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Constructing Teacher Knowledge:

Conflicting Views & Synthesising Possibilities

Main Description

Teacher education in England is enmeshed in a conflict between two seemingly opposing views of practice, the 'standards based model' ('technical rationality') and the reflective practitioner' model (practical knowledge, wisdom). Yet there is no clearcut version of the standards based model from which to extract a typology, and there are many interpretations of reflection on practice. The paper briefly outlines this context and using some concepts from the work of John Dewey develops a view of how teachers learn in practice, in which a reconciliation between the two opposing theories are suggested. Dewey's naturalistic epistemology can account for the experiential nature of practical experience and practice based learning: it provides an 'epistemology of practice'. Critiques of Dewey's position for the construction of knowledge are acknowledged.

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Keywords

Practice
Reflection
Epistemology
Teacher Education
Experiential Learning
Standards
Dewey

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Introduction

The status and role of knowledge is problematised in modernity by post-modern understandings in hermeneutics. Out of a vast canvas I have taken a small area of professional practice, that of teacher training and aim to explore the nature of practical knowledge. The first part of the paper gives the context for the present discussion and the second part suggests a way of conceptualising practice that is helpful in both understanding its nature and in developing practitioners. Broadly and briefly in England at present there seem to be two opposing views of the knowledge and understanding teachers need to operate in conditions of complexity. I consider these in turn.

Part 1 – The context of opposing views

The development of teacher training in England over the past 40 years shares some characteristics with other countries. Over the period there has been a perceived attack on university teacher training based on scepticism about the role of theory in the training; an emphasis on school based training (since the early 1990s) and lastly the rise of competencies and 'standards' as an assessment tool. (Carr, 1993b; Pring 1996; McNamara 1996). All these factors entail a postivist epistemology.

The context in which teachers work in the classroom is also widely acknowledged to be a complex one. (Sankey 1993), taking complexity as 'a broad term for describing and understanding a wide range of chaotic, dissipative, adaptive, non-linear and complex systems and phenomena'. (University of Liverpool's Centre for Complexity Research http://www.liv.ac.uk/ccr/what_is_complexity.htm)

Standard-practice:

In England teachers at all stages of their careers are assessed on 'standards' (DfES 2002b). The view of knowledge implied in the standards is not explicitly stated but can be induced by looking in detail at some of the assessment instruments, such as the 84 standards for the award of qualified teacher status (QTS). (DfES 2002a). Standards based assessment grew out of the competency movement, conceptualised on the vocational model. Assessment of vocational skills involved analysis of discrete, observable, measurable, verifiable 'pieces' of behaviour,

functioning in specified ways as performance indicators - evidence that a particular skill had been 'performed' and verified.

There are several difficulties with competence based assessment in teaching, even if we grant the possibility of formulating competency criteria for many aspects of a teacher's job. First, in order to be capable of verification a competency statement needs to cover one discrete, observable aspect of competence. A teacher's job however is extensive and complex: the number of competence statements is likely to be large and therefore compound competency statements are required. Secondly, each statement needs verification criteria, and these will necessarily be normative, based on prior understanding of what constitutes good, or effective performance of the skill. To reach the prior interpretations of good and effective 'performance' some kind of professional judgement and not competency criteria had to be used. Thirdly, if we were to concede that competency criteria might secure judgements on demonstrated technical skills, multiple and compound statements would be needed for complex professional practices. So any system likely to be subtle enough to capture the complexity of the teacher's technical skills, would in all probability be too unwieldy to be very useful. There is considerable literature on the limitations of competencies in relation to teacher assessment. (Whitty 1991, Thompson 1992, Carr 1993a, Carr 1993b, Hyland 1993, Lum 1999).

Further, in normal use the term 'competent teacher' means more than mere skills competence. For example, when a teacher stops a class because she has overheard a racist remark, which she tackles sensitively, knowledgeably, effectively, while upholding the value of tolerance, we would say she dealt competently with the situation, drawing on her own values and her experience. This might be called the capacity sense of competence. 'Capacities entail the voluntary and deliberate exercise of principled judgement in the light of rational knowledge and understanding…Capacities are knowledge-driven' (Carr 1993a. Pg. 253).

Is it possible to formulate competency criteria in the capacity sense, such as when judging the teacher's competent professional responsibility to 'children and to society and to the profession's purposes and characteristics'? (Thompson l997, Pg.1). Some such statements relating to observable professional expectations are certainly possible, such as 'the teacher generally arrives on time to all school commitments' or even 'The teacher always upholds the Code of Conduct of the General Professional Council', but in a wider sense any competence statement falls at the hurdle of subtle values, such as integrity, or generosity of spirit, which might arguably be necessary teacher capacities.

