

AERA 2009

Using research and evidence as a lever for change at classroom level

Philippa Cordingley



Centre for the Use of
Research & Evidence in
Education

CUREE Ltd

4 Copthall House Station Square Coventry CV1 2FL

☎ +44 (024) 7652 4036

☎ +44 (024) 7663 1646

✉ philippa.cordingley@curee.co.uk



AERA Paper

Using Research and Evidence as a Lever for Change at Classroom Level

Philippa Cordingley, Centre for the Use of Research and Evidence in Education, England

This paper explores evidence from thirteen years of support for research and evidence informed practice as a change lever in England. It starts from the proposition that empirical evidence about teacher development has an important role to play in helping understand how the use of research and evidence can support teacher change. There has been extensive development of models for promoting engagement of policy makers and teachers with research based on evidence from knowledge transfer (Oakley 2007) and analysis through the lens of the co-construction of knowledge (Edwards et al 2005). There has also been modest investment in empirical investigation of the use of research and evidence (Sharp et al 2006). But public exploration of these issues from the perspective of what is known about teacher learning, development and change is limited. In arguing that reflecting on teacher change and use of research and evidence as continuing professional development and learning helps to clarify key components within the change process, the paper attempts to fill this gap.

Over the last 13 years many English government agencies have gradually increased and aligned their interests in and support for the use of evidence and research as tools for change management (OECD 2002, CUREE 2007). A series of international, systematic reviews of the impact of CPD (eg Cordingley *et al* 2007) have also identified consistent characteristics for effective CPD. The paper highlights the role research evidence can play in brokering coherence building between national agencies, and the role research based tools, protocols and resources can play in taking learning from research to scale as a change support mechanism. The paper then uses evidence from the reviews to illustrate and explore a case study of a national initiative supporting teacher change. This involved the creation of a national framework to support and shape mentoring and coaching that was directly rooted in the research evidence. The case study highlights key features of the transition from research review to policy tool and also the ways in which the framework explicitly attempts to embed use of research evidence about teaching and learning within CPD.

It concludes with reflections on the extent to which transforming knowledge from research into classroom change involves a mix of complex processes some of which require specialist mediation.

Introduction

Successive governments have sought to enhance national social and economic development in England by investing in education, learning and skills. For the past thirteen years, the English Government and its various National Agencies, have increasingly supported research and evidence informed practice in education. The Teacher Training Agency started to promote teaching as a research based profession as long ago as 1996 through the work of its Research Committee. Its commission of Professor David Hargreaves to provide its Annual Lecture in 1996, marked a turning point in public debate on this topic in England (Hargreaves 1996). Hargreaves' clarion call to improve the quality and range of education research and its relevance to policy and practice was taken up energetically by the incoming Labour Government in 1997 and was debated energetically by the Academy where it was both

contested and considered. The new Government unveiled three parallel strategic policy initiatives to improve the supply – and to a lesser extent, the use of research: it instigated a National Review, established a National Education Research Forum and funded a National Centre for conducting systematic reviews of research. It also set up a policy unit to underpin these initiatives, to support the development of high quality education research and to increase the accessibility and use of research as a means of improving practice and raising standards.

The landscape in 2009 looks very different from that which Hargreaves surveyed. Amongst the changed contours a (not exhaustive) list would include the very substantial multi million pound investment in the recently concluded Teaching and Learning Research Programme (TLRP). This both focused on practice and included practitioner involvement in the research processes. The emphasis has been on striving for excellence to be achieved through a wide range of mechanisms including:

- fierce competition for large scale and funding supported by extensive peer review of proposals;
- investment in read across individual projects through the collaborative creation of commentaries;
- the creation of a large scale web repository of data;
- funded seminar series to conceptualise and test emerging theories and understandings; and
- a range of different forms of text and web based outputs.

Other initiatives to support the use of research as a change mechanism have started from a policy as opposed to a knowledge creation perspective. For example, Early Years practice has been extensively influenced by the findings of the large-scale, longitudinal EPPE project (Sylva *et al* 2004). National agencies are gearing funding to research informed specifications: the Training and Development Agency, for example, is building its continuing professional development programme around both systematic reviews of research about CPD and a range of specifically commissioned studies to explore the state of current practice. The outputs of systematic research reviews have contributed – amongst many other things - to the evidence base for ongoing national curriculum development (Bell *et al*, 2008). Importantly, for the purposes of this paper, diverse research outputs are also becoming increasingly accessible to practitioners. The Government hosts The Research Informed Practice Site (TRIPS)¹, for example, where digests of practice-relevant research offer a menu of evidence-based ideas for teachers, parents, governors and others. The General Teaching Council for England produces regular summaries of robust empirical research with illustrative case studies in its Research of the Month (RoM)² site.

More recently attention has moved on from communicating research findings effectively to mediation and brokering designed to embed their use in practice. For example, CUREE has supported the development of GTC research of the month summaries with the presentation of accompanying research tools, tasters and CPD protocols³. All of these linked resources are freely available to all practitioners via the web but also diffused through GTC's professional networks and mediated via its own Teacher Learning Academy.

