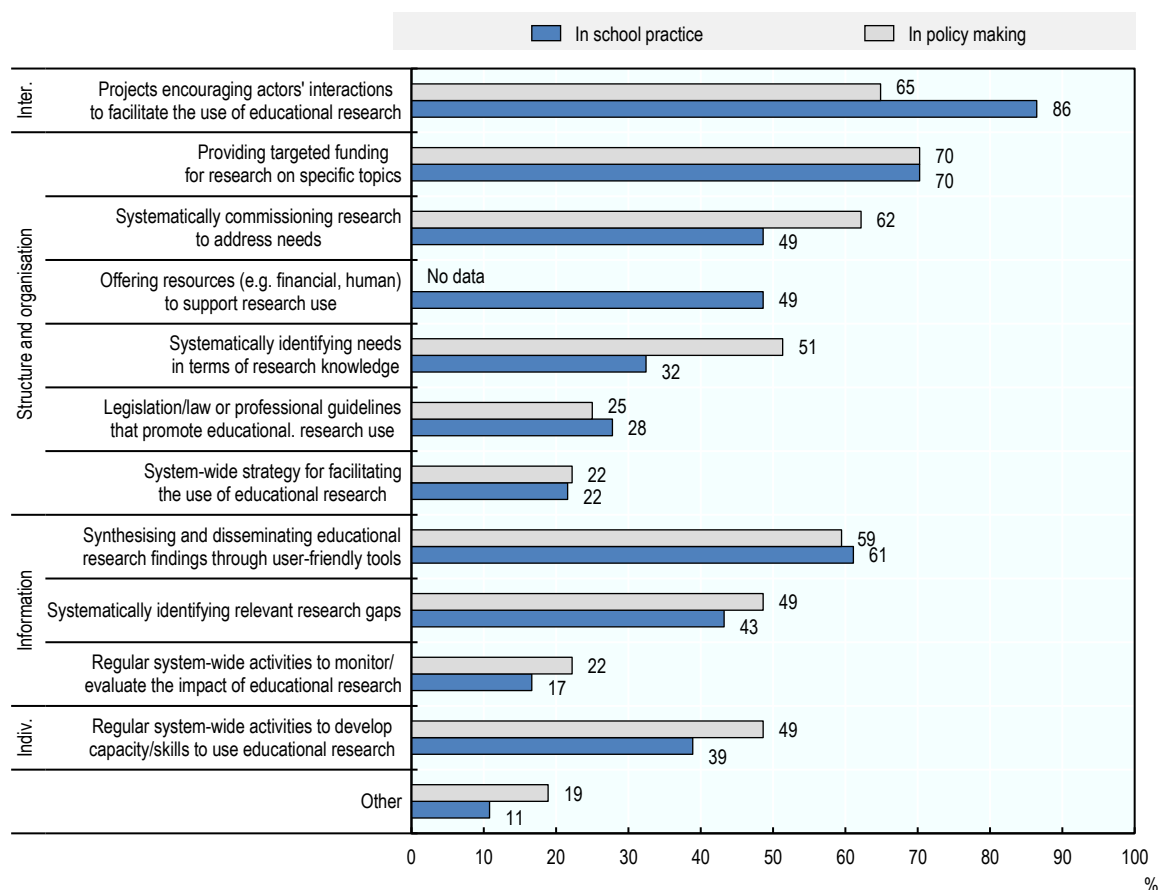
Survey-participating education systems reported an average of 4.7 mechanisms in policy and 4.9 in practice out of a dozen suggested options, with more systems reporting more mechanisms in practice than in policy. Although it is a small difference, this could be linked to the slightly stronger focus on facilitating research use in practice as opposed to policy in the past 15 years (see also Chapter 1). For example, New Zealand reported (in a follow-up interview) that this stronger focus could relate to the larger amount of funds available to improve practice. Historically, there have been more activities, projects and studies on research use in practice than policy.

However, results from the survey showed strong dispersion in the number of reported mechanisms (see Figure 5.2). Whereas Turkey, the Netherlands, Finland and Sweden declared at least nine mechanisms


that facilitate research use in both policy and practice, systems like the Swiss cantons of Uri and Nidwalden, the Czech Republic and the Slovak Republic declared two or fewer mechanisms for both. Within the same systems, there is some strong variation: on the one hand, New Zealand, England (UK), the Swiss canton of Appenzell Ausserrhoden, and Illinois in the United States reported significantly more mechanisms in practice than policy. On the other hand, Quebec (Canada) reported significantly more mechanisms in policy than practice.

### Types of mechanisms

Figure 5.3. Presence of mechanisms facilitating the use of educational research, 2021



Note: Data refers to percentage of systems reporting the existence of a given mechanism, by type of factor and context. Data was collected at national and sub-national levels. Data was not collected for the mechanism "Offering resources to support research" in policy making. "Indiv." refers to mechanisms targeting individuals and "Inter." refers to mechanisms aiming to facilitate interaction between individuals. Source: OECD *Strengthening the Impact of Education Research* policy survey data.

StatLink  <https://stat.link/jswge5>

One of the most reported mechanisms facilitating evidence use are projects encouraging actors' interactions (see Figure 5.3), which is line with the reviewed literature (Oliver et al., 2014<sup>[11]</sup>). This mechanism has a greater presence in school and teaching practice than in policy by more than 20 percentage points. This suggests that policy makers, despite opportunities to interact with researchers, still have fewer opportunities than practitioners do. The New Zealand Teaching and Learning Research Initiative is an example of the efforts encouraging research-practice connections (see Box 5.1).

Interaction has been reported to generate an increase in research impact but differences in culture, goals, timescales and information needs remain barriers (Walter, Nutley and Davies, 2003<sup>[16]</sup>). Interactive mechanisms, although promising and necessary, are not sufficient for increasing evidence use. They must be supported by an increase in motivations, opportunities and capacities for the use of evidence in practice or have a more comprehensive strategy (Langer, Tripney and Gough, 2016<sup>[4]</sup>).