In England, in response to such criticism, standards have replaced competencies and it might be argued that these answer the critique levelled against competencies. The QTS standards have been designed to be used 'holistically' (DfES 2002a, p. 1.) However, problems still remain when we examine them in detail. One difficulty is the wide variety of different kind of elements covered by and expressed in these standards. Some are merely procedural requiring

knowledge of particular legislation for example, some are technical, whereas some are wide ranging and impossible to fully verify, such as those relating to values. Some are ambiguously framed and some refer to similar aspects of teacherly behaviour in different contexts, making them difficult to disaggregate. This is an advantage as it shows that the standards are too varied and interrelated to be used in a narrowly mechanistic way. The standards do not yield a clear cut version from which to extract a typology. We can say, however that the very endeavour to produce an overall list of such standards seems to suggest a view of verifiable knowledge that has a positivist feel to it. Its underlying belief appears to be that there can be instances of teacher behaviour which represent what teachers ought to do and that teacher performance can be measured against standard specifications of good teacher behaviour. In other words it seems to be claimed that measurable outcomes of good teacher practice are possible. Proponents of standards based training believe that there can be agreement about what teaching behaviour works to promote learning and that this can be described and encapsulated in abstract descriptions.

Reflective practice

The second view of knowledge implied in current thinking about teacher behaviour is encapsulated in the term 'reflective practice'. Reflective practice is sometimes invoked to counter inadequacies in the kind of reductionist view represented by the rise of competencies. (Schön 1983 and 1987; Rose, 1992; Whitty 1992). I use the term broadly to cover all those beliefs about practice based knowledge which claim that it is substantially different from knowledge about facts, and that to become a good practitioner one has to engage in some kind of 'reflection' on, and in practice. Generally speaking the reflective practitioner view rejects the standards based training view as falsifying the nature of practice and practice-based learning, knowledge and expertise. (Hirst, 1990; Moore, 2004). Broadly the view is underpinned by a notion of teaching as a 'practice' (MacIntyre and Dunne 2002; Dunne, 2003; Noddings, 2003; McLaughlin, 2003), with the good teacher being able to articulate and exemplify the skills and values of the practice. This puts proponents into the tradition of writers on the close relationship between theory and practice and what constitutes practical knowledge, or *phronesis*. (Aristotle 1996; Dewey 1929, 1958, 1960, 1997; Dunne, 1993). Donald Schõn applied these notions directly to professional practice, illustrating the model he developed with many graphic examples. Schõn's work has been highly influential in disseminating the idea of the reflective practitioner.

The notion of reflection has an intuitive folk appeal but questions are raised by the variety of ways in which the ubiquitous term appears and the fact that it often seems to be used like a slogan. Accounts of what 'reflective teaching' is and how to do it are numerous and varied, and do not represent an overall model which can be called 'the reflective teacher.' This leads us to conclude that the idea has been inadequately defined, suffers from 'incompleteness' and needs to be developed

and situated 'within a richer account of the nature and requirements of teaching and teacher training.' (McLaughlin, 1999. p.9). It is not too farfetched to say that 'over the past 15 years, reflection has suffered from a loss of meaning. In becoming everything to everybody, it has lost its ability to be seen.' (Rogers 2002 p. 842). A further difficulty with the catch-all notion of the terms relating to reflection is that it can look as if it is not worth doing. In some courses of professional training and development which do mention 'doing reflection' another issue can arise, in that lip service is paid to the notion of reflection by the creation of 'a "checklist" or "reflection on demand" mentality, reflection processes with no link to conceptual frameworks'. (Boud and Walker, 1998). Moore and Ash (2002) term this 'ritualistic reflection'. A weak conception of reflection will not suffice to explain its importance and its effects in the process of coming to understandings within practice. These understandings draw on experience in a complex and subtle way, which no check list can fully articulate.

The writing on reflective practice reveals a range of views on what it is and what its objects should be. This raises a number of issues. First, it is unclear how reflection, as used in the context of a practice such as teaching, is different from other types of thought. Second, *what* is reflected upon is as important as *how* in terms of 'knowledge creation'. (Valli, 1993 quoted in Moore 2002). One can reflect on specific, routine happenings at one level, and on general principles at the other and differing levels of reflection invite different forms of reflection.