¹ www.standards.dcsf.gov.uk/research/

² www.gtce.org.uk/research/romtopics/

³ eg www.gtce.org.uk/networks/engagehome/resources/behaviour_for_learning/

The aim, for this and similar initiatives is an ambitious one. It is to ensure that research findings are increasingly accompanied by tools, protocols and activities designed to engage practitioners in identifying implications for their own context and embed new practices in day to day learning exchanges with their pupils.

What follows is an exploration of some of these and other developments which have accompanied this sustained policy drive. It examines the nature of the connections between the creation of knowledge through research on the one hand and the use of such knowledge by teachers to facilitate pupil learning and raise achievements on the other.

The contribution of the formal knowledge base

What do empirical evidence and theory offer to inform such developments? Alongside the development of UK policy relating to use of education research there has been extensive debate and analysis through the lenses of:

- knowledge accumulation and transfer, (Oakley 2003, Hammersley 2001);
- evidence related analyses of the role of research in policy making (Saunders 2001, Nutley *et al* 2003, Oates 2007);
- knowledge dissemination (Edwards *et al* 2007); and
- the development of a range of models for promoting teacher enquiry as a change lever (Furlong *et al* 2003, Earl *et al* 2006).

There has also been modest investment in empirical investigation of the use of research and evidence (Galton 2000). The establishment by the incoming Labour Government of the Evidence for Policy and Practice Information (EPPI) Centre⁴ to develop national capacity for systematically reviewing the education knowledge base grew out of policy initiated needs analysis (Hillage *et al* 1998) and theory (Oakley 2003) relating to knowledge creation and transfer. The centre was funded to develop a methodology for, and quality assure a range of, systematic reviews. The reviews were to be undertaken by accredited review groups whose applications for registration were also quality assured. Funding was made available initially through open competition and later on the basis of the priorities of the government and the outcomes of earlier reviews, although review groups were also able to undertake self-funded or sponsored accredited reviews. This initiative and the resulting reviews generated a good deal of debate about of the merits and limitations of such approaches to knowledge synthesis for education (Hammersley 2001).

For the first three years, Government funding for the Centre secured interest from a range of researchers who carried out reviews ranging from English teaching and Mathematics to Early years education and care. As Government funding was withdrawn, wider participation in reviews diminished with the result that the Centre now predominantly carries out reviews directly on commission from Government Agencies. However the initiative has raised the expectations of policy makers and many practitioners about what can be achieved through research reviews, and, as we shall see from a later case study, systematic reviews pointing to cumulative and consistent evidence are finding their way into policy.

Importantly, part of the rationale for funding the EPPI Centre was improving the accessibility of research outputs. The Centre's early insistence on extended technical specificity resulted in dense and complex review reports. These were not conducive (Cordingley *et al* 2003) to making the evidence accessible to practitioners in the early stages. To tackle this, the Centre

⁴ www.eppi.ioe.ac.uk

required review Groups to provide very brief summaries of their reviews written by practitioners themselves. This too was problematic. Practitioner authors were deeply respectful of, perhaps overawed by, the rigour and scale of the review process. Faced with a necessarily scant word limit and with little time to spare, they often produced descriptive, safe summaries that inevitably had little capacity to engage, enthuse or enlighten their colleagues.

The challenges of translating large scale, technical, and therefore seemingly abstract, research review findings into engaging and useful materials to inform practice or policy are significant. Some review groups were determined that their efforts should be connected more directly and practically with the concerns of policy maker or practitioner audiences and invested separately in creating user friendly outputs⁵. The point to emphasise here is that in the early stages the extension of the knowledge base and its use as a change lever were seen as directly linked processes. But the limitations of this conception rapidly became clear. A case study later in this paper illustrates the ways in which systematic review findings were brought within the ambit of policy makers and practitioners.

Of course research reviews can only make contributions to the change agenda based on the evidence available. The development of capacity in reviewing research was accompanied by pressure to extend the knowledge base itself, in particular in relation to improving teaching and learning and raising achievement. The top slicing of significant funds from the Higher Education Funding Council's contribution to Higher Education Institutions created the resource base for the Teaching and Learning Research Programme. This was by far the biggest example of sustained investment in research as an improvement tool in the UK. In which This £43M, 12 year programme – 'the UK's largest ever investment in coordinated educational research' (Gardner 2008) - offered a number of perspectives on integrating knowledge creation and the transformation of practice and policy. TLRP was 'an exceptional opportunity' and provided 'a useful case study for others who wrestle with the challenges and dilemmas of how to maximise the impact of research' (Pollard 2008). Direct involvement of practitioners was a requirement of the programme at the outset albeit one observed in tentative, or occasionally, token ways in the early stages.⁶ But there were extensive examples of successful engagement of teachers in the research process as members of advisory groups, as co-researchers, as fieldworkers trialling and testing outputs from elsewhere or as champions of the projects that they had been engaged with reaching mainstream teachers (Edwards *et al* 2007).

But this paper argues that it isn't enough to engage teachers directly in the research. Realistic use of research evidence as a change lever needs to meet the needs of colleagues who have no direct experience of the research projects or relationship with the researchers. Such connections, and the co-construction experiences they afford, represent considerable scaffolding for teacher change and development. I am arguing that connecting meaningfully and in ways that will inspire and support change for the majority of teachers who do not have the benefit of such connections calls for a different conceptual frame.

