

## **Chapter 7.**

### **Knowledge and research use in local capacity building**

Philippa Cordingley

*Centre for the Use of Research and Evidence in Education (CUREE)*

*Knowledge is vital for teacher quality, both in terms of research evidence and practitioner expertise. The chapter describes possible tensions between research knowledge and practitioner knowledge. Issues revolve around practitioners' knowledge lacking distance from the research subject on the one hand and research based knowledge not being usable for practitioners in the busy environment of the school on the other.*

*Based on a number of examples from England (United Kingdom), the chapter proposes concrete ways to build teacher capacity for engaging with research and to conduct research of their own and increase appreciation of practitioner knowledge in the research community. With regards to education governance, the chapter discusses how policy making can facilitate teachers' motivation and involvement in research by providing the tools for easier use of research knowledge. Importantly, practitioner research should be accompanied by rigorous quality control to ensure fruitful and generalisable findings and provide connecting points with large-scale education research.*

## Introduction

Key changes affecting use of knowledge and evidence in the context of governance include moves from central regulation to de-regulation, from a small numbers of known actors to an increasingly large and wide-ranging group of stakeholders and changes in authority at different levels, especially related to increases in school autonomy. In the context these changes, this chapter approaches knowledge as implying a status or a warrant for action. In the context of policy making for school improvement it suggests concepts, approaches, phenomena and skills that have been proven to work, usually in a range of contexts and for a significant number of people. It also explores the ways in which teachers approach and understand such warrants and notions of proof through the lens of their engagement with the research of others and in their own research.

The chapter reflects on the kinds of knowledge that supports effective governance of education in two parts. It starts with showing how external research can inform teachers for their own research based on practical classroom knowledge. It uses two examples to contextualise the analysis; the first presenting how advanced teacher-led research can function in practice, while the second illustrates how external research can be made accessible to teachers as a prerequisite for own research. The second part of the chapter locates the analysis of the local level in the in broader structures and processes of governance: How can governance facilitate the knowledge flow between external research and teachers and how can research feed into improved practices? This second part directs the spotlight on multiple issues surrounding this issue both on the supply and the demand side. The discussion and examples from England suggest that capacity building through knowledge and research use among education practitioners is a promising avenue to increase evidence informed professionalism. Most important in this undertaking is to develop intuitive tools enabling and motivating teachers to engage with research in a busy school environment, and adjust the governance structures to ensure opportunities for practitioners to engage with research as well as ensuring the quality of teacher-led research to increase its relevance.

### *Interactions between knowledge, policy and evidence*

The connections between knowledge, policy and evidence are many and disparate. The more complex the system the more complex the linkages will be. But whatever the distribution of decision making and agency, it is increasingly recognised (Mourshed, Chijioke and Barber, 2010) that teacher and teaching quality is the fundamental driver of the quality of student experiences and outcomes. Although the governance and knowledge systems in different countries take many forms, the high level components remain broadly constant.

For example, (the majority of) systems where Initial Teacher Education and qualification is governed at national level and operated through Higher Education Institutions (HEIs), initial teacher education and linked regulation is a key venue for and driver of connecting policy, practice, knowledge and evidence. Increasingly the development of national standards for teachers that specify more advanced standards for professional practice also create a governance platform for increasing the connections between teachers' knowledge, skills and practices and the wider evidence base about effectiveness. Some, such as those developed by the Australian Institute for Teaching and Leadership (AITSL) do so with explicit reference to the development and use of knowledge from research. For example their second standard relating to teachers' understanding about how students learn puts understanding from research as central to

practice in increasingly complex ways at all four levels of progression. So continuing professional development and learning (CPDL) is also becoming an important vector for building capacity by connecting knowledge, evidence and practice.

Knowledge can be either research-based or practice-based. A knowledge based capacity building system needs to acknowledge and work with what teachers know and do and the ways they interpret, fashion and enact professional knowledge. Whilst knowledge from multiple cases, especially when rigorously researched, analysed and effectively summarised has much to offer in terms of quality improvement, it is teachers' knowledge of the pupils, the curriculum and the practical realities of school life that is most on their minds on a day to day basis.

In most education systems, higher education institutions are seen as a key source and purveyor of warranted knowledge, drawing from their own and their colleague's education research. Where teacher educators work in institutions with strong research cultures, or where there are strong connections between teacher educators and research, their mutual influence on each other may be strong and visible. But teachers within higher education institutions, like their colleagues in schools, also draw on other warrants. First, their practices are inevitably and properly also shaped by the systems and policies of their host institutions and the requirements of the governments that fund them. They are also based on the views of recognised thought leaders.

Ideally, the teacher educators' practices are shaped by their connections with the schools where their students will work and within which students' early experiments with practice take place. All this is also heavily influenced by their own professional identities (as, for example, teacher, researcher or teacher educator), by often tacit practice, and above all by colleagues' own internalised beliefs and assumptions and experiences. School teachers' engagement with knowledge and evidence is subject to a similarly wider range of influences, not least the support and structures put in place by school leaders, the needs of, and their aspirations for, their students, the demands made by their parents and colleagues and by those with employment and other regulatory powers over them. How then might the capacity of teachers to engage with knowledge from research in meaningful ways be developed as part of building capacity for improvement in the context of complex governance (see also OECD, 2015)?

It is, of course, this complex network of influences that large-scale research seeks to tease apart in identifying the effectiveness of particular approaches, and the prevalence of particular trends in pupil achievement. To do so, research-based knowledge draws heavily on multiple cases structures for reliability and validity to create something independent, something usable in multiple contexts and therefore context free. Practice-based knowledge addresses the same phenomena but recognises their boundedness to context; it is a more human phenomenon dependent on the people who enact it; metaphorically speaking, whose very act of holding the globe hides some part of it from scrutiny: Research-based knowledge could be considered as a globe representing the earth spinning in space and practice-based knowledge as the same globe being supported by a pair of hands.