Next, the effectiveness of the reflection is difficult to assess if it is not properly or fully conceptualised. How will we know if the reflection is good or not, that it leads to valuable insights or valid conclusions, if we have an imprecise notion of what should be the object, content, methods and procedures relating to it? There can in fact be 'bad' reflection, by which I mean ineffectual reflection, which among other things might not get at the nub of the practice under scrutiny, or might start from wrong assumptions, or jump to non-valid conclusions. The kind of ineffectual reflection in the example can actually reinforce bad practice. Moore and Ash (2002) noted for example that some of their students 'showed an awareness in interview of the potential for reflection within any site to become ritualistic and meaningless - for it to become absorbed into existing structures'. Such reflection 'simply *reinforced* current thinking and perceptions and became a shelter within which to hide from more challenging explanations of circumstances. Or there may be *'"pseudo-reflection"*, involving a genuine *intention* to consider important issues though not leading to development or change (the kind of reflection that contributes to the durability of preconceptions and existing perspectives through selective if not always conscious interpretation of events and the selection of topics, issues and events to reflect upon)' (ibid.) Without a clear definition of what is meant by reflection it is difficult to distinguish when there has been *'constructive'*, *'productive'* or *'authentic' reflection*, which 'actively seeks to problematise situations and to challenge existing views, perspectives and beliefs, promoting or leading to development or change in terms of work-related understandings and/or outlooks' (ibid.). Further,

without a clear and agreed definition of what reflective practice is it is difficult to talk about it and to share the good practice supposedly generated by, through and with it. 'It is has lost its ability to be seen and therefore has begun to lose its value'. (Rogers, 2002)

It is important to articulate professional knowledge and understanding, in order to develop it in oneself and others. Osterman (1990) for example views one of the most important aspects of the development of reflective practice to enable the body of professional knowledge to grow. Such sharing of good practice cannot occur with any degree of security, where practitioners find themselves using terms that are common but hold different meanings or that are different but have overlapping meanings. With a slippery and contestable notion of reflective practice it is also difficult to research the effects of reflective teacher education and professional development on teachers' practice and students' learning. Work is needed on developing Schön's insights (Schön, 1983) into an epistemology of practice.

Part 11

These two positions on standards based training and reflective practice appear to be in opposition but is this a false dichotomy? It seems evident that we cannot demonstrate with any degree of scientific certainty what constitutes a good teacher and good teaching and that there cannot be any scientific standard of complete verifiability and replicability. The arguments against the competency/standards model seem to suggest that standards, interpreted reductively as yielding certainty in judgement about good teaching, cannot withstand arguments about the complexity and contingencies of teacher's daily experience in the classroom. Yet, when we look at the notion of reflective practice, we see that it is not one clearly defined concept and covers a variety of ways of looking at practice as primarily grounded in experience.

Experience was at the heart of John Dewey's view of knowledge and in this second part of the paper I suggest briefly where we might look for a useful tool in bringing us closer to understanding practical knowledge. First it is useful to look at Dewey's historical analysis to situate and to understand the value of his concept of 'experimental empiricism'

<u>Teacher knowledge: a Deweyan tool</u>

M1 and M2 are not necessarily irreconcilable. Dewey's concept of experimental empiricism is useful in attempting a reconciliation because it addresses the experience of teachers dealing with complexity, in situations with many variables and attempts to elaborate and to forefront what is valuable in the scientific method, in terms of rigour, accountability, verifiability, replicability, whilst avoiding a mechanistic, technicist approach. The main point is that Dewey provides a defensible account of how practical knowledge develops experientially, which includes the teacher in the practice – the normative, affective and cognitive dimensions of her experiential learning, whilst retaining

the notion of rigour. It is useful to think of Dewey's version a 'scientific' inquiry on the model of evolutionary biology rather than physics, in that biology focuses on the relationship of organism and the environment, and works with interactive models of complex and dynamic systems, rather than classical physics models of simple, static systems. (Connell 1995).

Dewey's specification of the power of the 'experimental inquiry method' to support robust reflection of the kind required for M2 focuses on 'three outstanding characteristics'. (Dewey 1960 p 106) The first that experimentation involves *overt* doing, the making of definite changes in the environment or in our relation to it, in response to some impetus such a question, or of something which arouses curiosity. Second, 'experiment is not a random activity'. It is consciously directed according to the parameters of the inquiry. This is useful in trying to achieve M2, avoiding some of the pitfalls of bad reflection. Third, the outcome is 'the construction of a new empirical situation in which objects are differently related to one another…and the *consequences* of directed operations form the objects that have the property of being *known'* (ibid. pp. 86-87).

> 'The sum and substance of the present argument is that if we frame our conception of knowledge on the experimental model, we find that it is a way of operating upon and with the things of ordinary experience so that we can frame our ideas of them in terms of their *interactions* with one another' (Dewey l960, p.107).

Importantly we need to conceive of this 'framing of a conception' as in a flow of experienced cognition, not as a separate state that 'pulls us up short'. We need to think in terms of Schön's reflection-in-action (REF).

