Research and evidence-informed practice: focusing on practice and practitioners

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


Abstract

This paper is based on an extract from an article for the Cambridge journal of education (https://www.educ.cam.ac.uk/research/cje/) focuses on the learning processes involved in the progression from reading research texts to putting them to work in classrooms. It also considers the contribution that evidence about Continuing Professional Development (CPD) can make to our understanding of the process of transforming research knowledge into practice.

The paper proposes that the transformation of knowledge from research into classroom practice involves a mix of complex processes, some of which need specialist mediation and dedicated resource. It proposes, too, that reflecting on knowledge transformation as Continuing Professional Development (CPD) and learning helps to elucidate some of the steps on the way.

The form of research outputs

What do we know about the form that research outputs need to take in order to make an effective contribution to knowledge transformation? In England, the National Teacher Research Panel which included Teachers from the FE sector (NTRP, 2000, http://ntrp.org.uk/) analysed a range of research texts to identify writing practices likely to be accessible and useful to teachers and to draw them into exploring the implications of research findings. A study by NFER (Kerr et al.1998) echoed many of their findings. Both studies highlighted in particular the need for research writing to:

1. provide sufficient, detailed analysis and description of the teaching intervention or knowledge in action vividly to enable teachers to connect with it and to test it out for themselves;
2. provide detail about the starting points of pupils and the communities, phases or subjects involved in research outputs in order to enable teachers to interpret and adapt for their own context;
3. include a short summary of the methods;
4. layer evidence and writing so that busy practitioners can make informed choices about reading the full text;
5. provide clear pathways for finding out more about the research;
6. provide evidence about the connections between an intervention or approach and pupil learning; and;
7. ensure clear, simple, short and jargon free writing.

Such admonitions are perhaps easier to describe than to achieve, especially in the context of the pressure upon researchers for recognition in publishing regimes driven by knowledge production.

At one level, the concluding request for simple, clear, short and jargon free writing simply relates to tone and register. Who would not prefer new knowledge to be expressed thus? Clearly technical terms properly explained and defined have an important role in explicating concepts, increasing understanding and enhancing control over detail even though, to practitioners they may read as jargon. But it is certainly also the case that shorthand terms accumulate in the education community, as in all other communities. Few such terms are essential and they also create barriers to wider communication. But there are more complex factors at work here than command of prose. Clarity of writing also depends on clarity of conceptualisation and of analysis. The process of research writing is in itself often more of an analytic than a communication process. Exposing ideas to the discipline and meaning of prose is an important test of the coherence and stability of thinking. Perhaps the clarity
and brevity practitioners are seeking is sometimes only possible after a period of iterative testing and refinement of ideas in the technical journals? So for teachers wanting to use research to inform their practice there are several important questions to ask of each research text on the basis of an early sample of the writing:

- How relevant are the questions being explored to my practice?
- Is there enough detail here about the teaching and learning processes being researched to help me use this evidence to reflect on my practice?
- If the text is complex and convoluted are there some technical terms that I could assimilate quickly via the internet that will make it easier and quicker to navigate the text?
- If the text is complex and convoluted is the language actually masking some muddled thinking?

The field in which research knowledge competes and is transformed

The environment in which learning from research must take place, be interpreted and enacted has a profound influence on 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 learners know, can do, believe and care about already. Unless 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 in to pre-existing practices and beliefs. There is 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 ‘professional development and learning’ similarly highlights the importance of working with existing, structured and contextualised knowledge (Joyce and Showers 1988; Guskey 1986, 2000; CORDINGLEY et al., 2003; CORDINGLEY, Bell, EVANS et al., 2005; Bolam and Weindling, 2006; TIMPERLEY et al., 2006). So the process of transforming knowledge from elsewhere is a question of building learning and is developed cumulatively. Since the members of a learning group will have diverse experiences, knowledge, understanding and skills, the practicalities of ensuring that learning processes are cumulative will vary for particular groups of students; in other words facilitating learning in groups is context specific.