If policy makers are to harness research-based knowledge to practice for the purpose of improving schooling and achievement, these two worlds need to be brought together. Both are busy and oriented to their own very different power structures, imperatives, rhythms and realities. Simply telling teachers, school leaders or school boards that X offers an effective approach that is superior to current practices rarely has much impact. For example, Assessment for Learning (AfL) is one of the approaches that has the

strongest international research warrants; yet, whilst widely “known” and practiced, it is still relatively little understood (Black and Wiliam, 1998). As Marshall and Drummond (2006) point out, in the schools in England where the practices had been both extremely popular and assiduously disseminated through National Strategies backed up with extensive Continuing Professional Development (CPD), probably only 20% of the full potential of AfL is actually being deployed by the teachers trying to use it. In particular although teachers are using techniques to learn more about how their pupils are experiencing their lessons; they are not, as yet however, using the information they gain this way to refine the next steps in the learning sequence to build on what they discover. So use of research and harnessing research based knowledge as a tool for improving practice and capacity building is not, as yet, an established art form.

### **Research-based knowledge as a tool for improving practice and building capacity**

This first part of the chapter sets out with an example from England in the United Kingdom, presenting how advanced teacher-led research and its scaling up to the system level can look like in practice (Box 7.1). It discusses the conditions and potential obstacles connected to this approach of teacher-led research and use of knowledge. Prerequisite for engaging into their own research based on evidence from the classroom is teachers’ capacity to engage and reflect meaningfully on existing research. Hence, shifting the focus on how to build capacity ultimately enabling teachers to improve teaching practice directly, the section follows with a discussion of the prerequisites for making research accessible and usable for teachers. The section concludes with an illustration (Box 7.2) of how such a capacity building approach would look in practice.

#### **Box 7.1. Advanced teacher-led research and its scaling up in practice**

In 1997, the English national Teacher Training Agency (TTA) announced a programme of national research awards for teachers who were willing to carry out enquiries on behalf of the profession. The process would be rigorously quality-assured and, if successful, published in order to both inform teachers of its content and to act as a role model for others teachers in engaging with knowledge developed elsewhere and in their own evidence-informed learning.

One of the successful teachers was Romey Tacon, a head of an infant school in a deprived town in coastal England, who was deeply concerned about the lack of progress of a significant number of pupils in numeracy. Working with a colleague and higher education mentor, Tony Wing from Brighton University, the two teachers explored the findings of Catherine Stern’s (Stern, 1949) research into the development of understanding of number relations (Tacon and Wing, 2004). Stern’s work focused in particular on visual representation of number relations; the two teachers used this to construct and test apparatus that would support pupil learning, and to develop effective ways of introducing and working with this apparatus. They were delighted by a very positive and swift response from pupils. Quite soon their colleagues began to take an interest, struck by the animated and detailed conversations about changes in the learning of all pupils and of known struggling learners in particular. By the end of the first year of the research word had begun to spread to other local schools and the formal teacher research report published by TTA began to attract wider interest.

A second year grant enabled wider testing of the approach with other neighbouring schools, with other year groups in the host school and in local junior schools. Again the results continued to be impressive. The publication of the findings attracted a good deal of local and regional attention and Romey ran a number of local conferences with support from the Local Authority. When her capacity to support the insatiable demand for places ran out she opened up her school

**Box 7.1. Advanced teacher-led research and its scaling up in practice (cont.)**

on Tuesday afternoons so local teachers and head teachers could come and observe the approach at work and discuss what they had seen with the teachers afterwards. The impact of the approach was particularly striking for struggling learners, especially for those with short term memory challenges, like pupils with Down's syndrome. The Teacher Training Agency put the teachers in touch with a Charitable Foundation able to fund further, larger scale research and they also contacted a leading charity supporting pupils with Down's syndrome. Further regional trials revealed similar striking patterns in improvement and, over time the resources and approach were developed for publication nationally and internationally. The intellectual property behind the approach was eventually sold to a major international publishing house.

The resulting approach, known as Numicon mathematics, is now widely recognised as playing a significant role in advancing the numeracy skills of pupils who struggle with numeracy, especially those with Down's syndrome, in ways that significantly advance the level of progress they can attain and thus the extent to which they can function independently in society. Numicon is now the subject of a large-scale randomised control trial across more than eighty schools in England (Cordingley and Crisp, 2014).

***Conditions for teacher-led research and knowledge-related capacity building***

The example from England (Box 7.1) describes a number of outcomes linked to a national policy geared to building capacity through research engagement depended on a number of conditions and drivers. The following elements can be distilled from the example described above:

Firstly, it addressed a “wicked issue”. A wicked issue refers to a profound and continuing concern to substantial numbers of teachers and the education system as a whole and one that was driven by specific aspirations for pupils. This led to an emphasis on meeting the needs of other potential teacher users of the research from the outset, connecting with teachers' core identity around the business of meeting the learning needs of others. Secondly, there was a strong existing evidence base about effectiveness on which the teacher could build with the help of a mentor who has had a chance to explore the original research findings in a number of contexts. Thirdly, as the work developed incrementally, the teacher was able to tap into a sustained funding stream over a period of three years. Subsequent funding from a separate, charitable organisation enabled the teacher's own research and development to continue and grow to scale until it became self-sustaining with the arrival of a publishing company.

Importantly, the teacher-led research described took place in an environment with compelling responses from pupils, teachers and schools and supported by a policy ensuring funding, recognition and support. In the form of a funding scheme, the policy comprised the following key requirements for teacher-led research:

- The teacher-led research had to build on existing evidence.
- Scientific rigour enabled the policy to fund the research project as a “standard bearer” on behalf of the profession.
- Structures needed to be in place that facilitated systematic engagement with evidence to move the teacher reports beyond the description and opinion that had characterised many teacher case studies up to that point.
- Coaching in methods and in making research accessible to peer and expert scrutiny.

