

The contribution of educational research to teachers' professional learning - philosophical understandings

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Abstract

In this paper, we argue from principle that teacher education must enable a positive relationship between educational research and teaching knowledge and practice. We discuss two popular conceptions of good teaching, which conceive of the teacher as craft worker and as executive technician, and suggest that, while each of these aspects of knowing reflects something of the qualities that good teachers need, any one on its own is insufficient. In contrast to such mono-dimensional conceptions, a researched-based textured notion of professional judgement encompasses a complementary and mutually enriching relationship between different aspects of professional knowledge and practice. We identify three interconnected and complementary aspects of teachers' professional knowledge: *situated understanding*; *technical knowledge*; and *critical reflection*. Accordingly, teaching as professional endeavour demands of teachers practical know-how, conceptual understandings of education, teaching, and learning, and the ability to interpret and form critical judgements on existing knowledge and its relevance to their particular situation. We conclude that in principle research can both enrich and be enriched by teachers' professional knowledge and practice but that to build this relationship in a holistic way into teacher education programmes and partnership models presents considerable practical challenges.

Keywords

teacher education; professional knowledge; educational research; practice; professional judgement

Introduction

This paper is concerned with the knowledge that educational research generates and the knowledge that teachers need to undertake their job well. Can they reinforce each other? If so, what form should teacher education and educational research take to facilitate that process of mutual enrichment? We explore these key issues, drawing on literature that addresses philosophical issues in the nature of professional knowledge.

Educational research encompasses a diverse range of modes of inquiry (Bridges, Smeyers and Smith, 2009; Gibbons et al, 1994) and there are disagreements about what its aims should be (Lagemann, 2000). It may be concerned primarily with developing new knowledge with reference to the academic disciplines, or with education as a discipline in its own right (see e.g. Ellis, 2012; Furlong, 2013 for different perspectives on this issue). It may aim to improve teaching and learning and school effectiveness (what Whitty, 2006, refers to as ‘educational research’), or to make better sense of educational practices and institutions, as a valuable and intellectually rigorous and stimulating activity for its own sake (what Whitty, 2006, calls ‘education research’). The definition of research we have adopted in this paper is at once straightforward and broadly inclusive: ‘systematic inquiry’ that is ‘made public’ and exposed to collective criticism (Stenhouse, in Rudduck and Hopkins, 1985, p. 120) whether or not it carries direct practical implications.

Diverse perspectives on educational research have been thrown into sharp relief by ongoing debates in the UK on its quality, following the publication of critical and controversial reports over a decade ago by OFSTED (Tooley and Darby, 1998) and the DfEE (Hillage, Pearson, Anderson, and Tamkin, 1998), analysed in Oancea (2005). Doubts about the value and relevance of educational research to inform practice and policy in education and in teacher education are not new (e.g. O’Hear, 1988; Lawlor, 1990) and have fueled this debate.

The idea that educational research is irrelevant to practice enjoys wide support, including critiques from within the educational research community itself. It has been suggested, for example, that educational research cannot be argued from principle to contribute to school teaching because both research and teaching are historically-informed practices steeped in contextual contingencies and in “practical common sense” (e.g. Carr, 2006). Alternative arguments held that the primary function of academic research in education is to contribute to a body of disciplinary knowledge (Hammersley, 2008), not to serve educational practice.

Others have disagreed, arguing for a necessary and significant relationship between educational practice and research. Good research, they suggest, is uniquely well-placed to provide a valid and insightful account of educational reality at a theoretical, level, which provides a serious and usually reliable warrant for professional action as well as decision-making by policy makers (Bridges, Smeyers and Smith, 2009). Those who support this role for educational research also believe its quality should be assessed on these grounds, suggesting that the criteria of good research is whether or not it is trustworthy, valid, reliable, grounded (Strauss and Corbin, 1998), dependable or believable (Hodkinson, 2004; Lincoln and Guba, 1985).

Is this position correct? Can a positive relationship be assumed between educational research and practice? In this paper we argue from principle that it can, identifying a positive relationship between research findings and practitioner's knowledge and, by extension, between practitioners' engagement with or in research and educational practice. Arguably this paper is needed at this time in the history of teacher education in the UK because that relationship is yet to be made explicit with sufficient clarity or coherence. We make our argument in three parts.