Not only does teaching and learning in and for school classrooms involve relating to multiple starting points, but knowledge that is to inform such processes has to survive in fast, dynamic interactions between learners - as mediated through multiple, second-by-second judgements and decisions by teachers. The teacher’s knowledge, plans and understanding are interpreted differently by a large number of pupils. Such variation means that the effectiveness of teaching and learning processes and the use of research based knowledge will depend upon the particular combinations of both pupils’ and teachers’ starting points, beliefs, prior knowledge and motivation.

Pupils’ responses also affect each other 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 new, well informed and creative responses from teachers. In this context, teachers need an intimate, multi layered grasp of an idea or strategy from research in all its complexity 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.
As many researchers have observed (e.g. Desforges 1995), the complexity of the knowledge demands of teaching and learning means that (both existing and new) teacher knowledge, skills and understanding must be internalised or routinised if they are to be put to work at the service of practical classroom challenges. Such challenges are manifested in the blink of an eye in interactive classroom settings. If teachers’ knowledge is not available to them equally quickly they will not be able to deploy it at all. In addition to the knowledge of pupils’ starting points discussed already, teachers need this knowledge in a range of practical forms. As Black and Wiliam (1998) have noted for example, asking deeper, open-ended questions of the sort demanded by their review of the literature on assessment makes multiple demands of teachers. Questions that will push thinking forward require good knowledge of the subject. They also require knowledge about how to challenge learners to move beyond what they know and can do already supported by scaffolding, in the form of a series of manageable steps and interaction with others (Vygotsky 1978). Good subject or content knowledge is required to form the question – to pose it, for example, through a relevant analogy or to pose it in a genuinely open and probing form to generate responses that challenge both pupils’ and teachers’ thinking. Good content knowledge is also needed to link the multiple and diverging pupil responses to a teacher’s questions back to the learning target. The knowledge field in which new knowledge is to be transformed is thus intensely populated and if knowledge from research is to flourish there, it needs to be understood and developed as an integral part of the ecosystem rather than a by product of serious endeavour from some other world.

Knowledge from research alongside other forms of knowledge

I am arguing here that knowledge from academic research does have an important role to play in teacher development but that it exists in tension or even competition with other forms of knowledge. Such competing knowledge forms might involve anything from direct evidence from a teacher’s own students to the varied forms of practical knowledge described above.

An important question for operationalising the transformation of knowledge is, therefore: how can teachers integrate these various forms of knowledge in order to put them to work in the service of young people’s learning and how can teachers be supported in doing so? The next section of this chapter explores this question in the context of evidence relating teacher change and development – or, as two recent systematic reviews (Timperley, 2007, Cordingley et al, 2007) suggest we should approach it, professional learning.

Changing routinised knowledge and strategies

Whilst the literature about internalised or tacit knowledge is extensive (Ryle, 1949), the literature about changing tacit or implicit knowledge is less so. Nonetheless, authors such as Desforges (1995), Guskey (1986), Hargreaves (1996), Huberman (2002), Eraut (1994) and Nonaka and Takeuchi (1995) all explore, in Desforges phrase, “the pull of the status quo” and the challenging nature of the process of developing or enhancing tacit knowledge. Teachers’ lack of awareness of their existing knowledge generates several key operational challenges for changing or transforming it. 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’. 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. As Marshall and Drummond (2006) point out, although 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, and several of its practices, in a recent empirical study only 20% were observed deploying the approach 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. The majority of teachers saw the protocols as an end in themselves. These teachers had absorbed key messages from research sufficiently well to be able to discuss them and to deploy the new tools and activities. But they had not as yet, understood the underpinning rationale and so
were unable to relate them to their existing beliefs about the shaping of learning and therefore to use them to change the nature of the learning experiences for their pupils.

The literature thus suggests that, to support the process of taking on board evidence or research findings and transforming them into practice, teachers need help in making their existing practices and the underpinning knowledge explicit, so that they can be compared with new approaches. At one level this simply suggests that teachers learn like everyone else - although the environment in which they deploy their learning puts particular pressure on them to move very quickly from explicit to internalised knowledge. But it is rare for discussion and analysis of the transformation of knowledge to draw upon what we know about learning in general and teachers’ learning in particular, to structure the support offered to teachers. The next section of this paper attempts to highlight key messages for knowledge transformation from that evidence base.