Most but not all of these conditions were designed into the policy to promote research-informed practice of the Teacher Training Agency (TTA) through its Teacher Research Grant Policy. Its success, combined with an increasing recognition of the importance of research-informed practice more generally, acted as a springboard for the creation of a number of other significant funded research programmes for teachers in England.<sup>1</sup> Each of these initiatives built upon a subset of the findings from the first national policy for promoting use of research and evidence. Each programme was addressing a particular subset of issues such as leadership, school-to-school networking, or accreditation of post graduate CPD (Continuing Professional Development). Other differences arose because each initiative was nested within the standard operating protocols and organisational values of the host organisation. Despite such distinctions, an increasingly shared understanding of the key ingredients for promoting evidence-informed professional development to enhance the depth of knowledge and practice can be understood as a recognisable trend from 1997-2009 (Cordingley, 2010).

### ***Helping teachers engage with research***

The emergence in England of a mature and increasingly coherent evidence base about what makes a difference to pupils, as well as to teachers in CPD and practitioners' use of research was initiated and supported by Government investment in the development of a methodology for systematic and technical reviewing of research findings (Bell et al., 2010; Cordingley et al., 2007; Cordingley et al., 2005a; Cordingley et al., 2005b; Cordingley et al., 2003; Timperley et al., 2007).

Based on this government-initiated methodology for reviewing education research, a number of English national organisations (the General Teaching Council, the Department for Education, the National Teacher Research Panel, CUREE and the Learning and Skills Improvement Service) cooperated in funding a systematic review of the evidence about the full spectrum of teacher use of research. The review explored the evidence about how teachers engage with existing research and its effect and how this is similar to and different from their engagement in their own research. This review also explored how teacher engagement in and with research compares with the experiences of health and social care professionals.

Taken together, the use of research and CPD reviews (Bell et al., 2010; Cordingley et al., 2007; Cordingley et al., 2005a; Cordingley et al., 2005b; Cordingley et al., 2003; Timperley et al., 2007) encompass almost 50 000 studies which were filtered to identify approximately 250 studies that provide high quality and relevant evidence. From these studies data could be extracted and synthesised to identify the most common problems associated with teacher research, the potential benefits of functioning engagement of teachers in research and the key characteristics needed to help teachers to engage in and with research. The major findings are as follows:

Regarding difficulties experienced by teachers in relation to research, two dimensions were most frequently found: time and inadequate facilitation/external support. With respect to the first, teachers frequently reported a lack of time to familiarize themselves with new strategies and time for interpreting and adapting the approaches to their specific context. Additionally, a lack of time frequently appeared to lead to an overload of information or distraction: teachers struggled to engage in their own research or with external research in sufficient depth.

In terms of inadequate facilitation and/or external support, teachers frequently reported problems related to insufficient support at the point it was needed; too little contact with experts regarding the content of new approaches and learning to use them; as well as a lack of practical ways to structure experimentation and adapting new approaches for specific contexts. Other problems pertained to poor research instruments, for example over-elaborate and lengthy surveys. On the administrative side, teacher reported a shortage of practical help with enquiry processes such as data entry, typing up interviews, coding data, managing videos and surveys.

With respect to positive outcomes, reviews highlighted that the benefits of building capacity through engagement in and with research are significant both for pupils and for teachers. For pupils, the research reviews highlight links between such activities and pupils' motivation, their attitudes to different subjects, test performance and specific skills (e.g. questioning skills). Similarly, the reviews highlight links to pupils' self- and group-organisation such as their approaches to collaboration and the selection of learning/problem solving strategies.

For teachers there are links with improvements in their self-confidence, for example related to risk-taking and efficacy; teachers' willingness and ability to change practice; improvement in subject and pedagogy knowledge and using these skills to match pupils' needs; as well as teachers' increased willingness to engage in continued professional learning.

The findings across all these reviews (Bell et al., 2010; Cordingley et al., 2007; Cordingley et al., 2005a; Cordingley et al., 2005b; Cordingley et al., 2003; Timperley et al., 2007) are remarkably consistent and highlight a number of key characteristics for evidence-informed practice (Table 7.1).

**Table 7.1. Key characteristics needed for evidence informed practice**

Key characteristics of evidence informed practice gathered from reviews	
<b>Continuing specialist support</b>	<ul style="list-style-type: none"> <li>• Training, including instruction in the essential core of new approaches and facilitation of the development of an understanding of the key principles underpinning those approaches.</li> <li>• Modelling demonstrating innovative strategies at work in a range of settings and contexts and practicing what is being preached.</li> <li>• Guidance and critical friendship to challenge orthodoxies and expand views about what is possible on a sustained basis – sometimes called coaching, or mentoring, sometimes collaborative enquiry.</li> <li>• Tools and frameworks such as observations frameworks to support learning from looking, analysis grids and planning tools to secure consistency and coherence.</li> </ul>
<b>Continuing peer support</b>	<ul style="list-style-type: none"> <li>• Professional learners make themselves reciprocally vulnerable thus increasing ownership, commitment and a willingness to take risks.</li> <li>• Peer support speeds up the process of developing trust that enables unlearning of old assumptions and habits as well as the development of new understandings and practices.</li> </ul>
<b>School leaders support</b>	<ul style="list-style-type: none"> <li>• School leaders need to provide time for teachers to plan, analyse and reflect together on the process and outcome of trying new things.</li> <li>• Encourage risk taking.</li> </ul>
<b>Collaboration</b>	<ul style="list-style-type: none"> <li>• Learning how to learn from close observations of learning and teaching exchanges.</li> </ul>
<b>Structured dialogue</b>	<ul style="list-style-type: none"> <li>• Structured dialogue rooted in evidence from trying things out with pupils that disturb the status quo.</li> </ul>
<b>Ambitious goals</b>	<ul style="list-style-type: none"> <li>• Ambitious goals may be mandated externally provided there is a strong element of peer support through which instructions from others can be interpreted from professional learners' own pupils.</li> </ul>

*Source:* Author's own work based on Bell et al. (2010), Cordingley et al. (2007), Cordingley et al. (2005a), Cordingley et al. (2005b), Cordingley et al. (2003), Timperley et al. (2007).