First, we identify three interconnected and complementary aspects of teachers' professional knowledge: situated understanding, technical knowledge, and critical reflection. We sketch briefly the relationship in principle between these forms of knowing and research. With reference to two popular conceptions of the good teacher – as craft worker and executive technician – we suggest that while each of these views reflects something of the qualities that good teachers need, any one on its own is insufficient.

In the second part of our argument we suggest that professional judgement, which distinguishes the very best teachers from others, comprises a complementary relationship between all three dimensions of professional knowledge. Research can play a complementary role in relation to each of these dimensions and enhance their joint effectiveness.

In the final part, we go on to consider what form teacher education must take if it is to foster professional judgement and what role research might play in fostering it. We conclude that in principle research can both enrich (and be enriched by) teachers' professional knowledge, but that to build this relationship in a holistic way into teacher education programmes and models presents considerable practical challenges.

Three aspects of teachers' professional knowledge

Three different and influential aspects can be found in philosophical and wider educational literature concerned with articulating what professional knowledge teachers need to undertake their work. We sketch these briefly and explain, in each case, the potential relationship between professional knowledge and research.

a. Situated understanding/ tacit/ intuitive knowledge

We take situated or tacit knowledge in this context to mean that element of 'know-how' which teachers clearly manifest in their practice but which cannot be rendered explicitly in discourse about it (Read and Hutchinson, 2011). Tacit knowledge is a concept developed in earlier work by Polanyi (1958) and, arguably, drawn on by Dreyfus and Dreyfus (1996) and Eraut (2000) in their accounts of professional expertise, which include tacit situational understanding, routinized procedures and intuitive decision-making. It can be a problematic concept, if it is taken to mean an ineffable form of propositional knowledge. However, if a looser connection is made between successful professional action and the kinds of knowing on which it relies, it need not be so troublesome. There are some affinities between this view of tacit knowledge and the account of know-how developed by Ryle (1949), who places an emphasis on the ability to act, while not having to articulate how one is acting.

Another popular approach, which a number of philosophers have pursued to describe situated understanding of this kind, has been to describe it as a form of *phronesis* (commonly translated as 'practical wisdom'). *Phronesis* refers to a capacity to grasp the salient features of a situation, deliberate imaginatively and holistically and to make ethically and practically sound judgments in specific situations. As teachers deliberately seek to bring about certain outcomes rather than others through their work, they are concerned with doing the right thing for its own sake (Dunne, 1993, p. 265) and therefore making ethical choices. Their knowledge contains a moral as well as a practical dimension in paying attention to the values that inform their practice, identifying certain goals rather than others, and in the attitudes they adopt towards the particular pupils they teach. In short, teachers need to be able to negotiate the complexity of classroom decision-making, where there may be no clear-cut answers, and to reflect on the importance of what they do in the process.

Teachers may become practically wise, or *phronimos*, through experience of deliberating and making judgments about educationally wise actions, through learning from the virtuosity of

other professionals, and through care for their own development as resourceful, discerning and insightful professionals (Biesta, 2012; Nussbaum, 1990). Many advocates of this view question the need for any particular contribution from educational research, tending to be sceptical towards the relevance of findings from empirical educational inquiry to teachers' practice and development (e.g. D. Carr, 2000, 2003; W. Carr, 2006; Hogan, 2012). Others, while more supportive of the contribution research might make to professional knowledge, nevertheless demand changes in how research is conceived and conducted, in order to bring it in closer interaction with practice. Flyvbjerg (2001), for example, has argued for a '*phronetic* social science', centered on 'reflexive discussion and analysis of values and interests' (pp.3-4). Others note complementarities between practical, technical and theoretical knowledge (Dunne, 1993; MacIntyre, 2007; Nussbaum, 1990; Oakeshott, 1962). We will return to this view later in this paper.

b. Technical 'know how'

'*Techne*' is the term Aristotle uses to describe knowledge concerned with creating either objects or particular states of affairs, likening such knowledge to that of an expert craft worker, but also extending it to fields like medicine, military strategy, music, and 'productive' arts like architecture or sculpture. This extension suggests that Aristotle sees *techne* as more than a 'knack', or a purely instrumental execution of procedures, but rather as a form of excellence that combines the ability to grasp and pursue an end with 'a clear conception of the why and wherefore, the how and with-what of the making process' involved in bringing about that end (Dunne, 1993, p. 9). Thus, *techne* enables the practitioner to plan and control a process; also to explain and predict the success or otherwise of an intervention. In Nussbaum's (2001) words, technical knowledge is universal, teachable, and precise.