Practitioners' own enquiries

⁵ For example, summaries of the EPPI CPD findings have been tailored for CPD leaders, researchers and policy makers: <http://www.tda.gov.uk/about/research.aspx>

⁶ A pattern noticed by the National Teacher Research Panel in its analysis of all first round of applications for funding (NTRP 2001)

One, well established approach to connecting teachers with research that has been extensively tested in the field is Laurence Stenhouse's argument that to "use research is to do research" and that this should be linked with the focus of teachers' own enquiries (Stenhouse 1980). The work of Stenhouse (1980) and Schulman (1987) acted as a springboard for sustained investment by many English national agencies, universities and schools in teacher research. Influential initiatives to support such research have been established across the UK including: Collaboration Action Research Network (CARN); The Research Centre for Learning and Teaching (CfLaT), Newcastle University; Centre Research in Education and Environment (CREE), University of Bath; and the Department of Educational Research (DER), Canterbury Christchurch University. National bursary schemes were also developed, starting with the TTA teacher research grants first issued in 1996, designed to support teachers in undertaking research that would be developed to the point where it could both inform the practice of their colleagues and survive scrutiny by both academic and practitioner peers. One example of such a bursary led from a small scale numeracy project by a pair of teachers to a nationally influential programme which has improved the mathematical achievements of hundreds of children especially those with Down's Syndrome⁷ (Tacon 2001).

This influential scheme was followed in close order by, among others:

- TTA's own school based research consortium programme;
- the 3 year, large scale (£3M) and much mourned Best Practice Research Scholarship programme;
- the Training and Development Agency's large scale Post Graduate Development programme which supports Masters level CPD for teachers;
- the National College for School Leadership's (NCSL) Networked Learning Communities programme;
- GTC's Teacher Learning Academy;
- the Creative Action Awards Scheme;
- the National Centre for Teacher Excellence in Maths grants programme;
- the National College for School Leadership Research Associates programme.

At a conservative estimate these nationally funded schemes for supporting teacher research there involved some 39,500 teachers. If we include LA award schemes and school funded research grants the number is likely to be significantly greater. If we extend our attention to colleagues involved in themed change programmes such as the Campaign for Learning's Learning to Learn in Schools project, widespread support for Assessment for Learning following the publication of *Inside the Black Box* (Black and Wiliam 1998) or the Primary National Strategy's research lesson study work the numbers will be greater still.

The programmes cover a wide spectrum. At one end there are teachers trying out strategies from a menu offered to them by researchers or facilitators as approaches with promise (because of larger scale evidence about potential benefits for pupils). CPD facilitators may or may not cite the sources of the strategies chosen with the result that teachers collect evidence from their own and each others' classrooms and use it to inform and refine their teaching without realising that they are using research findings or methods. At the other end of the spectrum are teachers pursuing higher research degrees. They may undertake action research on their own and with their peers. Such teachers are focussed on generating systematic accounts and analyses of teacher innovation and adaptation and use a wide array

⁷ www.numicon.com/index.html

of research methods and expose their work to the disciplines of peer or academic critique and publication.

There is then, in England a groundswell of support for and interest in practitioner enquiry oriented learning. Some start from a desire to diffuse and mediate research findings. But a good deal simply flows from a belief in practitioner research as an improvement tool. Here the driving force involve simply focussing on issues related to teachers' aspirations for their pupils or their concerns about practice without consideration of what the evidence base has to offer about teaching and learning strategies that have empirical and/or theoretical promise.

One organisation that has sought both to encourage and support increasing interest in engagement in and with research is the English National Teacher Research Panel (NTRP), established by the then Teacher Training Agency in 1999 to champion research informed practice. This panel of expert teachers and practitioner researchers has been concerned both to welcome the range of activity described above and, at the same time, to champion the incremental growth of rigour and quality in a proportion of such work. Their aim is to promote and illustrate excellence as a means of raising expectations and aspirations at the same time as encouraging a wide range of entry points. So their goal is by no means to insist that every teacher should subject every enquiry or development to such standards. Rather they try to enthuse teachers to engage in and/or with their own, or a colleagues' research as a means of enriching and informing the development of their own professional practice and enhancing their students' learning.

Impressive as the numbers of teachers engaging with research may be, they represent at best 9% of the teacher workforce in the UK. What then, can or does engaging in or with research really mean for this wider group of colleagues?

Reaching the wider teaching population

For the majority of the teacher workforce, connecting with research is not a naturally occurring phenomenon. To make such connections involves learning that engenders lasting change and it is important to consider the environment in which such learning must take place. The reality of day-to-day teaching and learning experiences in and around classrooms is the context for interpreting, enacting or testing research findings and embedding change. Such realities shape the kinds and forms of knowledge that can be put to work. Learning for teachers (as for their students) has to build on and/or be related to what they know, can do, believe and care about already. Unless teacher learners have the opportunity to make such connections, new knowledge, ideas or skills are all too often quietly forgotten, discounted or simply remodelled and shoe-horned into pre-existing practices and beliefs. As Desforges (1995) notes, the pull of the status quo in classroom practice is very strong. There is also a good deal of developed theory, starting with scholars such as Dewey (1991), Vygotsky (1978) and Bruner (1960) that support the importance of making, in Bruner's words, 'the relation between things encountered earlier and later as clear as possible' (Bruner 1960, 60).