What is known from CPD evidence about changing knowledge?

A cumulative body of systematic reviews of the impact of CPD, involving careful sifting of thousands of studies, systematic filtering against published criteria of hundreds of studies and careful, double blind extraction, re-analysis and synthesis of data from a core of approaching a hundred studies, has been amassed over the last 6 years (Timperley, 2007, Cordingley et al., 2003, 2007; Cordingley, Bell, Evans et al., 2005; Cordingley, Bell, Thomason et al., 2005). Such reviews are developing a consistent and coherent repository of empirical evidence relating to CPD that is connected with positive benefits for teachers and for their pupils. They suggest strongly 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 and reviewing these in the context of knowledge from research and evidence about their pupils’ responses to change efforts. Such processes include support for experimenting with new knowledge and adapting or tailoring it to teachers’ own skills and their students’ needs. The CPD programmes analysed in these systematic reviews all involve, in different forms:

- identifying teachers’ starting points 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;
- encouraging experiments in interpreting, adapting and adopting new strategies in the teachers’ own school and classroom setting;
- providing support for such experiments between peers to create opportunities for discussion rooted in evidence about the learning of identifiable students. This co working also enabled the teachers to take risks (through reciprocal vulnerability) 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;
- support for such experiments from specialists to “help make the familiar strange”, i.e. probe and challenge the teachers’ responses to their students’ responses in order to help them think about why, how and where things work or don’t work. This helps 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;
- a focus on growing independence.

Such strategies are common to some extended and sustained professional development programmes but they are often falsely differentiated by acronyms, programme labels and technical terms. The teacher activities are variously described, for example, as collaborative coaching, enquiry, action research, innovation, conferencing or curriculum design or development. Specialist
contributions are also variously described as 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 supporting and facilitating pupil learning and knowledge transformation. As a teacher in the TLRP “Learning how to learn project” put it, teacher learning (or transformation of knowledge) of this kind “mirrors” pupil learning (James, 2006). What is more the CPD systematic reviews and the field work carried out to support the development of the National Framework for Mentoring and Coaching, that is used as a case study later in this article, suggest such learning influences student learning both directly and indirectly. It seems that the more explicit teacher learning of this kind is made to students, the more they come to regard sustained learning through risk taking, collaboration and deliberation about evidence as a high status activity. The more teachers experience teaching of a facilitative, inductive, enquiry and development oriented kind in support of their own learning, the more they are inclined to use such approaches with and for their students. This point is also reflected in the ninth of the ten principles of learning generated by the TLRP research (ibid) with its assertion that effective teaching and learning for pupils “depends on teacher learning”.

The nature of specialist contributions

So far this paper has explored the context for knowledge transformation though the lens of the teacher’s own development and learning. But in understanding the transformation context it is also important to focus on the nature of the knowledge and the form it takes. The fourth EPPI registered review of the impact of CPD explores specifically the specialist contribution to CPD in programmes which are judged to be effective for teachers and their students (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, (i.e. the actions that they take that most closely resemble the process of communicating research findings) the review highlights the importance of complementary, ongoing specialist activity geared to supporting the complexity of teacher professional learning. 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 turn knowledge from research inside out and understand it in the context of their own previous practice and, crucially, in the context of 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 in another - to support specific learning needs for target groups of students and their teachers. Transformation of knowledge from research for impact seems to need to be constructed as a process of supporting and informing professional learning.

In the introduction to this section I posed key questions for operationalising the transformation of knowledge in terms of supporting teachers to integrate the various forms of knowledge. Part of the answer lies in the construction of this professional learning pedagogy. What might such a pedagogy look like? The final section of this paper explores this in theory and in practice, through a case study.

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

I have argued so far that the process of transforming knowledge from research into practice involves a complex mix of activities relating both to the media that carry the knowledge and the learning and development processes though which knowledge is acquired, understood, interpreted and enacted. Texts can certainly help and there is now, as explained earlier, a range of different approaches which attempt to contribute to knowledge transformation and professional learning by sparking interest and activity through text and by improving access. But as the earlier analysis of CPD professional learning shows, transformation of knowledge extends beyond such useful, catalysts. It involves
sustained and multi-layered efforts by professional learners. Taken together these components constitute a range of often specialist mediation and brokerage skills. The author’s own organisation, CUREE, attempts to contribute to the unfolding picture, drawing quite explicitly on the evidence summarised in this paper and a conceptualisation of the process as one of professional learning as is illustrated in the coaching case studies.