The suggestion that teachers need mastery of relevant technical knowledge to undertake their responsibilities well, for example knowledge of the content of the curriculum and how to mediate it, seems relatively uncontroversial. Technical knowledge and its skilled application help teachers to exercise sufficient control over the contingencies of their work (Nussbaum, 2001) to be able to achieve goals and define standards for success and measures of progress. They can articulate procedures for attaining these standards, explain what intervention

worked, in what circumstances, and they can train others in the application of this procedural knowledge.

c. Critical reflection

A further attribute of the professional knowledge of teachers, one which has been argued to distinguish the best teachers from others, is their capacity for critical reflection (Brookfield, 1995; Smyth, 1989). Reflection implies that the teachers review thoughtfully and systematically what they have done in the past with a view to sustaining or improving their practice in the future. How does reflection help teachers to operate effectively though, and how might research-engaged reflection augment their professional development? There appear to be three established responses to this question in the philosophical and wider educational literature: an emphasis on reflection-in-action; a description of reflecting as the exercise of scholarship; and a commitment to the value of teachers' systematic enquiry as the basis for reflection on practice.

One interpretation of critical reflection, developed influentially by Schön (1983), identifies the importance to teachers of reflective thinking as *reflection-in-action*, in terms of a cycle involving: practice; reflection, during and after practice; and the recursive effect of reflection on further practice. These interconnected stages, it is suggested by this account, inform the 'reflective practitioner's' own conception of him/herself. It is important to realise that, for commentators like Schön, reflection understood along these lines need not involve consideration of research-based knowledge because it is based on the professional's own actions within the work environment. Schön (1983) largely ignores the role of theory in reflection, but partial acknowledgment of it is made in Schön (1987), by arguing that the professional education of science teachers should 'combine the teaching of applied science with coaching in the artistry of reflection-in-action' (p. xii).

A second established view of reflection is best described as the professional exercise of '*scholarship*' (Boyer, 1990). Teachers might reflect critically on their practice in the light of what has been thought and said about teaching in the present as well as in the past in order to inform future thinking about what they are doing (Shulman, 1987). This approach to reflection, unlike the first, does allot a significant role to educational theory, and has underpinned the theoretical component of university-based teacher education practice since the 1960s.

The particular examples of scholarship on which teachers have been asked to reflect have shifted over time. Many years ago, this would have comprised a detailed and systematic encounter with key texts in the educational foundations. More recently university-linked PGCE programmes have taken a more thematic approach to engagement with scholarship. New teachers have been encouraged to engage with selected readings, policy documents and official recommendations that help illuminate their thinking on the particular issues in classroom practice which concern and affect them most.

As well as considering the results of systematic enquiry conducted by other people, a third form of critical reflection concerns reflection as a *systematic enquiry* that teachers themselves might undertake as researchers on their own practice. Systematic enquiry was at the core of Stenhouse's (1975, drawing on Hoyle, 1972) influential notion of the teacher as 'extended professional'. This model encompasses 'systematic self-study', as well as 'the study of the work of other teachers' and the 'testing of theory in practice', with the support of specialist education researchers (Stenhouse, 1975, p.144). While the teacher-as-scholar makes use of the research findings of professional researchers, the teacher-researcher is him/herself generating research. S/he undertakes systematic enquiry into his or her own practice, including not just the teacher's work in the classroom, but the assumptions and values that underpin it (Carr and Kemmis, 1986; Elliott, 1991).

Teacher enquiry is a form of education research focused very specifically on those problems practitioners encounter in their particular classroom setting(s) and the actions they take to solve them by the introduction of positive change (Carr and Kemmis, 1986). For those committed to action research, this approach is about more than knowing; it becomes for them a way of being in the classroom and the school. Assuming the habit of inquiry as an ongoing commitment to learning and developing as practitioners, action research assumes that teachers are the agents and source, and not the objects, of reform. They feel empowered as a result and report becoming energized and more autonomous in their professional judgements (Carr and Kemmis op.cit.).