As one systematic review of teachers' use of research demonstrated, the quality of coaching, mentoring or support is a significant accelerator or inhibitor (Bell et al., 2010). Some HE colleagues involved in supporting teacher research do so from a love of teacher enquiry but lack specialist knowledge in the content of the area of research being explored by the teachers they are supporting. Some mentors in particular fields have specialist knowledge and expertise but lack knowledge and experience in applying research techniques to the demands of enquiry within busy, dynamic, messy school environments. Other HE colleagues with research expertise that could accelerate teacher engagement with knowledge and evidence are used to working to more extended timescales and are unable to provide the brisk project management and business-like support that teachers and schools need to mesh enquiry activities with the rhythm of day to day school life.

Effective support for teacher engagement with evidence calls for an unusual combination of skills that is usually more easily found through accessing a network of colleagues rather than through bilateral relationships. Such networks require structural encouragement and support from, for example local districts and universities if they are to flourish and grow quickly. In England, funding for school based research consortia and Networked Learning Communities were two successive, early national initiatives that had some success in building a networked infrastructure for the support of teacher use of research such as the Networked Learning Communities programme (Earl and Katz, 2005). Teaching Schools are a concept in more recent initiatives seeking to achieve similar momentum within a more self-directing system (Sebba, Kent and Tregenza, 2012; Hargreaves, 2012).

### **Box 7.2. Supporting teachers to engage with research**

What then does this abstract collection of key characteristics look like on the ground? One interesting example of a professionally-driven approach to capacity building through engaging teachers in and with research was launched in the early part of the twenty first century by the National Union of Teachers (NUT), the biggest English Professional Association at the time. The NUT had in fact been the original sponsor of the first of the systematic reviews of evidence about what makes a difference for teachers and for pupils, and sought to establish and model professional development and capacity building in a way that aligned closely with best evidence. Their “teacher2teacher” CPD programme involved pairs of teachers in working together on a sustained period to develop and evaluate emerging practice-based on intense working with leading edge researchers over twenty-four hours. The topics for “teacher2teacher” programmes arose from requests for NUT members, the views of NUT policy officers about system level issues causing teachers concern and the views of their substantial body of members who were also school leaders. Leading edge researchers were identified and recruited on the basis of their research publications and after considerable desk research and consultation across NUT's extensive network of researchers who from whom they had commissioned research. These included, for example, members of the original Black and Wiliam research, David Wray, one of the authors of *The Effective Teachers of Literacy* report for the Teacher training Agency (Wray et al., 2000) and Robert Fisher, author of a number of studies on the use of thinking skills in primary schools (Fisher, 2013).



### Box 7.2. Supporting teachers to engage with research (*cont.*)

During the initial twenty-four-hour residential workshops teachers were immersed in illustrations of new approaches, in experimenting with tools and resources that nest them in classroom practices and in planning to experiment with them, over three cycles of experimentation and reflection that spanned roughly twelve weeks. During the initial residential, the teachers learned about the evidence about collaborative coaching and built structured, formal Learning Agreements. The objective was to shape their expectations of how they would work, the evidence they would collect about how their learning connected with pupil learning and the ways teachers would support each other's, sometimes quite different, projects. After approximately twelve weeks the teachers came together for another intense workshop focused on analysing how each other's experiments had worked, exploring together changes in pupil learning and work, photographs and videos of lessons, lesson plans and changes in their thinking and understanding. This reflection and analysis was facilitated by the original specialists.

The final stage of the programme involved the teachers planning how to translate their own learning into learning experiences for their colleagues, role-playing the initial stages and considering how they would be able to a) continue their own learning as part of the process of supporting others and b) how they would know their own and their colleagues' learning had been successful. Some of these teachers went on to write up their learning experiences and others used this embedded form of engagement with and in research as a springboard for embarking on more explicit research for doctorate and masters programmes. NUT itself then established a series of scholarship projects focused on key NUT priorities such as Thinking Skills and improving the quality of talk which enabled teachers to progress to a more formal mode of engagement with and in research and several other "graduates" of these programmes subsequently supported and promoted teacher engagement in and with research by, for example, and serving as members of teacher research groups including the National Teacher Research Panel.

During the first ten years, NUT ran these programmes for between eight and twelve different groups of teachers and focused on a wide range of different priorities. It is still continuing over a decade since it started and in times of austerity; in this instance in relation to development education.

## Implications for governance in complex systems

This second part of the chapter takes a closer look at how teachers' engaging with and in research is related to governance in more general terms. Regarding effective capacity building through improving knowledge use and transfer, the evidence lets us identify three broad fields in relation to governance where support processes and structures are likely to be needed:

*Encouraging teachers and managing risk:* generating confidence in and a thirst for high impact approaches emerging from research. To build capacity, teachers need to be encouraged not to shy away from the difficult but important issues rather than reaching for undemanding issues close at hand. This means encouraging teachers to take risks and calls for governance processes able to manage the risks of failure (see also Burns and Blanchenay, Chapter 10).

*Facilitating access:* the supply of accessible and usable summaries of research that offer multiple entry points and support for teacher engagement in and with research, a pathway through the illustrations of evidence about high impact approaches at work in classrooms, the tools and protocols for using them and the clear explanations of the underpinning theory or rationale on which such depth depends.

*Assuring quality:* Quality assurance pertains to processes and systems for promoting depth and assuring quality in support for teacher engagement in and with research.

### ***Encouraging teachers***

In England, teachers interested in research and evidence grew to the point that in 2010, almost 40% of teachers reported formal engagement in their own research or with the research of others during the previous 12 months. This is a remarkable change that arose from a mix of top down policy leadership, sideways-on support from the General Teaching Council, the professional associations and local authorities and bottom-up demand from teachers and school leaders (Cordingley, 2010).

Top-down policy making in England, for example through national guidance about the curriculum and national teaching and learning strategies, became increasingly explicit about the way evidence was informing policy over the course of the 2000-10 decade. This was in turn reflected in the systematic embedding of evidence in the support materials and CPD different policy agencies such as the Qualification and Curriculum Development Agency, the Teacher Development Agency and the Department for Education plus the General Teaching Council offered to schools. It is also reflected in the decisions of the new Coalition government about specific interventions such as synthetic phonics, even though in the main their policies have advocated significant reductions in the level of explicit prescription to, or central support for, schools in an effort to increase their autonomy, self-direction and accountability.