In late 2003, following the publication of the first two systematic reviews of the impact of CPD, the evidence of the benefits of collaboration between professional learners came to the attention of the Department for Education and Skills. As a result the Centre for the Use of Research and Evidence in Education was commissioned to use this knowledge, coupled with research into current practice, to create a National Framework for mentoring and coaching 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 via:

- extensive consultation to identify sites of interesting practice;
- filtering of documentary and telephone 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 3 systematic reviews and synthesising this with evidence from the field work;
- identifying and illustrating current approaches to mentoring and coaching to enable national agencies to identify and exchange effective practices and areas for development; and
- extensive consultation to test emerging principles and analysis.

Through this process evidence was transformed into a set of core principles, a summary of the core 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. Brevity and clarify were identified as the key to securing ownership and use. Each element was one page long and written in plain language with careful attention to layout, use of graphics to model connections and relationships and coherence.

The framework is now being actively used in a range of ways within England. It sits, for example, at the heart of the Teacher Learning Academy of the General Teaching Council and at the core of the National College for School Leadership’s materials on leading coaching (Creasy & 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/support the implementation of the Rose report on phonics in initial teacher education (February 2006 new website). The Specialist Schools and Academies Trust are using it for 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.

What elements in the design of the Framework help to explain its widespread use in transforming knowledge about CPD in practice?
Perhaps the first key feature is the brevity of the Framework. It is short, just four sides of paper. It is reasonable to expect practitioners to read all of it if they are focused on planning and developing professional learning. 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.

But whilst it is easy to talk about and argue the values of motherhood and apple pie the key question is what is meant by these core terms. To respond to this question each principle and skill is illustrated by a 3-4 minute video clip of unrehearsed coaching or mentoring practice. Each video clip is in turn supported by a summary of the underpinning knowledge base and by probing questions and a researched case study outlining the approach to mentoring and coaching in the school concerned, the social economic and performance context of the school, the obstacles overcome and the processes involved. The framework as a whole is informed and supported by summaries of four large scale empirical studies and a series of tools and activities encountered in the field work or developed expressly for the purpose 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 is available free on the TDA website (http://mclibrary.tda.gov.uk). In other words, the core components of the Framework are illuminated by resources that demonstrate them in context and provide activities that encourage users to adapt and interpret the Framework for their own context.

Other experiments in illuminating knowledge from research from toolkits have been 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 toolkits 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 a necessary part of the process involved 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 R&D in OECD’s working paper in 2007.

**Implications for research and evidence informed practice**

This paper has offered a brief account of the complexity of practitioner knowledge and of the even more complex process of developing such knowledge so that it can be skilfully employed in dynamic interactive settings. It illustrates the complex and sustained effort needed to support practitioner learning from research outputs and emphasises the need for recognition of the active role that teachers play in the process and the related need for specialist mediation and brokerage.

All research, however large-scale, brilliantly conceived, executed and communicated, needs to be actively interpreted by users for their own context. This is not to say that policy makers at school, local, regional or national level cannot intervene in response to large-scale research findings. Indeed a National College of School Leadership analysis of research that has been “Disseminated for Impact” (Blase and blasé, 2004) showed, amongst other things, that a key role for school leaders and leaders of CPD is to introduce teachers to research findings that are closely related to their current needs and interests. It suggested that generic policy interventions will not work as recipes - they will always depend upon skilled teacher interpretation and judgement if they are to impact upon day-to-day practice.
This in turn suggests that research and evidence-informed policy makers and those advocating research and evidence informed practice have to establish processes and systems that recognise the needs of individual teachers in individual classrooms. Professional learning, like student learning needs to be personalised, within their professional context either by the learners themselves or by partnerships of learners, CPD facilitators, researchers and school leaders.

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