Carr (2006) goes as far as to argue that the kind of educational theory that other forms of educational research might generate is irrelevant to teachers' critical reflection. His view is in tension with the advocates of action research, who see teaching and research as inseparable and emphasise the collaboration between teacher researchers and 'specialist' researchers

(Elliott, 1991). According to Carr (2006, p. 147), ‘educational theory cannot inform practice because it is itself a form of practice’. By a ‘practice’, he means (after MacIntyre, 1981) that societies are made up of a series of ways of being and doing, each with their own goals and standards of excellence. The logic underpinning this argument has been challenged by the observation that, while education and research may be two separate practices, societies are made up of many different kinds of practices that are not hermetically sealed. Rather, they are capable of affecting each other in different ways (see Hager, 2011, for a development of this critique).

Conversely, if educational research and educational practice are indeed separate (albeit related) and with their own goals and standards of excellence, this implies that a teacher who is also a researcher will be aiming for excellence in two highly demanding but distinct spheres. This highlights the potentially unrealistic demands being made of teachers when they are asked to undertake both roles at once, particularly at an early stage in their career. At the same time, they can be significant partners in educational research and, over time, become both teachers and educational researchers.

The textured nature of professional judgement

We argue next that these three distinct aspects of teachers’ professional knowledge operate in complementary and mutually enriching ways to inform good teachers’ practice. We are not alone, or first, in believing it possible to combine insights from all three of the notions of professional judgement we have just considered, arguing that none on its own proves sufficient. For example Oakeshott (1962), like Dunne (1993), argues that teachers’ knowledge of rule and theory-based procedures (technical knowledge) requires a complementary relationship with situational awareness (practical knowledge). Nevertheless, widespread and influential conceptions of teaching can isolate these dimensions of teachers’ professional knowledge in ways that are unhelpful (Winch 2014); we will turn to some of these conceptions in this section.

a. Teaching as a ‘craft’

A popular conception of teaching treats it as analogous to a version of a craft occupation such as pottery or carpentry, but describes it in ways that fail to do justice either to the complexities of expert craft work (see above) or to teaching. This conception overplays the value of situated professional knowledge at the expense of technical know-how and critical

reflection. In doing so, it isolates situated understanding from other necessary aspects of teachers' knowledge, leaving little role, if any, for research-based knowledge in teacher professionalism.

Learning to teach is portrayed narrowly as the acquisition of relevant know-how through the experience of watching and learning from experienced practitioners. If any systematic underpinning knowledge is associated with teaching as a craft narrowly conceived, it is concerned with knowledge of subject. Awareness of the needs of the individual class and pupils are recognised as significant on this account but understood as being developed only through the experience of teaching and receiving the counsel of experienced teachers, without reference either to the findings of recent research or a wider theoretical literature.

At the same time, the simplified definition of craft underpinning this conception also fails to account for the ethical complexities of practical judgment. Although it agrees with the family of approaches which contend that the exercise of *phronesis* is sufficient for the development of professional expertise, it reduces practical wisdom to mere flair or 'commonsense'. For example, Barrow (1976, 1984) argued that, as generalisations in education are always false, commonsense is a sufficient source of teachers' professional knowledge.

However, there are difficulties with this contention. What is described as 'commonsense' may denote little more than distilled theoretical knowledge and values derived from popularisations, the source of which might be research, filtered, whether directly or indirectly, through staffroom conversation rendered into homilies, maxims and reactive attitudes. It is similar to what Burke (1790) approvingly calls 'prejudice'. The problem with commonsense, as Keynes (1936, Ch.24) argued in relation to the 'commonsense' of businessmen, is that it usually consists of the unconscious repetition of theories that have already been discredited. It is an inherently conservative and potentially unreliable basis for professional judgement, which needs to be informed by new ideas that are of sound provenance on a regular basis.

In contrast, Gramsci (1975) offers a useful and alternative distinction between commonsense and *good sense*, which, it may be argued, is precisely the kind of approach to action that takes into account the exigencies of particular situations in shaping professional action. Unlike commonsense, the use of good educational research by teachers need not be in tension with the exercise of good sense. Indeed it might be enhanced by it.

b. Teaching as the application of technical protocols

A second popular conception of the good teacher, one that Winch (2014) has called the ‘executive technician’, emphasises the contribution of teachers’ technical know-how to effective classroom practice. While this view of teaching recognises the value of empirical educational research findings, it does not deem it necessary, or even desirable, for teachers to access and interpret this research for themselves. Educational researchers generate findings, while educational technologists and curriculum designers interpret the research into useable protocols for the classroom. Finally, the ‘executive technician’ teacher, armed with technical know-how alone, applies it to the classroom without the benefit of critical reflection or situational awareness, thus a minimum of interpretation. This last qualification is important to this view of the teacher as executive technician, as deviation is likely to diminish the protocols’ effectiveness.