The evidence from the professional development and learning literature similarly highlights the importance of working with existing, structured and contextualised knowledge when trying to change it for understanding and practice (Joyce and Showers 1988, Guskey 1986, 2000, Cordingley *et al* 2003, Cordingley *et al* 2005b, Bolam and Weindling 2006, Timperley *et al* 2006). Using knowledge from research to encourage and sustain change is a cumulative rather than a standalone process. Given the diverse starting points of individual teachers,

the practicalities of ensuring that learning processes are cumulative will be similarly differentiated; in other words facilitating learning and change through use of research and evidence in group settings is both *context specific* and *personalised*.

Classroom practice as the context for research informed dialogue

What are the aspects of classroom practice that exert a powerful influence over teacher use of research to support change? Knowledge and understanding that is to inform teaching and learning in classrooms has to survive in fast, dynamic interactions between learners - as mediated through multiple, second-by-second judgements and decisions by teachers. The teacher's contributions to such dynamic exchanges are, of course, interpreted differently by a large number of pupils. The variables pile up fast.

Pupils' responses also affect one another even if the teacher is teaching in a transmission mode. If teaching is interactive, pupils support and challenge each other's learning through their questions and interaction in ways that call for quick, well informed and creative responses from teachers. Such challenges are manifested in the blink of an eye in interactive classroom settings. If teachers' knowledge is not instantly retrievable, they will not be able to deploy it at all. In this context, teachers need an intimate, multi-layered grasp of an idea or strategy from research in order to deploy it. It will involve, as Schulman (1987) points out, a range of different kinds of knowledge including, for example, knowledge of pedagogic content, which arises from a complex interplay of knowledge about the subject, about patterns of learning, about students and about the curriculum.

The complexity of the knowledge demands of teaching and learning mean that (both existing and new) teacher knowledge, skills and understanding must be internalised or routinised if they are to be put to work to change responses to practical classroom challenges. Changing practice means changing knowledge and understanding. It takes place in an intensely populated environment and so needs to be understood and developed as an integral part of the ecosystem rather than as something self contained and new that can simply be inserted into pre-existing ideas, beliefs and understandings.

This may not be as complicated as it sounds. There is a strong research base for teacher learning and professional development which is already influencing policy and practice and which is capable of providing manageable strategies for developing evidence-informed changes in practice.

Whilst the literature about internalised or tacit knowledge is extensive (Ryle, 1949), the literature about *changing* tacit or internalised knowledge is less so. Nonetheless, authors such as Desforges (1995), Guskey (1986), Hargreaves (1996), Huberman (2002), Eraut (1994) and, Nonaka and Takeuchi (1995) explore in different ways, the challenging nature of the process of developing or reframing tacit knowledge. Of course, lack of awareness of existing knowledge generates several key operational challenges for changing it. For example, such lack of awareness can lead many teachers to underestimate their existing knowledge and expertise, frequently dismissing complex strategies and skills as "just common sense" perhaps even reinforcing, ironically, a culture of anti intellectualism. Conversely, it can also lead teachers to over estimate the extent to which they have absorbed new ideas or concepts into their dialled-in practices. Teachers may be quick to talk the talk of new initiatives but the pull of internalised knowledge and strongly held beliefs about learning, act as brakes on translating this into walking the walk (Bell and Cordingley 2007), i.e. reviewing and reframing existing practices and embedding new ones.

An exploration of the take up of perhaps the most popular piece of research ever in the UK offers a case in point. As Marshall and Drummond (2006) point out, very many teachers across the UK in the early 21st century are interested in and excited by some of the ideas of assessment for learning, offered through the impressive systematic review, *Inside the Black Box* (Black and Wiliam 1998) and the follow up illustrative research and development *Beyond the Black Box* (Black and Wiliam 1999). But in their recent empirical study only 20% were observed deploying the approaches in ways that were in keeping with the underpinning learning and rationale; i.e. were using the information from the assessment to plan the next steps in teaching and learning. Most teachers saw the approaches as an end point. These teachers had absorbed key messages from research sufficiently well to be able to discuss them and to deploy techniques superficially – to talk the talk. But they had not as yet understood their purpose and so were unable to relate them to their beliefs that were shaping their orientation to pupil learning and therefore to use them to change the nature of the learning experiences for their pupils to walk the walk.

So the literature offers us a challenging insight into the use of research by teachers who have not been directly involved with the research or researchers. To support the change process, these teachers need help in making their existing practices and the underpinning knowledge explicit, so that they can be compared with new approaches highlighted by research and evidence. But it is rare for discussion and analysis about research dissemination to draw upon what we know about learning in general and teachers' learning in particular.

What is known from CPD evidence about changing knowledge?