But much of the effort to increase demand was aimed to generate interest “from the bottom up”. Grants for flagship teacher research champions, encouragement of school-to-school networking via engagement with research, and embedding understanding of the role of research in effective CPD all helped to increase demand. So too did giving a high profile to examples of effective engagement with research. For example, in England the National Teacher Research Panel has played an important role in encouraging teachers to engage in their own research and with the research of others. The conferences comprised workshops run by teachers whose research had been peer-reviewed by the Panel against criteria relating both to the quality of the research and to its relevance and usability. Successful applicants were coached on how to summarise their research in ways that would contribute to other teachers’ learning, and on how to design interactive workshops. At each conference, some 40-60 teacher researchers showcase excellence in engaging in their own research or with the research of others; the results are made available by the Panel’s popular website<sup>2</sup> and are also frequently used to illustrate larger scale academic research via, for example, the Research for Teachers resources<sup>3</sup>. Panel members also used the summaries to support local and regional research networks and to run local and regional teacher research conferences.

Teachers' professional associations also played an important role in championing and highlighting teacher engagement in and with research. In England, the National Union of Teachers played an important role by funding research reviews, role modelling research-based CPD and funding teacher scholarships (Box 7.2). The Association of Teachers and Lecturers (ATL) similarly sponsors and encourages teacher engagement in study at master's level that includes carrying out research. More recently the formally designated Teaching Schools have been given responsibility for leading 6 strands of development activity across an Alliance of between 5 and 40 schools, and research and development is one (albeit the least well established) of the key strands.

### ***Managing risk***

A cornerstone for securing an effective flow of empirically supported knowledge is ensuring that what is offered speaks to “wicked issues”. That is, to teachers' aspirations and concerns for their pupils' learning. Huberman (1993) argued that the research community should be collecting and analysing the questions teachers pose of their practice during CPD and enquiry planning to shape the education research agenda. Using challenging and complex approaches such as Assessment for Learning in busy classrooms means unlearning established safety routines and control mechanisms. This is sustained, hard, emotional as well as intellectual work that needs to overcome considerable practical and operational obstacles. Obstacles include, for example, the pressure to do things quickly; new approaches take extra planning and use more classroom time in the early stages. They also affect, and possibly undermine, existing tried and tested, routinised practices in unpredictable ways.

There is also a risk that misunderstanding the underpinning rationale for new approaches could lead, in the process of adapting them for particular students, to unintended consequences, and inadvertently removing its core features. These challenges lead to a number of important practical considerations for those seeking to grow capacity in this way. Developing new or enhanced research informed approaches also means providing and then steadily removing scaffolding, for example through tools that limit some of the demands on teachers' attention, or help them explore the connections between new strategies and pupils' learning in progressive waves whilst also ensuring that current orthodoxies and assumptions are challenged.

This means ensuring that evidence about how pupils are responding to new approaches needs to be built very explicitly into the development process to ensure that risks to students are identified and managed. It also reinforces the importance of selecting approaches that have more than local, anecdotal evidence to suggest that the bumpiness of early experiments with new approaches will lead to benefits that outweigh the risks.

### ***Facilitating access by providing the right tools***

Tools are important in supporting use of evidence at scale because tools enable leaders to secure consistency and coherence in the way leadership policies are applied (Robinson, Hohepa and Lloyd, 2009). Tools were an explicit feature of policies for promoting evidence-informed practice in England from 2000-10, through a number of parallel attempts to broker and mediate access to research in user-friendly forms (Table 7.2).

**Table 7.2. Examples of tools to facilitate access to research**

Example	Description
Short presentation-type summaries	<ul style="list-style-type: none"> <li>Short presentation-type summaries of high quality research that would take a teacher just 2.5 minutes to read but which also provide reflective questions that would encourage teachers to explore further.</li> </ul>
“Research tasters”	<ul style="list-style-type: none"> <li>Micro enquiry tools called “research tasters” comprising a distillation of key and intriguing research findings in about 50 words.</li> <li>A mini evidence collection and recoding activity teachers can use to collect evidence from pupils.</li> <li>Reflective questions for exploring the evidence from their pupils.</li> <li>Recommendations about experimenting with the approach outlined in the nugget and using the enquiry tool to continue to collect evidence about how pupils are responding.</li> <li>Links to further information.</li> </ul>
Research papers digests	<ul style="list-style-type: none"> <li>Medium detailed digests of high quality research papers that are relevant to practice using a standard format.</li> <li>Derived from research observation of teachers exploring a range of research papers and discussion with them about features they find most helpful.</li> </ul>
Larger summaries	<ul style="list-style-type: none"> <li>5 000 word summaries of the highest quality, large scale studies and a small number of well-tested research, linking every academic finding to a good quality teacher-researched case study.</li> </ul>
Anthologies	<ul style="list-style-type: none"> <li>Anthologies for specific sub groups of teachers, e.g. newly qualified teachers or teachers with a particular interest in equalities, in which themes emerging across the studies were illustrated by “research tasters”.</li> </ul>
Research magazines	<ul style="list-style-type: none"> <li>Research magazines for teacher users of research, each tailored to the constituencies and policy briefs of different government agencies.</li> </ul>

*Source:* Author’s compilation based on policies in place in England (United Kingdom) 2000-10.

Underneath this array of resources designed to improve the supply of research evidence to teachers sit different levels of engagement with the research of others. There is an entry-level need to raise awareness of the range of potential benefits that the research evidence base has to offer, and an associated need to secure understanding of the core facts and issues revealed by particular pieces of research to enable teachers and schools to consider their relevance. At a more intermediate level there is a need to encourage teachers to experiment with approaches highlighted by research in the context of evidence about their own pupils and context and to interpret and refine approaches for that context. At the most sophisticated level there is a need to provide access not just to the evidence about an intervention but also to the underpinning principles so that teachers can develop a practical theory or rationale for their work and to inform the adaptations they make as they embed new approaches in range of different contexts. Tools are also crucial for effectiveness because they help to make teacher learning more visible and so enable better understanding of demands that new approaches are making on teachers (Robinson, Hohepa and Lloyd, 2009). The tacit nature of teachers’ professional knowledge is, as this chapter describes, a major influence on their use of other forms of knowledge.