Advocates of the executive technician approach to teaching appear to share assumptions held by those who are sceptical about the value of educational research for teachers’ professional knowledge (see above). Educational research must deliver certainty or it must be discarded. The advocate then proclaims the certainty of a given piece of research and derives maxims applicable in all similar circumstances. The craft-based and executive technician views of educational research are two sides of the same coin. The former conception responds to the uncertainty of research findings by placing faith in commonsense and experience and denying the value of research; the latter responds to it by calling for strong statements of ‘what works with whom under what conditions and with what effects’ (Hargreaves, 1996) and dismissing any research that doesn’t deliver them.

However, teachers are not going to be given a recipe for ‘what works’ from research; by its nature, educational research cannot provide certainty of outcome. What it can achieve is to provide reasonable warrant for decisions that must be taken by teachers, in full knowledge of the circumstances in which they work (Bridges, Smeyers and Smith, 2009). Thus the claims of both the ultra sceptics and those who think that research findings can provide teacher-proof maxims for action are over- played. Eraut (2000) puts this well when he describes professional practice as combining three modes of cognition: instant/reflex, rapid/intuitive, and deliberative/analytic. He notes that recognition of the limitations of research evidence as

a basis for practice does not imply that we should replace it with tacit knowledge in accounts of professional practice (and professional learning).

c. Teaching as a professional endeavour

In contrast to each of these narrow conceptions of teaching, teaching as a professional endeavour combines all three aspects of knowledge together in sound judgement. Crucially, good teachers can exercise their own judgement in the classroom and make decisions as to whether and how research-based considerations are relevant to how and what they teach.

First, engagement with research, in its diversity of modes, and awareness of research processes and findings may contribute to the richness of reflection required in practical deliberation. As such, it will not replace practical judgment, but may feed into it, for example into the ways in which practitioners discern the salient features, frame concrete problems, and challenge and authenticate their unfolding understanding of the situation in which they find themselves (Oancea and Furlong, 2007). At the same time, research itself would be enriched, through closeness to the complexities and immediateness of practice, for example by refining its capacity to capture and retell narratives of experience in ways ‘that will not debase [their] value, or simplify [their] mystery’ (Nussbaum, 1990, p. 104).

Second, engagement with or in research has the potential to inform and improve teachers’ technical knowledge. It can offer them potential reference points in arbitrating decisions about appropriate interventions, and immediate practical toolboxes for implementing them (Hattie, 2012). Research that is widely recognised by those in the academy as being of high quality is capable of providing warrants for action in professional situations, albeit in the form of provisional corroboration, rather than as statements of certainty (Bridges, Smeyers and Smith, 2009).

Conversely, capturing teachers’ reflection on their warrants for action systematically can also be beneficial for the interpretation of research, because it may validate or invalidate research-based readings of pedagogical situations. Even in the case of high quality research, those warrants - if they are to result in effective action - need to be mediated by the demands of particular pupils, classrooms, or curricula, and re-contextualised within a particular school’s normative and empirical environment. They cannot be pre-packaged in ‘teacher proof’

maxims for action, if we are to have teachers who can make defensible judgments about the ways in which they teach.

Thirdly, good teaching, rather like medicine, engineering or the law, draws on a body of theory that has been mastered by teachers through years of study and reflection so that they are able to use it appropriately in their day-to-day professional action and decision-making. As we saw, reliance on commonsense frequently involves using research of doubtful quality that has been distilled into folk maxims. It follows from this that if teachers are to discriminate autonomously between good sense and commonsense, at the very least they will need to know and understand the difference between high quality and poor quality research. If they – and the school leaders and policy makers who determine to a lesser or greater extent what teachers do – cannot do this, they run the risk of compromising quality in education as well as wasting precious public resources.

Thus, professional practice makes the following demands of teachers: practical understanding and know-how; a good conceptual understanding of education and teaching; and the ability to understand, interpret and form critical judgements on empirical research and its relevance to their particular situation. The professional teacher exercises discretion and judgment to evaluate educational research. S/he mediates her research-based knowledge drawing on awareness of the particular needs of the class(es) taught, as well as individual pupils.