This is a shame. Because there is a cumulative body of systematic reviews of the impact of CPD, based on careful sifting, systematic filtering against published criteria and careful, double blind extraction, re-analysis and synthesis of data from a core of relevant, high quality studies. This body of cumulative evidence has been amassed over the last 6 years (Timperley *et al* 2007, Cordingley *et al* 2003a, 2005a, 2005b, 2007). Such reviews are developing a solid base of empirical evidence relating to CPD that is connected with positive benefits for teachers and for their pupils. This suggests that CPD programmes where there is evidence of changing teachers practice *and* of improved pupil learning involve a combination of complex processes that support teachers in making their beliefs, ideas and practices explicit. The CPD programmes analysed in these systematic reviews all involve supported this complex change process in remarkably similar ways including, in different forms:

- identifying the starting points for teachers' learning both through structured analysis and through peer support and review;
- reinforcing this by enabling them to select from a range of strategies where there is empirical evidence about effectiveness;
- illustrating the strategies in the context of pupil learning to make the strange familiar;
- encouraging experiments in interpreting, adapting and adopting new strategies in the teachers' own school and classroom setting;
- support for such experiments from specialists to "help make the familiar strange", i.e. probe and challenge the teachers and offer guided reflection in order to help them think about why, how and where things work or don't work. In this way teachers develop an underpinning rationale or practical theory that

helps them use strategies in contexts that are different from those where they first encounter the idea;

- providing sustained peer support to create opportunities for structured dialogue rooted in evidence about the learning of identifiable students. This reciprocal support enabled the teachers to take risks and to maintain motivation (teachers working this way “don’t want to let each other down” and so sustain momentum in the face of other priorities);
- deep engagement with evidence from their own classrooms; and
- facilitating growing independence.

Although common across the sustained professional development programmes with strong evidence of teacher and pupil benefits, these approaches are often confusingly differentiated by acronyms, programme labels and technical terms. Teacher learning processes are variously called collaborative coaching, enquiry reflective practice, action research, innovation, conferencing or curriculum design or development. Specialist contributions are similarly variously labelled tutoring, facilitation, mentoring, coaching, conferencing, partnership working and critical friendship. Despite the labels, the strategies have a great deal in common with each other, and, I am arguing, with what is known about use of research to support change.

As a teacher in the TLRP *Learning how to Learn* project put it, teacher learning (or change and development) of this kind “mirrors” pupil learning (James 2006). What is more, the systematic reviews relating to CPD highlight the way that explicit teacher learning of this kind can create a virtuous circle. As their teachers harness the power of collaborative learning, students become more motivated themselves to engage in risk taking, collaboration and deliberation about evidence. Teachers experiencing professional learning as a facilitative, inductive, enquiry and development-oriented activity are moved to use such approaches in their own teaching. The same phenomenon appears to be important at the level of school leadership. As Viviane Robinson’s Best Evidence Synthesis (2007) highlights, overt engagement in their own and their colleagues’ professional learning by school leaders had twice as much impact on pupils’ learning as any other leadership intervention

The nature of specialist contributions

So far this paper has explored the context for using research as a lever for change through the lens of the teacher’s own development and learning. But in understanding how research can act as a catalyst or support for change it is also important to focus on the nature of the knowledge that can make a difference. The fourth EPPI registered review of the impact of CPD on change explores specifically the contribution of specialists to CPD and examines the kinds of knowledge and skill that were important (Cordingley *et al* 2007). In the very early stages of such CPD programmes the specialists do tend to communicate knowledge from research, often in the form of a menu of related approaches from which teachers can choose. However, far from focusing exclusively on their instructional contributions, the review highlights the importance of *complementary*, ongoing specialist activity geared to supporting the complexity of teacher professional learning and change. Specialists, this review suggests, do provide instruction. From time to time new strategies and ideas are analysed for effectiveness, explored and modelled. This is offered as an introduction to the teachers to enable them to see the implications for practice of research evidence and understand it in the context of their own previous practice and, crucially, in the context of their aspirations for, and the learning needs, of their particular students. Such professional learning is conceived not as a question of communicating knowledge but as a question of

orienting knowledge from one sphere so that it can be organised and framed as an improvement tool in another - to support specific learning needs or target groups of students and their teachers. Using research as a lever for change to the point where new practices supported by evidence are embedded in practice is constructed here as a process of supporting and informing professional learning.

How then do we *operationalise* the use of research as a lever for change in a way that helps teachers to integrate the various forms of knowledge. Part of the answer lies in the construction of this as a pedagogy for professional learning. What might such a pedagogy look like? As suggested in the recent monograph *Sauce for the Goose* (Cordingley 2008) all the evidence points to the need for deep engagement with evidence from *both* the public knowledge base and from participants' own practice (Cordingley *et al* 2003). It suggests early scaffolding of teacher learning and determined and progressive removal of the supporting mechanisms as control over learning is handed over to teachers. It suggests, in particular, persistence and care in making existing beliefs and ideas explicit in order to review and refine them in the light of evidence – and an important and sustained role for coaches in securing this through, for example:

- enabling teachers to explore multiple possible explanations for pupil responses;
- modelling an interest in theory and models as tools for understanding and planning learning and teaching;
- providing tools and protocols to support teachers in connecting their own starting points and progress with their aspirations for and concern about their pupils' learning; and
- providing tools and protocols to ensure that discussion that unpacks teaching and learning episodes explores the underpinning rationale behind a new approach rather than just the surface features.