Capacity-building activities are fewer among surveyed systems, with about half of systems reporting them in policy and only 39% in practice. In contrast to projects encouraging interaction, capacity-building activities are slightly more common in policy making than in school practice. Systems seem aware of the co-dependence between these two mechanisms. Those reporting projects encouraging interaction between actors reported more regular system-wide activities to develop skills and capacities for research use in both policy and practice.

### Box 5.1. Teaching and Learning Research Initiative in New Zealand

New Zealand's *Teaching and Learning Research Initiative* (TLRI) is a government fund established in 2003 for collaborative research about teaching and learning in the early childhood, school and tertiary sectors. It aims to enhance the connections between educational research and practice, to accumulate a body of knowledge linking teaching and learning, and to build research capacity in learning and teaching. Their 2021 funding of NZD 1.5 million was allocated to five projects.

The TLRI's objectives are achieved through research projects awarded with TLRI funding if they show that a robust partnership between researchers and practitioners is at the core of the envisioned project. Thus, it enables practitioners to critically reflect on their work and researchers to gain insight into the context and challenges of teaching and learning. The funded-project leaders are key actors as they are responsible for involving researchers and practitioners, shaping their research and practice capacities and encouraging a true co-production of research.

One of their most recent funded projects is focused on transforming the pedagogy of Early Child Education teachers by improving sustainable and comprehensive outcomes for indigenous infants and toddlers. It aims to develop a rigorous and robust conceptual framework of pedagogy that supports the cultural well-being and the sense of belonging of Samoan infants and toddlers. The project is a collaboration between the University of Auckland, Massey University, and Samoa Aoga Amata I Incorporated (SAASIA), an organisation comprised of early childhood centres nationally, representing Auckland, Napier, Palmerston North, Wellington and Christchurch.

Currently, the Teaching and Learning Research Initiative encompasses 167 funded projects, more than 150 published research reports, and is composed of over 400 researchers and practitioners. Its impact, measured through a survey answered by a randomly selected sample of past research projects and some additional interview data, is mainly self-reported, with participants describing a profound and positive change to their practices.

Source: Hipkins, R., J. Whatman and R. Felgate (2017<sup>[17]</sup>), *Exploring the Impact of the Teaching and Learning Research Initiative*; TLRI (2022<sup>[18]</sup>), *Teaching and Learning Research Initiative*; TLRI (2021<sup>[19]</sup>), "Pepe meamea in the spirit of the collective: Embedding Samoan indigenous philosophy in ECE for Samoan children under two", <http://www.tlri.org.nz/tlri-research/research-progress/ece-sector/pepe-meamea-spirit-collective-embedding-samoan-indigenous> (accessed on 20 April 2022).

Capacity-building interventions have significant positive benefits and outcomes on engagement in and with research for both pupils and teachers. In particular, studies have positively linked these strategies with pupils' motivation, their attitudes to subjects, test performance, specific skills, pupils' self- and group-organisation, their approaches to collaboration and selection of learning and problem-solving strategies

(Cordingley, 2016<sup>[20]</sup>). These interventions have also reportedly improved decision makers' skills to access and make sense of evidence. Nevertheless, these effects are, once again, conditioned by intervention design (Langer, Tripney and Gough, 2016<sup>[4]</sup>).

Another widely reported mechanism was targeted funding for research on specific topics: In both policy and practice, 70% of respondents reported the existence of this mechanism within their system. Interestingly, the literature does not report the use of targeted funding in educational systems as a mechanism to promote research use but, rather, the lack of funding mechanisms as a barrier, although not widely (Oliver et al., 2014<sup>[11]</sup>).

Other mechanisms in the "Structure and organisation" category have varying results among surveyed systems. Strategies formalising and embedding research-use mechanisms within existing decision-making structures and processes have been reported to have positive effects although the evidence is not robust enough (Langer, Tripney and Gough, 2016<sup>[4]</sup>). In that line, South Africa reported during follow-up interviews that until they become embedded in organisational processes, projects enhancing the use of research in education have little influence on policies. Thus, support at all hierarchical levels is a key condition of the success of this type of project.

The majority of identified mechanisms in a 2014 systematic review in health sector organisations (Humphries et al., 2014<sup>[10]</sup>) was informational. Although such mechanisms are also highly reported in the OECD survey of the educational sector, they are not as dominant. The presentation and circulation of research findings in suitable formats is reported as a common existing mechanism in both policy making and school practice, with 60% of the systems declaring its presence. One of the best-known examples of this mechanism is the British Education Endowment Foundation's Teaching and Learning Toolkit (see Box 5.2). The other two informational mechanisms – systematically identifying research gaps and system-wide monitoring of research impact – were rarer. This might be caused by both mechanisms referring to regular, systemic activities whereas in some systems these mechanisms may only exist sporadically.

### Box 5.2. EEF's Teaching and Learning Toolkit

The *Teaching and Learning Toolkit* of the British Education Endowment Foundation (EEF) aims to support teachers and school leaders' efforts to improve learning outcomes, particularly for disadvantaged children, through the provision of summaries of education research in a systematised and accessible way.

The Toolkit synthesises research evidence from 30 pedagogical, institutional and relational approaches focused on enhancing teaching and learning at classroom and school levels in general. The studies are selected based on a systematic review, which stipulates the inclusion criteria in advance in order to avoid biased results. They are continuously updated in light of new research evidence, making it a live and dynamic resource.

The summary of evidence on each approach includes:

- Description of the approach.
- Key findings.
- Average impact on attainment, measured by the number of months of additional progress made by pupils.
- Strength of evidence measured by the number of studies satisfying the inclusion criteria
- Average cost of a given intervention.
- Recommendations on implementation.



The Toolkit is meant to be a starting point for discussion between education professionals, relying on their judgement and expertise about what works in a particular school context and taking the Toolkit's interpretations with caution. This is complemented by other resources. As of 2017, 70% of secondary-school leaders used it to inform their decision making.