These observations suggest that good teachers need to engage actively with educational research; rather than replacing the irreducibly craft-based elements of their work, an iterative research-teaching relationship can support and expand them. Teachers should be able to understand and evaluate the relevance of research findings to their own situation. Their reflective abilities should bring together their own experience and the deliverances of research to enable them to determine both short and long-term courses of action.

This may mean they need to engage critically with false research as part of their professional development. For example, they need to learn that verbal deficit theory prescribes certain classroom practices but that this theory has been refuted by good, subsequent research evidence (e.g. Tizard and Hughes, 1984). In the light of this understanding, they may question received wisdom about particular classroom practices, as well as sharpening their critical interpretation of research evidence.

We have argued in this section that the professional conception of teaching acknowledges that systematic knowledge can have a valuable role to play in forming professional judgment and action. Educational research has a potentially important role in developing that knowledge. However, it needs to be integrated with situational awareness and practical know-how, and cannot give clear protocols for action in every circumstance.

Possible implications for teacher education in the future

As conjectured above, one significant problem that the educational community may face when articulating the role of research in teachers' professional learning is a widespread, popular expectation that educational research is only worthwhile when it produces *certainty* about what to do. When it does not, then it may be readily dismissed because it is perceived as being useless. This view would be mistaken; as Aristotle pointed out, a mode of enquiry can only yield the degree of certainty that is appropriate to that particular mode. It would be unrealistic and misleading to judge the value of all educational research solely with reference to a narrow tradition of positivist research in the physical sciences. This does not mean that in educational research we give up on either objectivity or truth, rather that we are more careful in the way in which we derive conclusions from research. Moreover, that the promotion of public understanding and impact of research in the social sciences must continue to pursue the argument for taking account of situational complexity, the fallibility of methods and the possible contestability of interpretations.

In their study of constituents of excellence in applied educational research, Oancea and Furlong (2007) urge that consideration be given not only to its trustworthiness, fitness for purpose or, as funders of research have it, to value for money, but also to issues of dialogue, deliberation, participation, ethics and personal growth. They introduce the notion of a complementarity between three domains of excellence in applied and practice-based research: theoretical (*episteme*); technical (*techne*); and practical (*phronesis*). This proposal accords well with the argument presented here. Theoretical knowledge derived from empirical and conceptual research is apt for use in education through the development of pedagogies, curricula and forms of assessment. These, however, are incomplete if they are not integrated with experience and situational awareness.

There is scope for further, detailed research into how teachers make decisions and the role that educational research does or does not play in their decision-making. We will then gain a

clearer idea of how and why engagement with or in research matters for teachers' professional practice. Proposals have ranged from arguments for the direct involvement of teachers not only *with*, but also *in*, research (following the example of Stenhouse, 1975, Elliott, 1991 and others) on the one hand; to arguments for 'mobilising' more effectively the knowledge that research generates so that it exercises a more profound impact on policy and practice, on the other (Phipps et al, 2012). Some of these proposals have also worked the other way round, starting with considerations of practical relevance (often defined as 'what works' – Hargreaves, 1996) in order to shape the agendas of practical or practice-based educational research.

These considerations lead us to believe that partnerships between teachers and professional researchers will become increasingly important in order to ensure a mutually enriching relationship between educational research and educational practice. Several practical ways in which initial and continuing teacher education can recognise and benefit from the contributions of research to teachers' professional knowledge, may include:

- 1] Aiming for models of initial teacher education that develop professional teachers who are scholars of educational research.
- 2] Developing post-qualification Masters level programs that endow teachers with the capacity to carry out practically based research either in partnership or through supervision with a higher education mentor.
- 3] Creating a track to a higher-level qualification for those teachers who wish to conduct, commission and evaluate research in educational settings independently and to advise on its implications for practice.

Conclusions

We argued in this paper for a textured notion of teachers' professional knowledge, which allows for constructive relationships with research knowledge. Engagement with/in research and awareness of research processes and findings may contribute to the richness of reflection required in teachers' practical deliberation, while also enriching research itself through bringing it closer to the fluidity and immediateness of practice. Further, research can contribute to teachers' technical knowledge by offering them warrants for action, reference points for decisions, and practical toolboxes; conversely, teachers' systematic reflection on

their professional action can be beneficial for the refinement and interpretation of research-based readings of pedagogical situations. And finally, a body of theory is important in enabling teachers to discriminate autonomously between good sense and commonsense; the professional teacher exercises discretion and judgment to evaluate educational research.