The National Framework for Mentoring and Coaching in England – a case study in knowledge transformation as CPD

I have argued so far that the use of research as a lever for change involves a complex mix of activities relating to development processes through which knowledge is acquired, understood, interpreted and enacted. But, as the earlier analysis of continuing professional learning and development shows, using knowledge as a lever for change involves sustained and multi-layered efforts by professional learners. Taken together these components demand a range of (often specialist) research mediation and brokerage skills which take the form of recognition of, support for and brokerage of professional learning. What follows is a case study illustration of the use of systematic reviews of research about continuing professional development and learning, in meeting these challenges at national level in England.

The policy environment for this case study in supporting change encompasses a number of national agencies including the Training and Development Agency, the National College of School Leadership, the Qualification and Curriculum Agency, the General Teaching Council and the National Primary and Secondary Strategies. These Agencies have been established to prompt, shape, support and guide change and improvement effort in England. Each agency works to strong imperatives, tight timescales and deploys extensive resources and expertise. Accompanying the creation of so many national bodies in such a complex field is the risk of creating a large number of different policy requirements and drivers that compete with each other for schools' attention or, worse still, offer different models which it is hard for schools to reconcile into coherent approaches. Acknowledging the importance of

securing coherence between the change efforts of national government agencies in 2003, the then Department for Education and Skills commissioned the Centre for the Use of Research and Evidence in Education, to create a single “National Framework for Mentoring and Coaching”. The goal was to harness the most practical elements of the growing evidence base about CPD and to use them to create a vehicle for increasing the coherence and consistency of change efforts and programmes across the system. The resulting framework was to be driven by the evidence but its form and expression were to be developed iteratively to reflect:

- the context in which such agencies were working; and
- the realities of practice on the ground in England at that point in time.

The specific challenges that the framework was created to tackle was to create a framework that:

- would be as relevant to trainee teachers as it would to experienced headteachers;
- each of the national education agencies would volunteer to adopt in order to increase the coherence of their offer to schools;
- built on the best available international evidence;
- built on and enhanced the current interests and practices emerging in schools; and,
- provided guidance and incentives to schools to use the best available evidence.

In effect the Department commissioned an experiment in knowledge transformation. At the centre of the experiment was the challenge to create a “framework” capable of both sparking and supporting the transformation of knowledge about CPD into practice. The approach which was designed to achieve this involved:

- extensive consultation to identify sites of interesting practice;
- filtering documentary and telephone interview evidence against criteria emerging from the reviews of the literature, to identify a core of six sites for in-depth analysis;
- in depth interviews, filmed observations and documentary analysis in the selected six sites;
- reviewing and refining evidence from three systematic reviews and synthesising this across the evidence from the field work;
- identifying and illustrating current approaches to mentoring and coaching in the English education system to enable national agencies to identify and exchange effective practices and areas for development; and
- extensive consultation to test emerging principles and analysis.

The outcomes from this process were a set of core principles, a summary of the key skills of coaches, mentors and professional learners and a summary of the core concepts (why, who, what, where, when) that shape effective mentoring, specialist coaching and collaborative coaching. In line with the evidence about effective CPD, the framework places considerable emphasis on the skills of coaches in brokering access to the specialist and public knowledge base and in supporting teachers beginning coaching in and using evidence about the impact of their learning on their pupils. Similarly it emphasises the skills of professional learners being coached in drawing on, collecting and interpreting such evidence.

The framework is now in active use across England - from the Teacher Learning Academy of the General Teaching (<http://www.teacherlearningacademy.org.uk/>) to the National College for School Leadership's materials on leading coaching (Creasy and Paterson 2005). It guides the Secondary National Strategy's extensive work on coaching and assessment for learning (National Strategies 2006). The Primary National Strategy is using it to structure and support the implementation of the Rose report on phonics in initial teacher education (DfES - Change to the Key Stage 1 English programme of study for reading and a Foundation Stage early learning goal). The Specialist Schools and Academies Trust are using it in their work with advanced skills teachers and Enterprise networks, and many local authorities, networks of schools and individual schools are using it as a tool for creating self sustaining professional learning communities.

The research and development process involved extensive consultation and consistent attention to the practices beliefs and understandings about mentoring and coaching current across the education system. In this way the international research evidence base was contextualised for the English system and all the key agencies were involved in the process. This meant that they were both familiar with the underpinning evidence and rationale and well placed to mediate and support the roll out of the end product: the Framework. However brokerage did not stop there.

The first key feature of this construction is the brevity of the Framework. It is short, just four sides of paper. The definitions of core terms are expressed plainly and consistently and their interactions are illustrated graphically. All of these elements were specifically designed to enable users to build a shared language quickly and effectively.

To ensure shared understanding of the precise meaning of the core terms, each principle and skill is illustrated by a 3-4 minute video clip of authentic coaching or mentoring practice. Each video clip is supported by a summary of the underpinning knowledge base and by probing questions and a case study outlining the approach to mentoring and coaching in the school concerned, the socio-economic and performance context of the school, the obstacles overcome and the processes involved. The framework is also informed and supported by a series of tools and activities including learning agreements, observation frameworks, critical incident activities and questions for schools to ask of themselves and of others when seeking to interpret the framework in their own context. An interactive version of the framework and the related resources was made available free on the TDA website (<http://mclibrary.tda.gov.uk>). The core components of the Framework are illuminated by resources that demonstrate them in different contexts. It provides activities that encourage users to interpret the Framework for their own context. In other words the Framework itself was constructed as a vehicle for learning as well as for communicating the evidence-based knowledge.