Source: EEF (2017<sup>[21]</sup>), "EEF launches updated Teaching and Learning Toolkit", <https://educationendowmentfoundation.org.uk/news/eef-launches-updated-teaching-and-learning-toolkit> (accessed on 28 March 2022); EEF (2022<sup>[22]</sup>), *Teaching and Learning Toolkit*, <https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit> (accessed on 28 March 2022);

While informational factors are undoubtedly necessary for research use, by themselves they do not lead to improved use of evidence. Timely access to good quality and relevant research, and collaboration and relationships between research producers and users also have to be considered (Langer, Tripney and Gough, 2016<sup>[4]</sup>).

Systems tend to have the same mechanism in both policy and practice although this depends on the mechanism in particular. Projects that encourage interactions between actors, provide targeted funding for research, and generate tools based on research findings tend to exist in both contexts. This tendency could suggest that these reported mechanisms are comprehensive in both contexts. In contrast, regular system-wide activities to develop skills and capacities to use research or monitor and evaluate research impact tend to only exist in either policy or practice.

### ***Mechanisms by approach: Linear, relational and systems***

Reported mechanisms facilitating research use vary based on their approach as described by Best and Holmes (see Chapter 2 for a more detailed description).

Linear mechanisms such as the systematic identification of needs in research knowledge and the commissioning of research to address these needs are more widely present in policy making than in school and teaching practice. Surprisingly, respondents reported commissioning research more frequently than the systematic identification of needs in both policy and practice. This suggests that the determination of education systems' needs, which guides their demand for research, is not based on direct information from those who will benefit from it, such as students and teachers. When there is no systematic mapping of needs, questions arise about the basis of commissioned research and whether it is aligned to real needs.

System-level activities, and particularly system-wide activities (highlighted in Figure 5.3), are the least mentioned in both policy and practice. Only one-fourth of education systems reported the existence of legislation, laws or guidelines promoting the use of research while one out of every five systems has regular system-wide activities to monitor and/or evaluate the impact of educational research. Moreover, only 22% of respondent systems reported having a system-wide strategy for facilitating research use in policy and this proportion is the same in practice. Interestingly, systems that have a system-wide strategy reported a greater number of mechanisms than those without.

Linear mechanisms of dissemination and diffusion are incorporated into relationship mechanisms, which are the base for systems thinking (Best and Holmes, 2010<sup>[15]</sup>). But some education systems still lack basic linear mechanisms such as identifying actors' needs, commissioning research based on these needs and disseminating research findings. This is the foremost and most substantial barrier hindering the use of education-related evidence in policy and practice.

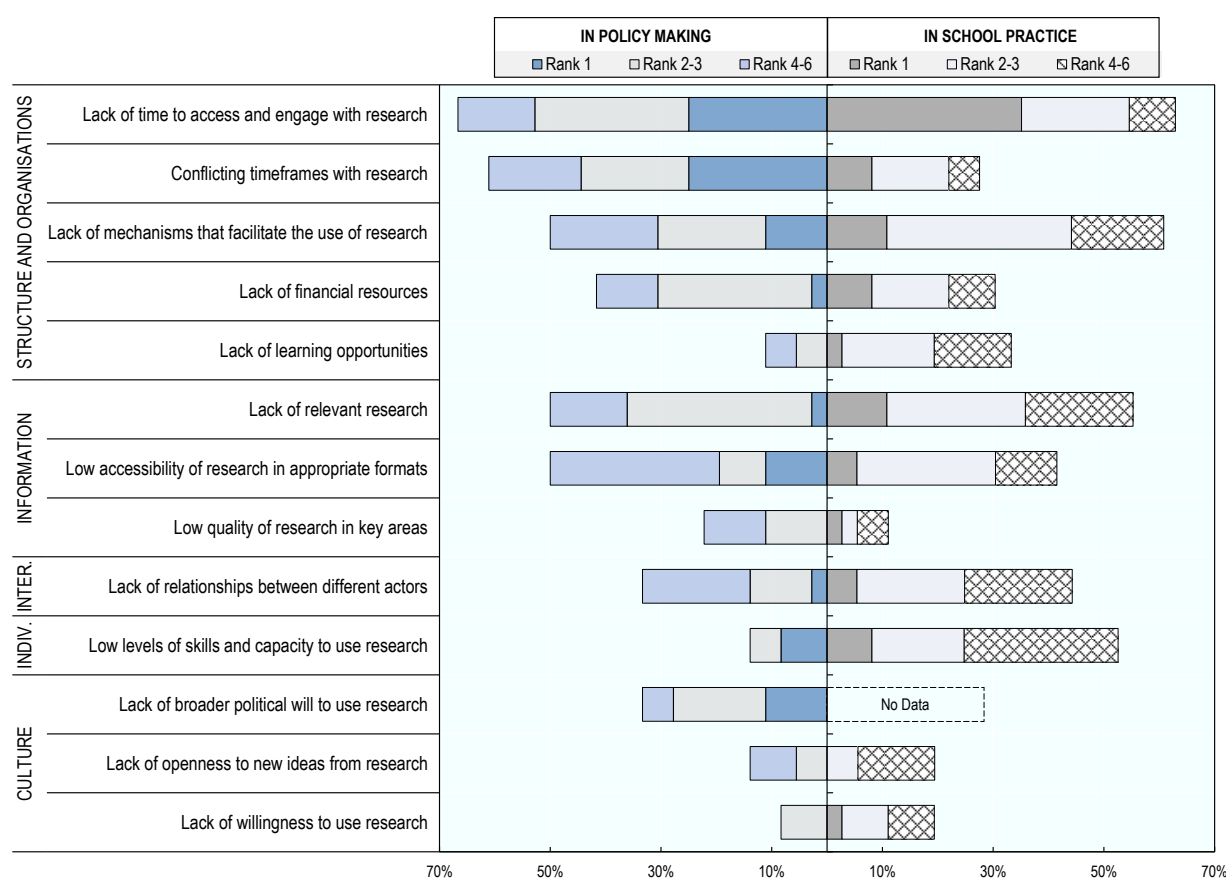
In sum, efforts lean towards generating interactions between research producers and users, and more so in practice than in policy. However, surveyed systems tend to not complement this with capacity-building activities and learning opportunities, which would improve the use of evidence (Langer, Tripney and Gough, 2016<sup>[4]</sup>). Despite some systems reporting the presence of reasonable number of mechanisms,

there remains a lack of system-wide strategies which could serve to enhance their coordination. This, along with systems reporting the identification of research needs more than commissioning research to address these needs suggests an insufficiently comprehensive strategy of effort to improve educational research use.