It is worth considering how different groups of teachers conceptualise their own knowledge in this context. Effective teachers internalise complex knowledge and skills to the point where they are able to use their conscious attention to focus on the particular learners they are working with; and thus to the point where they are barely aware such skills are put to use. Such teachers often describe much of their skilled, dynamic and

complex practice as simply a matter of “common sense”. Unfortunately herein lies an important source of potential confusion. Because new and less skilled teachers also describe much of their practice as common sense, they cling onto published materials that are familiar and feel very manageable but which may be very weak, or onto tried and tested regimes whose main function is to control behaviour rather than to enable learning. Such teachers also see their practice as “common sense”; and may well believe they are making common cause with more developed colleagues in doing so, even though they may end up using this notion of common sense knowledge to justify resistance to improvement projects or to the emotional and intellectual costs necessary to achieve significant improvements in teaching and learning. The vernacular “common sense” with such diverse roots thus obscures almost diametrically opposed stances and may fuel resistance to change except where schools have established an effective professional learning environment whose role is to engage all teachers in challenging practice and orthodoxies together using, for example, action research, lesson study of evidence based collaborative coaching as tools for developing new professional knowledge.

### *Assuring quality*

The challenges in England have not simply been practical ones. Early support for building teacher capacity through national research grants triggered an outbreak of methodological wars, first in the Times Education Supplement and later in research journals (Hammersley, 1997; Gorard, 2001). Contestation focused on about whether teacher research is real research and about whether or not teacher research should only focus upon evidence from the profession’s own practise.

Interestingly, some ten years later, the Practitioner Use of Research Review described above brought evidence to attention that teachers were engaging with evidence from practise in their own classrooms and those of their colleagues and with evidence from larger scale, academic studies (Bell et al., 2010). But the debate about the validity of teacher research for informing others’ practice still rumbles on, as the review of education research by Ben Goldacre (2013) for the new UK coalition government showed, by advocating strongly that teachers should not be undertaking their own research but looking for and participating in researcher led randomised control trials.

In England the general belief is that the quickest way for activities to be embedded at scale across the system is for them to be included in the OfSTED<sup>4</sup> inspection framework. The most recent revisions to that framework do in fact place considerable emphasis on continuing professional learning that is properly connected to pupil learning. It remains to be seen how many schools and inspectors make the link between that and engagement in and or with knowledge and evidence research but if they do that is likely to significantly increase demands for research tools, resources and activities as a core strand of school improvement. Recent changes to the OfSTED inspection framework to increase the validity of judgements that were previously made about teacher quality on the basis of 20 minute classroom observation shows that OfSTED too are having to pay increasing attention to the disciplines of research. Challenges from academic commentators on the reliability of OfSTED judgments (Stewart, 2013) and reflective responses from Mike Cladingbowl (2014), then Director of policy at OFSTED, have brought requirements that inspectors should triangulate evidence from observations from 20 minute visits to lessons, with evidence from pupils’ work books and discussions with them.

Recently the UK Government has launched a “Close the Gap, Test and Learn programme” as a centrally designed but locally led Research and Development (R&D)

initiative focused on closing gaps for vulnerable pupils. This positions R&D leads in Teaching School Alliances as, in effect, local managers for trialling, on a randomised basis, seven interventions across over 750 schools. Not only are R&D leads responsible for recruiting schools, and explaining the nature and purpose of randomisation, they also have a role in helping them with testing and encouraging qualitative research about, for example, fidelity, alongside the quantitative on-line assessments. At the time of writing, the results of this radical and large scale programme to promote research and evidence informed practice are still pending. However, it is already clear that putting teachers in a leadership role around R&D has helped greatly both with recruitment of schools to a trial and with the retention of control schools. This larger scale approach to engendering and supporting teacher engagement with evidence as a means of aligning knowledge from both practice and research and building local capacity for improvement has certainly created energy and momentum.

## Conclusion

This chapter suggests that using knowledge and research and capacity building for evidence informed professionalism within complex governance systems are learning problems. What we know already about supporting the learning of young people has much to tell us about how we support the learning of teachers (Cordingley, 2008). If, as argued here and in the reviews of evidence about effective CPD outlined above, school leaders need to approach supporting their staff as though the staff were their class, perhaps policy makers would find it helpful to consider structures and policies as though they were the improvement curriculum for the education system and to approach the ways these are enacted as system level pedagogy?

In the task of developing systems to underpin such work, it might also be useful to conclude by listing some of the challenges encountered as the research and evidence-informed policies in England unfolded, and strategies adopted for tackling them. This might provide a reasonable springboard for considering how governance can be used to develop such capacity and benefit from it. The debates in the late 20th century and early 21st about the role of teacher engagement in and with research compared to the role and quality of large-scale research were heated. Noticing the distinction between teacher engagement with the research of others and in their own research and the importance of both was helpful in positioning teachers as having an interest in connecting the two. Another pathway through the opposing views was created by distinguishing between:

- The importance of the generation and recognition of large scale research and evidence as important for deciding whether to pursue an approach as a policy that is to be imposed on others.
- The importance of the collection, analysis and interpretation of fine grained, relevant, triangulated qualitative evidence at scale. Focussing on the processes underpinning findings about the impact of different approaches can help to shape efforts to test and replicate high leverage approaches.
- The potential of smaller scale and / or qualitative evidence generated by practitioners as they test out and contextualise larger scale findings and responses to local challenges.

This last element is key to helping teachers feel that such efforts are possible in their own context. Teachers' (quality assured) systematic accounts of development experiences seem to be especially compelling to their colleagues, perhaps because they help them develop a sense of collective efficacy. In this context illustrative research by teachers

geared to improving their own practice and inspiring and informing similar improvements for others has an important part to play in connecting generalisable knowledge and evidence with practice based knowledge and practitioners' aspirations for their pupils.