None of the suggestions we made implies that teacher education should not be practically oriented. We believe that the link between teacher education and higher education is vital, but that it can be attained through a range of models, including both apprenticeship and internship models. The textured nature of teachers' professional knowledge requires a textured model of teacher education, using past experience and empirical and philosophical understanding, supported by evidence from educational research, to develop further creative and educationally meaningful partnerships.

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References

- Aristotle (transl. 1925). *The Nichomachean Ethics* (D. Ross, transl.). London: Dent.
- Barrow, R. (1976). *Common Sense and the Curriculum*. Brighton: Harvester.
- Barrow, R. (1984). *Giving Teaching Back to Teachers*. Brighton: Harvester.
- Biesta, G. (2012). The future of teacher education: Evidence, competence or wisdom? *Research on Steiner Education*, 3(1), 8-21. Retrieved from <http://www.waldorflibrary.org/journals/145-rose-research-on-rudolf-steiner-education?layout=blog>.
- Bridges, D. Smeyers, P. & Smith, R. (2009). *Evidence-Based Education Policy: What evidence? What basis? Whose policy?* London: Wiley-Blackwell.
- Brookfield, S. (1995) *Becoming a Critically Reflective Teacher*. San-Francisco: Jossey-Bass.
- Burke, E. (1790). *Reflections on the Revolution in France*. London: Penguin.
- Carr, W. (2006) Education without theory? *British Journal of Educational Studies*, 54, 136-159. DOI: 10.1111/j.1467-8527.2006.00344.x.
- Carr, W. & Kemmis, S. (1986). *Becoming Critical: Education, knowledge and action research*. Lewes: Falmer Press.
- Carr, D. (2000). *Professionalism and Ethics in Teaching*. London: Routledge.
- Carr, D. (2003). *Making Sense of Education. An introduction to the philosophy and theory of education and teaching*. London: Routledge.
- Department for Education (2010). *The Importance of Teaching*. White paper Cm 7980. London: DfE.
- Department for Education (2012). *Teachers' Standards for England*. London: DfE.
- Dreyfus H. & Dreyfus, S. (1996). The relationship of theory and practice in the acquisition of skill. In P.Benner & C.A. Chesla (Eds) *Expertise in Nursing Practice*. New York: Springer.
- Dunne, J. (1993). *Back to the Rough Ground: 'Phronesis' and 'techne' in modern philosophy and in Aristotle*. Notre Dame, IN: The University of Notre Dame Press.
- Elliott, J. (1991). *Action Research for Educational Change*. London: Allen & Unwin.
- Ellis, V. (2012). Living with ghosts: 'Disciplines', envy and the future of teacher education. *Changing English: Studies in Culture and Education*, 19, 155-166. DOI: 10.1080/1358684X.2012.680758.
- Eraut, M. (2000). Non-formal learning and tacit knowledge in professional work. *British Journal of Educational Psychology*, 70, 113–136. DOI: 10.1348/000709900158001.
- Flyvbjerg, B. (2001). *Making Social Science Matter: Why social inquiry fails and how it can succeed again*. Cambridge: Cambridge University Press.
- Furlong, J. (2013) *Education – An Anatomy of the Discipline*. London: Routledge.
- Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P. & Trow, M. (1994). *The New Production of Knowledge: The dynamics of science and research in contemporary societies*. Thousand Oaks, CA: Sage.
- Gramsci, A. (1976). *The Prison Notebooks*. London: Lawrence and Wishart.
- Hager, P. (2011). Refurbishing MacIntyre's account of practice. *Journal of Philosophy of Education*, 45, 545–562. DOI: 10.1111/j.1467-9752.2011.00810.x.