## What prevents systems from using evidence? Findings from the survey

Education systems were asked to rank three to six barriers out of a dozen suggested options in order of importance. These barriers are classified by their conceptual approach based on the work of Best and Holmes (2010<sup>[15]</sup>) and by the proposed framework in Annex Table 5.A.2 and Annex Table 5.A.3, respectively. As with mechanisms, barriers and their perceived existence and relevance vary in relation to the category they belong (see Figure 5.4); their conceptual approach (see Table 5.2); and context.

Figure 5.4 Presence and relevance of barriers to the use of research, 2021



Note: Data showing the percentage of systems ranking the given barrier, by context, type of factor and rank range. Data was collected at a national and at a sub-national level. "Lack of broader political will" was not offered as an option in practice.

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

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## **Types of barriers**

Overall, the most widely reported barriers are linked to structures and organisation, followed by information-related factors. Interestingly, factors related to the culture of research use are perceived as less of a barrier in most education systems.

Low levels of skills and capacities in using research and the lack of learning opportunities are both perceived as being more of a barrier in practice than in policy. However, there are education systems that consider that there is a lack of training and learning opportunities for both practitioners and policy makers. This is true of Slovenia, which reported it during their follow-up interview.

Overall, the presence and relevance of both barriers and the perceived existence of corresponding mechanisms seem to match. These barriers are more widely reported in practice, and capacity-building mechanisms have a weaker presence, precisely, in practice. However, at a country or system level, there was no systematic matching between capacity-building mechanisms, and the lack of capacities and learning opportunities as perceived barriers. Some education systems perceived these barriers even though they have capacity-building mechanisms. This was true for both practice and policy.

Besides the lack of political will to use research, which was mentioned by 32% of education systems, cultural barriers were not reported in great number by respondents. This contrasts with some of the literature suggesting that the main barriers to research use arise in cultures that do not foster its use (Rickinson et al., 2020<sub>[23]</sub>). In that vein, during their follow-up interviews, New Zealand reported that one of their main interests was to develop its culture into an evidence-based one. Slovenia noted that they were reshaping the thinking of their Ministry of Education along the same lines.

## **Barriers by approach: Linear, relational and systems**

With respect to the types of approach as described by Best and Holmes (2010<sub>[15]</sub>) (see Table 5.2), system-level barriers are the most mentioned and relational barriers the least in both policy and practice. Nevertheless, basic linear factors such as little availability of relevant research and low accessibility to appropriate formats were still significantly reported as major barriers in policy making and/or in practice.

Education systems broadly considered the lack of mechanisms facilitating the use of research as one of the most relevant barriers to research use: 11 systems considered it to be one of their top three main barriers in policy and 16 did in practice. Latvia and Slovenia considered this to be their main barrier in both policy and practice.

Contradictorily, these systems reported a higher number of mechanisms on average. This could imply that surveyed systems consider existing mechanisms to be insufficient in facilitating research use. The lack of connections between existing mechanisms or the lack of a system-level coordination of mechanisms could be the source of the problem, leading to the perceived need for more mechanisms.

In sum, data collected from the policy survey show some coherence. With linear mechanisms being highly reported and system-level ones only by a few education systems, system-level barriers are highly reported and linear barriers only a little. However, some inconsistencies are also observed. First, the large number of projects encouraging interactions coupled with a relatively large number of reports of the absence of relationships between actors suggest that these projects are not strictly focused on facilitating research use. Second, lack of mechanisms was reported to be an important barrier together with a relatively high number of reported mechanisms. This points to existing mechanisms having insufficient impact. This raises questions about the need for connections between mechanisms and comprehensive coordination strategies.

**Table 5.2. Systems according to their main reported barriers by type of approach**

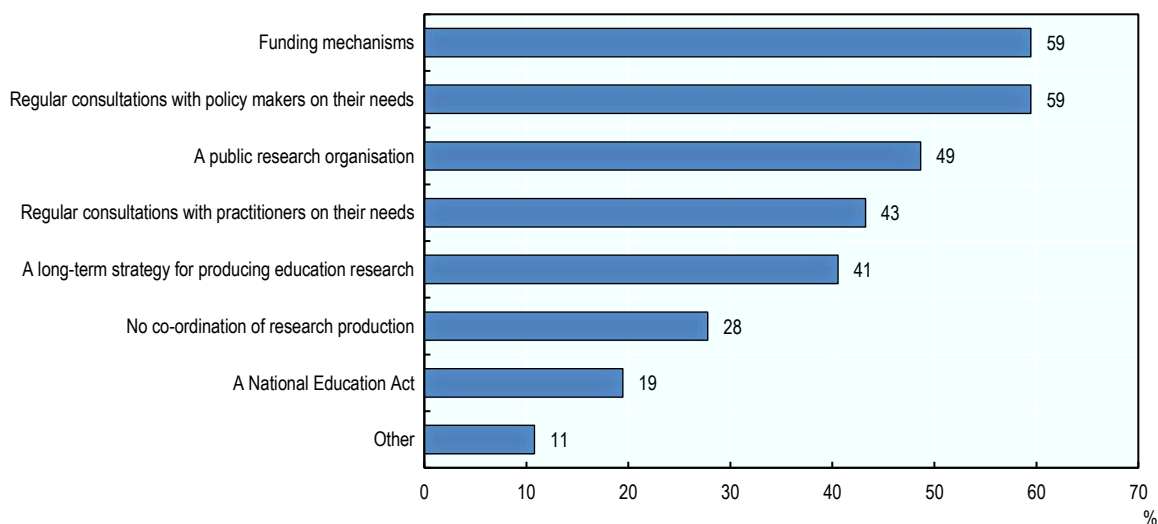
		School practice				
		Linear	Relationships	Systems		
Policy making	Linear	Spain	Sweden United States (Illinois)	Colombia Costa Rica		
	Relationships	Switzerland (Nidwalden)	Switzerland (Zurich)	Slovak Republic Switzerland (Appenzell Ausserrhoden)		
	Systems	Chile Belgium (Flemish Community) Czech Republic Norway Switzerland (Lucerne)	Austria Belgium (French Community) Lithuania Portugal	Canada (Quebec) Canada (Saskatchewan) Denmark Estonia Finland Hungary	Iceland Japan Latvia Netherlands New Zealand Slovenia	South Africa Switzerland (Obwalden) Switzerland (Uri) Turkey United Kingdom (England)