Making and exploring these distinctions has helped all the strategic players (policy makers, researchers, teacher organisations, teacher educators, policy makers and school leaders) see that each had an important contribution to make to pre-empting over-polarisation of the lines of argument or a hardening of the different interests and perspectives involved in connecting evidence and practice.

Further insights that emerged in the English context included:

- *Teachers' individual and collective contributions to research informed practice need to be appreciated.* The establishment of the English National Teacher Research Panel (ENTRP), comprising a group of 15 teachers able to provide extensive evidence about their engagement in their own research and their use of others' research was helpful here.<sup>5</sup>
- *Teachers should be helped to develop the confidence and skills to analyse and evaluate the relevance of research evidence whatever its provenance.* One early strategy that bore some fruit was involving expert teacher researchers from the ENTRP in developing a framework for exploring the quality of a wide range of knowledge and using this to peer review and model excellence in teacher research evidence to increase "research literacy" across the profession (ENTRP and Cordingley 2003). These guidelines were used explicitly by the panel to attract and select high quality teacher research for their biennial conferences, to identify larger scale studies to inform the Panel's work and to inform teachers' contributions to the many research advisory groups on which they sat. Funding of such panels and for teachers to participate in research advisory groups, to peer review teachers' own research and to convene conferences of quality assured teacher research at local, regional or national levels could play an important role here. General Teaching Councils are increasingly getting involved in such work and it also seems likely, at the time of writing, to feature in the role and development work of an *English National College of Teachers*.

Developing teacher access to high quality, systematic and technical reviews of research in areas where teachers have concerns for pupils and where studies have been extensive. Teachers, like policy makers, have little time to trace through the sometimes byzantine often erratic pathways between partial or small scale, sometimes conflicting studies. Nor do most of them have access to the expensive library archives available to Universities. In addition to better access to teacher and policy friendly summaries of individual study findings, teachers need access to systematic research syntheses.

At the end of the 20th century Black and Wiliam's seminal work on Assessment for Learning illustrated the art form and the English government set up a centre to develop and quality assure such reviews, the Evidence for Policy and Practice Centre (EPPI)<sup>6</sup>, to build on this (Black and Wiliam, 1998). Subsequent reviewing methodologies pushed the boundaries of such reviews further to the point where the excellent and rigorous New Zealand Best Evidence Syntheses gave teachers and parents a direct role in signing off review protocols and findings as having the potential to improve the quality of teaching and learning. More recently the Hattie review and synthesis of the effects of different interventions has become renown amongst both policy makers and practitioners (Hattie, 2009).

National Knowledge centres are also emerging, for example, in Belgium, Norway, and Denmark as a means of developing more coherent, national approaches to use of evidence and knowledge. Knowledge services are growing rapidly. An example from England is the “Sutton Trust Toolkit” which is promoted and funded by the Education Endowment Foundation<sup>7</sup>. This web based system of evidence assessment for particular interventions is based on a randomised trial approach to knowledge mobilisation at scale. It will be important to the contribution of knowledge services to governance, capacity building and enhancing students’ life chances to ensure that teachers will take ownership and have a stake in the resulting structures. The English Government’s decision to link this tool-kit to the evaluation of how schools are deploying government funds for vulnerable students at the same time as promoting Research and Development via Teaching School Alliances is an interesting early experiment.

## Notes

1. Post Graduate Professional Development Programme funded by the Teacher Training Agency (CUREE, 2009), the Best Practice Research Scholarships (Street and Temperley, 2005) funded directly by the Department for Education and skills (DfES), the Networked Learning Communities programme (Earl and Katz, 2005) and the research associate programmes funded by the National College for School Leadership.
2. Available at [www.ntrp.org.uk/](http://www.ntrp.org.uk/).
3. Available at [www.tla.ac.uk/site/Pages/RfT.aspx](http://www.tla.ac.uk/site/Pages/RfT.aspx).
4. Office for Standards in Education, Children’s Services, and Skills, [www.gov.uk/government/organisations/ofsted](http://www.gov.uk/government/organisations/ofsted).
5. Evidence of their lasting legacy can be found at [www.ntrp.org.uk](http://www.ntrp.org.uk).
6. Evidence for Policy and Practice Centre (EPPI), [www.eppi.ioe.ac.uk](http://www.eppi.ioe.ac.uk).
7. Education Endowment Foundation, [www.educationendowmentfoundation.org.uk/](http://www.educationendowmentfoundation.org.uk/).