Other research initiated experiments in illuminating knowledge from research by constructing toolkits include several generated within the TLRP including the pupil voice network from the first phase of TLRP (<http://www.consultingpupils.co.uk/>) and the learning how to learn projects (<http://www.learntolearn.ac.uk/>). Both projects have developed and published text based tool kits containing illustration, reflection and practical activities that teachers can use.

What all these activities share is a substantial, specialist, multi level approach to transforming knowledge and well-informed strategies for supporting the professional learning that is required when practitioners interpret and use evidence from research.

Progress has been made but there is some considerable way to go. This kind of specialist brokering was signposted in the OECD's review of education research and development in England in 2002 and noted as a well developed area of research and development in OECD's working paper in 2007.

Conclusion

This example and the preceding discussion of what is known about teacher professional learning and effective CPD have attempted to illustrate complexities of research informed change in education. Whether it is the product of legislation, or popular take up, or geared towards improved outcomes for particular students, change strategies are *more likely* to be lasting and effective if they take account of research evidence. There are no quick fixes and this is not to claim that research has all the answers. There is a large change literature across many disciplines which is well beyond the scope of this paper. Research in health, (Bell and Cordingley 2007), for example draws attention to the need to take account of potential barriers to change for health professionals - amongst many other factors. But using research evidence about effective professional development does bring discipline. It puts professional learning at the heart of educational improvement strategies as, increasingly, we recognise that better outcomes for students are synonymous with paying careful attention to the evidence both about changing teachers' practice and about the specific aspects of the teaching and learning practice being explored.

References

Assessment Reform Group. (1999). *Assessment for learning: Beyond the black box*. Retrieved 27 March, 2009, from www.assessment-reform-group.org/publications.html

Bell, M., & Cordingley, P. Centre for the Use of Research and Evidence in Education (CUREE). (2007). *Transferring Learning and Taking Innovation to Scale*. London: Innovation Unit. Retrieved 27 March, 2009, from www.cureepaccts.com/resources/publications/transferring-learning-and-taking-innovation-scale

Bell, M., Cordingley, P., Gibbons, S., & Hawkins, M. (2008) *Review of Individual Studies from Systematic Research Reviews*. Coventry: CUREE. Retrieved 1 April, 2009, from <http://www.curee-paccts.com/files/publication/1224771081/Review.pdf>

Black, P., & Wiliam, D. (1998). *Inside the black box: Raising standards through classroom assessment*. London: Kings College.

Bolam, R., & Weindling, D. (2006). *Synthesis of research and evaluation projects concerned with capacity-building through teachers' professional development*. Thousand Oaks, CA: Corwin Press.

Bruner, J. (1960). *The process of education*. Cambridge, MA: Harvard University Press

Centre for the Use of Research and Evidence in Education. (CUREE). (2007). *Harnessing knowledge to practice: Accessing and using evidence from research*. London: Innovation Unit.

Cordingley, P. (2008) *Sauce for the Goose* Coventry: CUREE. Retrieved 26 March, 2009, from <http://www.curee-paccts.com/node/631>

Cordingley P, Bell M, Isham C, Evans D, Firth A (2007) What do specialists do in CPD programmes for which there is evidence of positive outcomes for pupils and teachers? Report. In: *Research Evidence in Education Library*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London. Accessible at: <http://www.eppi.ioe.ac.uk/cms/Default.aspx?tabid=2275>

Cordingley P, Bell M, Thomason S, Firth A (2005a) 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*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London. Accessible at: <http://www.eppi.ioe.ac.uk/cms/Default.aspx?tabid=136>

Cordingley P, Bell M, Evans D, Firth A (2005b) 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*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London. Accessible at: <http://www.eppi.ioe.ac.uk/cms/Default.aspx?tabid=139>

Cordingley P, Bell M, Rundell B, Evans D (2003a) The impact of collaborative CPD on classroom teaching and learning. In: *Research Evidence in Education Library*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London. Accessible at: <http://www.eppi.ioe.ac.uk/cms/Default.aspx?tabid=132>

Cordingley, P *et al.* (2003b). *How does CPD affect teaching and learning? Issues in systematic reviewing from a practitioner perspective*, Paper presented at the annual conference of the British Educational Research Association, Edinburgh, UK, September 11 – 13.

Creasy, J., & Paterson, F. (2005). *Leading coaching in schools*. Nottingham, UK: NCSL.

Department for children, schools and families. (2007). *Change to the Key Stage 1 English programme of study for reading and a Foundation Stage early learning goal*. Retrieved 26 March, 2009, from www.standards.dcsf.gov.uk/phonics/curriculumchanges/

Desforges, C. (1995). How does experiences affect theoretical knowledge for teaching? *Learning and Instruction*, 5, 285-400.

Dewey, J. (1991). *How we think*. New York: Prometheus Books.