- Hammersley, M. (2008). Troubling criteria: A critical commentary on Furlong and Oancea's framework for assessing educational research. *British Educational Research Journal*, 34:6, 747-762. DOI:10.1080/01411920802031468.
- Hargreaves, D. H. (1996). *Teaching as a research based profession: Possibilities and prospects*. London: Teacher Training Agency.
- Hattie, J. (2012) *Visible Learning for Teachers: Maximizing impact on learning*. Abingdon: Routledge.
- Hillage, J., Pearson, R., Anderson, A., & Tamkin, P. (1998). *Excellence in Research on Schools*. Research Report RR74. London: Department for Education and Employment.
- Hodkinson, P. (2004). Research as a form of work: Expertise, community and methodological objectivity. *British Educational Research Journal*, 30, 9-26. DOI: 10.1080/01411920310001629947.
- Hogan P. (2003). Teaching and learning as a way of life. *Journal of Philosophy of Education*, 37, 2, pp. 207-223.
- Hoyle, E. (1972). *The relationship between creativity and the social organisation of the school*. Working paper for creativity of the school project, CS/72/14. Paris: OECD/CERI.
- Keynes, J.M. (1936). *The General Theory of Employment, Interest and Money*. New Delhi: Atlantic (reprinted 2006).
- Lagemann, E. C. (2000). *An Elusive Science: The troubling history of educational research*. Chicago, IL: University of Chicago Press.
- Lawlor, S. (1990) *Teachers Mistaught: Training in theories or education in subjects?* London: Centre for Policy Studies.
- Lincoln, Y. S, & Guba, E. A. (1985). *Naturalistic Inquiry*. Beverly Hills, CA: Sage.
- MacIntyre, A. (1981) *After Virtue*. London: Duckworth.
- Nussbaum, M. (1990) *Love's Knowledge. Essays on philosophy and literature*. Oxford: Oxford University Press.
- Nussbaum, M. (2001) *The Fragility of Goodness: Luck and ethics in Greek tragedy and philosophy*. Cambridge: Cambridge University Press.
- Oancea, A. (2005). Criticisms of educational research: Key topics and levels of analysis, *British Educational Research Journal*, 31, 157–183. DOI: 10.1080/0141192052000340198.
- Oancea, A. & Furlong, J. (2007). Expressions of excellence and the assessment of applied and practice-based research. *Research Papers in Education*, 22, 119–137. DOI:10.1080/02671520701296056.
- Oakeshott, M. (1962). *Rationalism in Politics*. London: Methuen.
- O'Hear, A. (1988). *Who Teaches the Teachers?* London: Social Affairs Unit.
- Phipps, D.J., Jensen, K.E., & Meyers, G. (2012). Applying social sciences research for public benefit using knowledge mobilization and social media. In A. Lopez-Varela (Ed.) *Theoretical and Methodological Approaches to Social Sciences and Knowledge Management*. Rijeka: InTech.
- Polanyi, M. (1958). *Personal Knowledge*. London: Routledge.
- Read, R. & Hutchinson, P. (2011). De-mystifying tacit knowing and clues: A comment on Henry et al. *Journal of Evaluation in Clinical Practice*, 17, 944-947. DOI: 10.1111/j.1365-2753.2011.01746.x.
- Rudduck, J. & Hopkins, D. (1985). *Research as a Basis for Teaching: Readings from the work of Lawrence Stenhouse*. London: Heinemann.
- Ryle, G. (1949). *The Concept of Mind*. London: Hutchinson.

- Schön, D. (1983). *The Reflective Practitioner: How professionals think in action*. New York, NY: Basic Books.
- Schön, D. (1987). *Educating the Reflective Practitioner: Toward a new design for teaching and learning in the professions*. San Francisco, CA: Jossey-Bass.
- Schulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57(1), pp. 1-22. Retrieved from http://hepg.org/her-home/issues/harvard-educational-review-volume-57,-issue-1/herarticle/foundations-of-the-new-reform_461#.U0gCzq1dWsY.
- Smyth, J. (1989). Developing and sustaining critical reflection in teacher education. *Journal of Teacher Education*, 40(2), 2-9
- Stenhouse, L. (1975). *An Introduction to Curriculum Research and Development*. London: Heinemann.
- Strauss, A. & Corbin, J. (1998). *Basics of Qualitative Research Techniques and Procedures for Developing Grounded Theory* (2nd edn.). London: Sage.
- Tizard, B., & Hughes, M. (1984). *Young Children Learning*, London, Fontana.
- Tooley, J. & Darby, D. (1998). *Educational Research: A critique*. London: Ofsted.
- Whitty, G. (2006). Education(al) research and education policy making: Is conflict inevitable? *British Educational Research Journal*, 32(2), 159–176.
- Winch, C. (2014). Theory and teacher education – Anglo-German perspectives. In D. Kuhlee, J. van Büer & C. Winch (Eds.) *Changing Governance in Initial Teacher Education (ITE): Perspectives on England and Germany*. Wiesbaden: Springer - Verlag für Sozialwissenschaften.