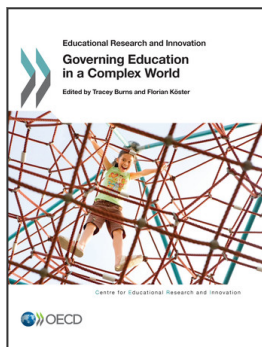
## *References*

- Bell, M. et al. (2010), *Report of Professional Practitioner Use of Research Review: Practitioner Engagement in and/or with Research*, CUREE, GTCE, LSIS & NTRP, Coventry, [www.curee-paccts.com/node/2303](http://www.curee-paccts.com/node/2303).
- Black, P. and D. Wiliam. (1998), *Inside the Black Box: Raising Standards through Classroom Assessment*, School of Education, King's College, London.
- Cladingbowl, M. (2014), *Why I Want to Try Inspecting Without Grading Teaching in Each Individual Lesson*, Ofsted, London, <http://webarchive.nationalarchives.gov.uk/20141124154759/http://www.ofsted.gov.uk/resources/why-i-want-try-inspecting-without-grading-teaching-each-individual-lesson>.
- Cordingley, P. (2010), “Stepping stones, bridges and scaffolding: Effective tools, artefacts and professional learning processes for research use”, paper presented at American Educational Research Association (AERA) Conference, Denver, 30 April-4 May 2010.
- Cordingley, P. (2008), *Sauce for the Goose: Learning Entitlements that Work for Teachers as Well as for Their Pupils*, CUREE, Coventry.
- Cordingley P. et al. (2005a), “The impact of collaborative CPD on classroom teaching and learning. Review: What do teacher impact data tell us about collaborative CPD?”, in *Research Evidence in Education Library*, EPPI-Centre, Social Science Research Unit, Institute of Education, University of London, <http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=395>.
- Cordingley P. et al. (2005b), “The impact of collaborative continuing professional development (CPD) on classroom teaching and learning. Review: How do collaborative and sustained CPD and sustained but not collaborative CPD affect teaching and learning?”, in *Research Evidence in Education Library*, EPPI-Centre, Social Science Research Unit, Institute of Education, University of London, [www.eppi.ioe.ac.uk/cms/Default.aspx?tabid=392&language=en-US](http://www.eppi.ioe.ac.uk/cms/Default.aspx?tabid=392&language=en-US).
- Cordingley P. et al. (2007), “What do specialists do in CPD programmes for which there is evidence of positive outcomes for pupils and teachers?”, in *Research Evidence in Education Library*, EPPI-Centre, Social Science Research Unit, Institute of Education, University of London, [www.eppi.ioe.ac.uk/cms/Default.aspx?tabid=2275](http://www.eppi.ioe.ac.uk/cms/Default.aspx?tabid=2275).
- Cordingley P. et al. (2003), “The impact of collaborative CPD on classroom teaching and learning”, in *Research Evidence in Education Library*, EPPI-Centre, Social Science Research Unit, Institute of Education, University of London, [www.eppi.ioe.ac.uk/cms/Default.aspx?tabid=133&language=en-US](http://www.eppi.ioe.ac.uk/cms/Default.aspx?tabid=133&language=en-US).
- Cordingley, P. and B. Crisp (2014), “The challenges and opportunities involved in designing large-scale national “RCT-like” programmes in education”, paper presented at British Educational Research Association Conference, London, 23-25 September 2014.

- CUREE (2009), *Postgraduate Professional Development (PPD) Programme: Quality Assurance Strand: Research Report Year 3*, CUREE, Coventry.
- Earl, L. and S. Katz (2005), *What Makes a Network a Learning Network?*, National College of School Leadership, Cranfield.
- Fisher, R. (2013), *Teaching Thinking: Philosophical Enquiry in the Classroom*, Bloomsbury Academic, London.
- Goldacre, B. (2013), *Building Evidence into Education*, Department for Education, London, [www.media.education.gov.uk/assets/files/pdf/b/ben%20goldacre%20paper.pdf](http://www.media.education.gov.uk/assets/files/pdf/b/ben%20goldacre%20paper.pdf).
- Gorard, S. (2001), “A changing climate for educational research? The role of research capacity-building”, paper presented at British Educational Research Association, Leeds, 13-15 September 2001.
- Hammersley, M. (1997), “Educational research and teaching: A response to David Hargreaves' TTA lecture”, *British Educational Research Journal*, Vol. 23/2, pp.141-161.
- Hargreaves, D.H. (2012), *A Self-Improving School System: Towards Maturity*, National College for School Leadership, Nottingham, [www.dera.ioe.ac.uk/15804/1/a-self-improving-school-system-towards-maturity.pdf](http://www.dera.ioe.ac.uk/15804/1/a-self-improving-school-system-towards-maturity.pdf).
- Hattie, J.C. (2009), *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*, Routledge, London.
- Huberman, M. (1993), “Changing minds: the dissemination of research and its effects on practice and theory”, in C. Day, J. Calderhead and P. Denicolo (eds.), *Research in Teacher Thinking: understanding professional development*, Falmer, London.
- Marshall B. and M.J. Drummond (2006), “How teachers engage with Assessment for Learning: lessons from the classroom”, *Research Papers in Education*, Vol. 21/2, pp. 133-149.
- Mourshed, M., C. Chijioké and M. Barber (2010), *How the World's Most Improved School Systems Keep Getting Better*, McKinsey & Company, New York.
- NTRP (National Teacher Research Panel) and P. Cordingley (2003), “Encouraging and supporting CPD in making use of research: Guidelines from the National Teacher Research Panel”, Paper presented at British Educational Research Association Conference, Edinburgh, 11-13 September 2003.
- OECD (2015), *Schooling Redesigned: Towards Innovative Learning Systems*, Educational Research and Innovation, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264245914-en>.
- Robinson, V., M. Hohepa and C. Lloyd (2009), *School Leadership and Student Outcomes: Identifying What Works and Why: Best Evidence Synthesis Iteration (BES)*, New Zealand Ministry of Education, Wellington.
- Sebba, J., P. Kent and J. Tregenza (2012), *Joint Practice Development: What Does the Evidence Suggest are Effective Approaches?*, National College of School Leadership, Nottingham.
- Stern, C. (1949), *Children Discover Arithmetic*, Harper and Rowe, New York.

- Stewart, W. (2013), “Ofsted’s approach ‘is not backed by research’”, *TES Magazine*, London, [www.tes.co.uk/article.aspx?storycode=6356566](http://www.tes.co.uk/article.aspx?storycode=6356566).
- Street, H. and J. Temperley (2005), *Improving Schools Through Collaborative Enquiry*, Continuum International Publishing Group, London.
- Tacon, R. and T. Wing (2004), *A Multi-Sensory Approach to Teaching Mental Arithmetic*, National Teacher Research Panel, Coventry, [www.ntrp.org.uk/node/62](http://www.ntrp.org.uk/node/62).
- Timperley, H. et al. (2007), *Teacher Professional Learning and Development: Best Evidence Synthesis Iteration*, New Zealand Ministry of Education, Wellington.
- Wray, D. et al. (2000), “The teaching practices of effective teachers of literacy”, *Educational Review*, Vol. 52/1, pp. 75-84.





**From:**  
**Governing Education in a Complex World**

**Access the complete publication at:**  
<https://doi.org/10.1787/9789264255364-en>

**Please cite this chapter as:**

Cordingley, Philippa (2016), "Knowledge and research use in local capacity building", in Tracey Burns and Florian Köster (eds.), *Governing Education in a Complex World*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264255364-9-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to [rights@oecd.org](mailto:rights@oecd.org). Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at [info@copyright.com](mailto:info@copyright.com) or the Centre français d'exploitation du droit de copie (CFC) at [contact@cfcopies.com](mailto:contact@cfcopies.com).