Note: Data was collected at a national and at a sub-national level. Switzerland (St. Gallen) did not provide data on this question.

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


## How do systems coordinate research production?

The OECD *Strengthening the Impact of Education Research* policy survey asked education systems how the production of education research is coordinated, regulated or managed (see Figure 5.5).

**Figure 5.5. Presence of coordinating mechanisms of research production, 2021**

Note: Data showing percentage of systems reporting the existence of a given mechanism for the coordination, regulation or management of research production. Data was collected at a national and at a sub-national level.

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

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One of the most cited methods of research production are funding mechanisms, with 59% of systems reporting them. These education systems reported more provision of funding for research in specific topics in both policy and practice. Funding mechanisms are active facilitators of both research production and research use, and are not focused exclusively on one or the other. The Norwegian Programme for Research and Innovation in the Educational Sector is an example of a system-wide institutionalised funding mechanism (see Box 5.3).

Regular consultations with policy makers on their needs was the other most cited coordinating mechanism for research production, with 59% of education systems reporting this. These consultations are mentioned 16 percentage points more than those with practitioners. Education systems reporting this type of consultation with policy makers also reported the systematic identification of policy makers' needs in terms of research knowledge more frequently as an existing mechanism facilitating the use of research. This is similar to consultations with practitioners as a mechanism for coordinating research production and the systematic identification of practitioners' needs. As with the funding mechanisms, it would appear that these practices, when present, tend to be used for both research production and research use.

### Box 5.3. Programme for Research and Innovation in the Educational Sector in Norway

The *Programme for Research and Innovation in the Educational Sector* (FINNUT) is a long-term research and development programme for the education system carried out by the *Research Council of Norway* from 2014 to 2023. Its primary goal is to support high-quality research aimed at spurring innovation and informing practice and policy development at all levels of the education sector.

FINNUT provides funding for research projects across four main areas – teaching and learning; professional education and practice; management, leadership and organisation; and education and work – covering the entire sector, from early childhood education and care to adult learning. For the assessment of the future impact of these funded research projects, the programme considers some academic indicators such as the frequency of citations in international scientific journal and the inclusion in systematic reviews, among others.

The programme features three main types of calls for applications:

- **Investigator-driven projects**, aiming at developing high-quality, relevant knowledge and addressing research fragmentation. Allocated grants cover doctoral and post-doctoral research fellowships and projects related to national and international co-operation and mobility.
- **User-driven projects**, providing practice-based training and competence development to researchers within relevant topics for the development of practice and innovation in the education sector.
- **Projects with users' participation**, developed jointly by researchers and users who identify the needs of the latter. Collaborative research is seen to improve the sector-specific knowledge among the research community and develop research capacity among practitioners.

FINNUT also functions as a national cooperative arena for research groups, national and local public administration, and other organisations in the education sector while also strengthening the ties between strategic basic research, applied research and innovation in the field of education. Another major activity of the programme is targeted dissemination of findings and research results while individual projects are charged with informing target groups about their research activity through communication and dissemination plans.

Source: University of Stavanger (2022<sup>[24]</sup>), *The Knowledge Centre for Education*, <https://www.uis.no/en/research/knowledge-centre-for-education> (accessed on 23 March 2022); Research Council of Norway (2017<sup>[25]</sup>), *FINNUT Work Programme 2014-2023*.

In half of education systems surveyed, a public research organisation is in charge of the coordination, regulation or management of research production. However, only 41% of systems have a long-term strategy for producing education research. (See Box 5.4) There are twice as many education systems reporting such long-term strategies as those reporting a system-wide strategy for facilitating the use of research in policy or practice. Nevertheless, education systems reporting a strategy in research production report a higher presence of strategies facilitating research use in policy and in practice than those that do not. Hungary, the Netherlands, Sweden and Turkey reported having a system-wide strategy for research use in both practice and policy as well as a strategy for research production.

The data above suggest that there are systems that think in a “research dynamics” logic, i.e. that invest in various mechanisms to facilitate research use and acknowledge the importance of coordinating research production. However, given that research production is a necessary, although not sufficient, condition for increasing interest in the use of evidence, the number of systems that do not strategically coordinate the production of research is still high.

### Box 5.4. Coordinating efforts at a system level

#### The Netherlands – NRO

The *Netherlands Initiative for Education Research* (NRO, a unit of the *Netherlands Organisation for Scientific Research*, the Dutch Research Council) is in charge of coordinating research education and its funding. The initiative aims to promote high-quality knowledge use and to enhance innovation in the education sector by promoting collaboration between researchers and practitioners at all education levels. The three core tasks of NRO include improving the coherence of education research, financing high-quality research and encouraging the use of research evidence in practice. The involvement of educational institutions and policy makers is encouraged throughout the research project cycle.

By identifying research gaps, NRO programmes upcoming research to improve the coherence of education research. This is done through:

- Gathering information from school directors, policy makers, research institutes and other key stakeholders to help formulate the subjects for the research programmes.
- Publishing calls for research proposals.
- Evaluating proposals according to prescribed criteria of practical relevance and scientific rigour.