Department for Children, Schools and families. *Standards Site – The Research for Informed Practice Site*. Retrieved 26 March, 2009, from www.standards.dfes.gov.uk/research/

Earl, L., Katz, S., Elgie, S., Jaafar, S., & Foster, L. (2006) *How Networked Learning Communities Work: Volume 1 – The Report*. Toronto, Canada: Aporia Consulting Ltd. Accessible at: <http://networkedlearning.ncsl.org.uk/collections/network-research-series/reports/how-networked-learning-communities-work.pdf>

- Edwards, A. Sebba, J, Rickinson, M. (2007). Working with users: some implications for educational research. *British Educational Research Journal*. 33(5), 647-661.
- Eraut, M. (1994). *Developing professional knowledge and competence*. London: Routledge Falmer.
- Furlong, J., Salisbury, J., Coombes L. (2003) *Best Practice Research Scholarships: an evaluation*. A report commissioned by the DfES. Cardiff: Cardiff University School of Social Sciences.
- Galton, M. (2000). *Integrating theory and practice: Teachers' perspectives on educational research*. Paper presented at the TLRP Annual Conference, Leicester, November 1, www.tlrp.org/acadpub/Galton2000.pdf
- General Teaching Council for England. *Research of the month (ROM)*. Retrieved 27 March, 2009, from <http://www.gtce.org.uk/research/romtopics/AboutROM>
- Gardner, J. (2008). Editorial. *Cambridge Journal of Education*. 38(1), 1-4
- Guskey, T. R. (1986) Staff development and the process of change. *Educational Researcher*. 15(5), 5-12.
- Guskey, T. R. (2000). *Evaluating professional development*. Thousand Oaks, CA: Corwin Press Inc.
- Hammersley, M. (2001). On 'systematic' Reviews of Research Literatures: a 'narrative' response to Evans & Benefield. *British Educational Research Journal*. 27(5), 543-554.
- Hargreaves, D.H (1996). *Teaching as a research based profession: possibilities and prospect.*, The Teacher Training Agency Annual Lecture. London TTA.
- Hillage, J. *et al.* (1998). *Excellence in research on schools*. (Research Report RR74). London: Department for education and Employment Nutley, S.M *et al.* (2007). *Using evidence: How research can inform public services*. Bristol, UK: The Policy Press.
- Huberman, A.M. (2002). Moving towards the inevitable: the sharing of research in education. *Teachers and Teaching: Theory and Practice*, 8(3/4), 257-268.
- James, M. *et al.* (2006). Learning how to learn in classrooms, schools and networks: Aims, design and analysis. *Research Papers in Education*, 21(2), 101-118.
- Joyce, B., & Showers, B. (1988). *Student achievement through staff development*. New York: Longman.
- Marshall, B., & Drummond, M. –J. (2006). How teachers engage with assessment for learning: Lessons from the classroom. *Research Papers in Education*, 21(2), 133-149.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge creating company: How Japanese companies create dynamics of innovation*. Oxford, UK: Oxford University Press.

NTRP (2001) *Closing the gap: Increasing research impact through teacher involvement in research design and review* Paper presented at BERA conference, University of Leeds, Leeds, 13 September

Oakley, A. (2003). Research evidence, knowledge management and educational practice: early lessons from a systematic approach. *London Review of Education*. 1 (1), 21-33.

Oates, T. (2007). Protecting the Innocent – the need for ethical frameworks within mass education innovation. In L. Saunders (Ed), *Educational research and policy making*. London: Routledge, Taylor and Francis.

OECD. (2002, September). *Educational research and development in England – OECD review, Examiner's report*, Ref No. CERI/CD. Portsmouth, UK: OECD Centre for Educational Research and Innovation (CERI).

Pollard, A. (2008). Knowledge transformation and impact: aspirations and experiences from TLRP. *Cambridge Journal of Education*. 38(1), 5-22

Robinson, V. (2007). *School Leadership and Student Outcomes: Identifying What Works and Why*. ACEL Monograph Series. Retrieved 27 March, 2009, from <http://www.educationcounts.govt.nz/publications/series/2515/13723>

Ryle, G. (1949). *The concept of mind*. Chicago, IL: University of Chicago Press.

Saunders, L. (2007). Go-betweens, gofers, or mediators? Exploring the role and responsibilities of research managers in policy organisations. In Saunders, L. (2007). *Educational Research and Policy Making: Exploring the Border Country between Research and Policy*. London: Routledge, Taylor and Francis.

Stenhouse, L. (1980). *Curriculum Research and Development in Action*. Oxford: Heinemann Educational Publishers

Schulman, L.S. (1987). Knowledge and teaching: Foundations of new reforms. *Harvard Education Review*, 57, 1-21.

Sharp, C., Handscomb, G. and Webster, M. (2006). 'Broadening horizons: research-engaged schools.' Paper presented at the 19th International Congress for School Effectiveness and Improvement, Fort Lauderdale, Florida, 4 January.

Sylla, K. et al. (2004). *The Effective Provision of Pre-School Education (EPPE) Project: Final Report*. A longitudinal study funded by the DfES 1997 - 2004

Tacon, R., & Atkinson, R. (2001) *Using visual structured images for teaching mental arithmetic*. Teacher Research Grant Scheme: TTA.

Timperley, H et al. (2006). *Professional learning and development: A Best Evidence Synthesis of impact on student outcomes*, Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA, April 7-11.

Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.