Researchers can submit applications for funding in partnership with ministries, companies or other organisations. In addition, monitoring research projects helps to ensure that they keep in line with established priorities throughout the process. Disseminating results enables education to gain maximum benefits from scientific insights.

#### Wales – NSERE

In Wales, the National Strategy for Educational Research and Enquiry (NSERE) directs the coordination of research-focused policy activity and the development of officials’ capacities to effectively use research in policy development work, aiming to educational policy and practice being informed by the best available research evidence.

This strategy was born after the commission of the UK Ministry of Education to the Welsh Government to “co-create a national education research strategy that provides a coherent and transparent framework for education research in Wales” in November 2018. The government then worked with organisations and individuals within the Welsh education research ecosystem and abroad to develop the NSERE.

Although the NSERE relates to all age groups, levels and sectors within the Welsh education system, it mainly focuses on “3 to 18 education” and educational research within higher education. The strategy’s main objectives are to:

- Develop high-quality research capacity and volume within higher education institutions focused on the needs of the Welsh education system.
- Develop a national evidence-informed profession, where educational professionals use high-quality research evidence and are provided with opportunities to participate in its production.
- Support the development of evidence-informed policy through engagement with a wide range of research.
- Contribute to and learn from international research and evidence.

Source: For the Netherlands: PO-Raad et al. (2019<sup>[26]</sup>), “Smart Connections towards a strong knowledge infrastructure for education”; NRO (2022<sup>[27]</sup>), *About NRO*, <https://www.nro.nl/en/about-nro> (accessed on 24 March 2022); for Wales: Welsh Government (2021<sup>[28]</sup>), *The National Strategy for Educational Research and Enquiry (NSERE): Vision Document*, <https://gov.wales/national-strategy-educational-research-and-enquiry-nsere-vision-document-html>.

## Impact: A missing piece

Despite evidence-based practice being one of the goals of public services in OECD member countries and several activities being developed for its promotion, there are too few consensual agreements on how evidence-based practices and policies are best promoted (Nutley, Walter and Davies, 2009<sup>[9]</sup>; Boaz et al., 2019<sup>[29]</sup>). Nevertheless, knowledge mobilisation interventions seem to work well when an appropriate mechanism is employed (Jasimuddin, 2007<sup>[30]</sup>) and they address the clear and genuine barriers preventing the research uptake (Oliver et al., 2014<sup>[11]</sup>).

The way in which researchers define and measure “evidence or research use” determines the effectiveness and impact of the mechanisms and repercussion of the barriers. The concept of “research use” has multiple dimensions (Levin, 2011<sup>[3]</sup>). Evaluations of research use interventions employ a wide range of indicators such as changes in access to research; in knowledge and understanding; in attitudes and beliefs; in behaviour; and/or in outcomes for services users (Nutley, Walter and Davies, 2009<sup>[9]</sup>). Thus, even though there are considerable literature results on the impact of existing mechanisms influencing decision makers’ research use, their evaluation outcomes are often not comparable.

An analysis of What Works Centres in the United Kingdom (Gough, Maidment and Sharples, 2018<sup>[31]</sup>) assesses impact based on:

- Ultimate beneficiaries (e.g. pupils or pupils’ attainment).
- Behaviours of intended users (e.g. practitioners’ or policy makers’ use of evidence to inform decisions).
- Intermediate outcomes (e.g. research users’ knowledge of research findings).

The analysis reveals that these Centres, with the exception of the Education Endowment Foundation (EEF), undertake relatively little evaluation of impact of their work on ultimate beneficiaries (see also Chapter 7).

It is noteworthy that research can have impact in varying ways and that most of these do not yield direct application results in a short time frame. Its effects are often gradual and indirect, mediated through several social processes, and shaped by the larger socio-political context (Levin, 2011<sup>[3]</sup>). Research on the health sector considers that the time lag between the availability of research evidence and its application in practice is from eight to thirty years (Hutchinson and Johnston, 2006<sup>[32]</sup>). In the education sector, the EEF-

funded Research School Network project achieved a change in the practices of teachers and school leaders in its first three years of implementation but has not shown any sign of impact in terms of student outcomes (Gu et al., 2021<sup>[33]</sup>).

An extensive systematic review analysed the effectiveness of interventions focused on increasing decision makers' use of research. Regarding information and dissemination-related interventions, it pointed to positive effects on research use. However, these effects are “conditional on the intervention design simultaneously trying to enhance decision makers' opportunity and motivation to use evidence” (Langer, Tripney and Gough, 2016, p. 1<sup>[4]</sup>). Interventions aiming to enhance the use of educational research in policy making and/or school and teaching practice should consider multiple mechanisms to ensure and increase impact. Such a tendency is already observable: many strategies aiming to encourage research use draw on more than one mechanism (Nutley, Walter and Davies, 2009<sup>[9]</sup>).

## Conclusion

Education systems are complex: Multiple actors operate at different levels and with different degrees of power, empowerment, autonomy and demands, and they interact with each other with different intensities. In such complexity, the sharing of knowledge between different elements of education systems and the coordinating efforts and mechanisms facilitating this become essential (Burns and Köster, 2016<sup>[34]</sup>).

System-wide coordination, involving a wide and diverse set of relevant actors, is necessary for effective modern governance. The goal of these coordinated strategies is to replace isolated interventions and align action to a system's specific context, actors and resources (Burns and Köster, 2016<sup>[34]</sup>). These strategies should aim to move the system from “single interventions and simplistic solutions to the recognition of the need for coordinated changes throughout the system and to its constraining and enabling contexts and resources” (Mason, 2016, p. 52<sup>[35]</sup>).

Data from the *OECD Strengthening the Impact of Education Research* policy survey provide insight into these strategies by mapping existing mechanisms for and barriers to the use of research in policy making and in school and teaching practice across education systems. There are three main and interrelated points that emerge from the analysis.

### ***Efforts to enhance research use are misaligned with the specific systems' problems***

Interventions focused on bridging gaps between research production and research use have to draw on mechanisms that are likely to affect genuine barriers to research uptake (Oliver et al., 2014<sup>[11]</sup>). Nevertheless, survey results show that there are misalignments between barriers and mechanisms in many education systems. Analyses such as this complemented with more detailed national data could point to areas for improvement. Once barriers to the use of education research have been identified, mechanisms to overcome them can be designed and implemented in a more targeted manner.

### ***Lack of strategic coordination inhibits impact***

Local efforts to improve the use of education research exist. They aim to transform teachers, school leaders and policy makers into critical research consumers (Jones, Procter and Younie, 2015<sup>[2]</sup>), and make research producers aware of the context of their potential users. However, isolated one-dimensional efforts are not enough. The lack of coordination between these initiatives at a higher level and the lack of a system-wide strategy can block their scale-up and fulfilment of their potential impact. Research has shown that the impact of certain mechanisms facilitating the use of educational research is stronger when these are combined (Langer, Tripney and Gough, 2016<sup>[4]</sup>). However, the “ideal” combination of mechanisms for each specific context and definition of this mix are, as yet, poorly understood.



### ***Still some way to go for systems thinking***

Systems thinking and system-wide coordination can have deep impact on policy, practice and research. Coordinated and effective interventions are relevant for change at the individual, organisational, and community level. Strategic communications have a critical role in coordinating these changes and effective coordination structures can speed uptake of innovations (Best and Holmes, 2010<sup>[15]</sup>). However, despite the unanimous view that governing education systems must take a systems approach, governments are struggling to figure out how that can be done in practice. An investigation of activities that encourage knowledge mobilisation found that while there is a large number of such activities, there is little overall coordination between them (Cain, Wieser and Livingston, 2016<sup>[36]</sup>; Gough et al., 2011<sup>[14]</sup>). The same picture emerges from the data presented in this chapter as well, with systems mechanisms being poorly reported.

Finally, there is a note of caution. The effects of coordinated mechanisms or of a system-wide strategy on facilitating the use of educational research have not yet been broadly studied. Further research should aim to analyse and evaluate this type of strategy; enabling conditions for its correct development and implementation in order to achieve its highest impact; and who should lead it.

A first step for education systems could be to carefully and thoroughly map the state of their educational research use system in order to identify the factors influencing the use of research. Doing so will allow them to align mechanisms and barriers, generating effective interventions under a holistic strategy to enhance research use. The coordination of this strategy and its evaluation are key pieces that are commonly neglected yet fundamental for strategic improvement.

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## Annex 5.A. Additional tables

**Annex Table 5.A.1. Factors influencing research use by type of factor**

Mechanisms for and barriers to the use of educational research

Type	Mechanisms	Barriers
Information	<ul style="list-style-type: none"> <li>• Research users' timely access to relevant information</li> <li>• Targeted and improved dissemination of good quality research findings to practitioners and policy makers</li> <li>• Complex intervention evaluation methods (in the case of empirical research)</li> <li>• High clarity, reliability and/or relevance of research evidence</li> <li>• Audience-tailored format of research findings</li> </ul>	<ul style="list-style-type: none"> <li>• Poor access to good quality relevant research (e.g. paywalls)</li> <li>• Lack of availability to research</li> <li>• Lack of relevance of research</li> <li>• Poor dissemination</li> <li>• Poor presentation (e.g. without synthesis or highly complex)</li> <li>• Negative perceptions of research by users</li> </ul>
Interaction	<ul style="list-style-type: none"> <li>• Local collaboration between the research and policy or practice communities enabling greater discussion on findings</li> <li>• Formal, constant, large-scale partnerships between research producers and users to support better connections between them</li> <li>• Trust and mutual respect among research producers and users</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of personal and/or professional contact between research producers and potential users</li> <li>• Lack of structures and/or spaces for contact</li> <li>• Lack of incentives for contact and/or collaboration</li> <li>• Lack of support for collaboration</li> <li>• Cultural and/or linguistic mismatches and misunderstandings between research producers and users</li> </ul>
Individual characteristics	<ul style="list-style-type: none"> <li>• Researchers' skills and capacities related to effective dissemination of useful evidence</li> <li>• Researchers' good comprehension of policy processes and the context surrounding policy priorities</li> <li>• Researchers' good comprehension of educational structures and processes and teachers' professional practice</li> <li>• Policy makers and practitioners' skills and capacities related to research literacy, utilisation and application</li> <li>• Practitioners' skills development through career-long professional learning, beginning in initial teacher education</li> <li>• "Influencers" (experts, peers)' positive attitudes, behaviour and influence towards research use</li> </ul>	<ul style="list-style-type: none"> <li>• Lack or deficit of comprehension of policy processes and school contexts of researchers</li> <li>• The perception of research producers as partisan and producing biased results</li> <li>• Lack or deficit of research analytical skills, experience, literacy and awareness of practitioners and policy makers</li> <li>• Lack of formal training</li> </ul>
Structure and organisation	<ul style="list-style-type: none"> <li>• Technical support (e.g. guidelines, laws)</li> <li>• Financial support (e.g. funding)</li> <li>• Organisational support (e.g. time, rewards, incentives)</li> <li>• Provision of necessary human resources and training</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers' lack of time to read research, to familiarise themselves with new evidence-based strategies and/or to interpret and adapt these approaches to their specific context</li> <li>• Conflicting timelines (e.g. political and research cycles), with research outputs being not available at the time when they are needed as input to decision making</li> <li>• Inadequate system and/or organisational support (e.g. lack of reward system)</li> <li>• Financial and/or human resource constraints</li> <li>• Lack of or poor formal long-term planning processes</li> <li>• Inflexible and non-transparent policy processes</li> </ul>

Type	Mechanisms	Barriers
Culture	<ul style="list-style-type: none"> <li>• Positive leadership and authority</li> <li>• Facilitation role of national and local governments</li> <li>• Support of school leaders for the use of research</li> <li>• System and/or organisational support to and commitment with evidence development and use</li> <li>• System and/or organisation underlining the value of research use</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of senior management support for evidence-informed decision making</li> <li>• Perceived lack of authority to change procedures</li> <li>• Overall resistance to change</li> <li>• Negative perception towards research use</li> <li>• Difference on the priorities of research producers and users</li> <li>• Competing pressures (economic, political, social factors)</li> <li>• Highly politicised environment</li> </ul>

Source: Humphries, S. et al. (2014<sup>[10]</sup>), "Barriers and facilitators to evidence-use in program management: A systematic review of the literature", <http://dx.doi.org/10.1186/1472-6963-14-171>; Oliver, K. et al. (2014<sup>[11]</sup>), "A systematic review of barriers to and facilitators of the use of evidence by policymakers", <http://dx.doi.org/10.1186/1472-6963-14-2>; Nutley, S., I. Walter and H. Davies (2009<sup>[9]</sup>), "Promoting evidence-based practice: Models and mechanisms from cross-sector review", <http://dx.doi.org/10.1177/1049731509335496>; Hutchinson, A. and L. Johnston (2006<sup>[32]</sup>), "Beyond the BARRIERS scale: Commonly reported barriers to research use", *JONA*, Vol. 36/4, pp. 189-199; Sutherland, W. et al. (2019<sup>[37]</sup>), "Building a tool to overcome barriers in research-implementation spaces: The conservation evidence database", <http://dx.doi.org/10.1016/j.biocon.2019.108199>; Hering, J. (2016<sup>[38]</sup>), "Do we need "more research" or better implementation through knowledge brokering?", <http://dx.doi.org/10.1007/s11625-015-0314-8>; Welsh Government (2021), *The National Strategy for Educational Research and Enquiry (NSERE): Vision Document*, <https://gov.wales/national-strategy-educational-research-and-enquiry-nsere-vision-document.html>; Rickinson, M. et al. (2020<sup>[23]</sup>), *Using Evidence Better: Quality Use of Research Evidence Framework*, <http://monash.edu/education/research/projects/qproject> (accessed on 1 September 2021).

### Annex Table 5.A.2. Factors influencing research use by type of approach in the OECD Strengthening the Impact of Education Research policy survey

Type of approach	Barriers	Mechanisms
Linear	<ul style="list-style-type: none"> <li>• Low quality of research in key areas</li> <li>• Low accessibility of research in appropriate formats</li> <li>• Lack of relevant research</li> </ul>	<ul style="list-style-type: none"> <li>• Systematically identifying relevant research gaps</li> <li>• Systematically identifying needs in terms of research knowledge</li> <li>• Systematically commissioning research to address needs</li> <li>• Synthesising and disseminating ed. research findings through user-friendly tools</li> </ul>
Relationships	<ul style="list-style-type: none"> <li>• Lack of willingness to use research</li> <li>• Lack of learning opportunities</li> <li>• Lack of openness to new ideas from research</li> <li>• Low levels of skills and capacity to use research</li> <li>• Lack of relationships between different actors</li> </ul>	<ul style="list-style-type: none"> <li>• Regular system-wide activities to develop capacity/skills to use ed. research</li> <li>• Projects encouraging actors' interactions to facilitate the use of ed. research</li> </ul>
Systems	<ul style="list-style-type: none"> <li>• Lack of broader political will to use research</li> <li>• Lack of financial resources</li> <li>• Lack of mechanisms that facilitate the use of research</li> <li>• Conflicting timeframes with research</li> <li>• Lack of time to access and engage with research</li> </ul>	<ul style="list-style-type: none"> <li>• Regular system-wide activities to monitor/evaluate the impact of ed. research</li> <li>• System-wide strategy for facilitating the use of ed. research</li> <li>• Legislation/law or professional guidelines that promote ed. research use</li> <li>• Offering resources (e.g. financial, human) to support research use</li> <li>• Providing targeted funding for research on specific topics</li> </ul>

**Annex Table 5.A.3. Factors influencing research use by type of factor in the OECD *Strengthening the Impact of Education Research* policy survey**

Type of Factor	Barriers	Mechanisms
Information	<ul style="list-style-type: none"> <li>• Low quality of research in key areas</li> <li>• Low accessibility of research in appropriate formats</li> <li>• Lack of relevant research</li> </ul>	<ul style="list-style-type: none"> <li>• Systematically identifying relevant research gaps</li> <li>• Systematically identifying needs in terms of research knowledge</li> <li>• Systematically commissioning research to address needs</li> <li>• Synthesising and disseminating ed. research findings through user-friendly tools</li> </ul>
Interaction	<ul style="list-style-type: none"> <li>• Lack of relationships between different actors</li> </ul>	<ul style="list-style-type: none"> <li>• Projects encouraging actors' interactions to facilitate the use of ed. research</li> </ul>
Individual Characteristics	<ul style="list-style-type: none"> <li>• Low levels of skills and capacity to use research</li> </ul>	<ul style="list-style-type: none"> <li>• Regular system-wide activities to develop capacity/skills to use ed. research</li> </ul>
Structure and Organisation	<ul style="list-style-type: none"> <li>• Lack of financial resources</li> <li>• Lack of mechanisms that facilitate the use of research</li> <li>• Conflicting timeframes with research</li> <li>• Lack of time to access and engage with research</li> <li>• Lack of learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Regular system-wide activities to monitor/evaluate the impact of ed. research</li> <li>• System-wide strategy for facilitating the use of ed. research</li> <li>• Legislation/law or professional guidelines that promote ed. research use</li> <li>• Offering resources (e.g. financial, human) to support research use</li> <li>• Providing targeted funding for research on specific topics</li> </ul>
Culture	<ul style="list-style-type: none"> <li>• Lack of broader political will to use research</li> <li>• Lack of willingness to use research</li> <li>• Lack of openness to new ideas from research</li> </ul>	



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