In examining the growth of practical knowledge (KH) through experience Dewey describes the occurrence of a disabling problematic situation, which ends in an enabling understanding of what to do next, in new 'know how'.

> ".According to the pattern set by the practice of knowing, knowledge is the fruit of the undertakings that transform a problematic situation into a resolved one.' (Dewey, 1960, pp 242-3).

In the first phase of inquiry, someone experiences herself to be in a problematic situation, with a sense of being 'pulled up short' or 'hitting the buffers', aware that she is not able to operate as she normally does: the flow of her actions is interrupted, requiring 'something to be done'. In the second phase she recognises what has troubled the instinctual behaviour and caused her to be 'pulled up short'. Dewey's formula is that 'cognitive elements enter into the process as a response to precognitive 'maladjustment'. (Dewey, lw.1.44) In this phase she takes cognisance of what the problem is. There are many possible ways in which she could 'read' the situation. She will only be able to isolate a few of these possible interpretations, such is the nature of cognition within the fleeting and constantly changing moments of phenomena. (Sartre, 1938; Heidegger, 1962). Her 'reading' or 'interpretation' of the experience of being 'pulled up short', is the basis on which she subsequently operates. How she determines 'what her problem is' becomes a basis for the last phase, in which she is able to extract ideas, suppositions, theories, and muse on these as hypothetical solutions to the 'blockage'. These

reflections can happen whilst still actively engaged in the situation, in which case the adjustments are akin to bio-feedback and bear some resemblance to what Schőn has called reflection-in-action. They can also be at one remove, such as when analysing a problematic situation while not actually in it. This is more akin to Schõn's reflection-on-action. Schőn uses his term reflection-in-action consistently to refer to fluent professionally demonstrated expertise that appears non-cognitive and instinctive when being exercised in practice.

The power of using empirical experimentalist methods to resolve questions arising from practical situations is not limited to the new understandings which are developed. Not only new understandings may arise, but also through the process of inquiry new methods, concepts and tools may be developed, which in turn may give rise to new understandings which could not exist previously, such as when new tools are developed in a particular industry, because they are needed to perform some practical task for which existing tools were inadequate:

> 'Something needed to be done to accomplish an end; various devices and methods of operation were tried. Experiences of success and failure gradually improved the means used. More economical and effective ways of acting were found - that is, operations which gave the desired kind of result with greater ease, less irrelevancy and less ambiguity, greater security. Each forward step was attended with making better tools. Often the invention of a tool suggested operations not in mind when it was invented and thus carried the perfecting of operations still further. (ibid., p. 124).

I think this account of tool development is essentially plausible and accurate. How does this account relate to the practice of teaching? Specifically it implies that the meanings which are created in teaching only emerge in the practice. The teacher may enable the learner to develop a sense of the significance of a concept, or to grasp a skill, but the precise way in which this outcome will be achieved cannot be regulated in advance of the situation in which it is created, although some facts about how to achieve a similar, desired outcome may be known. Take for example a typical French lesson in which the teacher is trying to get her pupils to know, understand and be able to use correctly, in context and from memory, structures related to the weather. She may decide in advance on a variety of techniques to achieve her objective, such as the use of symbols and pictures, getting the pupils to repeat certain phrases, providing them with a grid in which to tick what they hear, so that they do not need to see a written source. She may also decide in what order to phase various activities. There is a body of empirical and theoretical work on this mode of communicative language teaching, and a body of knowledge about the communicative methodology in teaching a foreign language, on which she can draw. When the teacher teaches the lesson she has planned, with a particular group of pupils, on a particular occasion, it will 'come out' in a particular way and be received in a particular way. If the teacher is then able to reflect on what had happened and has successful ways to take feedback on the pupils' perceptions, and evidence of how well they had learnt what she intended,

she is likely to do something differently next time she teaches the same lesson, provided she believes that something different is required to achieve the outcome, knows what this is and understands how to go about it. A specific example in the case of the weather lesson follows. The pupils all produced the French phrase for 'foggy day' when the stimulus in the situation required 'a rainy day'. The teacher reflects back on the lesson and believes that her visual prompt for the foggy day was ambiguous. She downloads a better picture from the internet. The next class are still confused. She wonders if the children may not have much experience of fog and decides to teach the concept of fog with gestures and also check on the children's experiences. She does just this, and discovers that most of the pupils have not experienced fog but that there is a wealth of weather experience among some of the children in her class recently arrived in England, which is of interest to the pupils. Several outcomes ensue which the teacher did not expect, of a cognitive, social and affective nature. A usually quiet pupil becomes voluble and articulate about being caught in the street in monsoon rain. Her story enthralls the class and she in turn benefits from the attention accorded her. A couple of demotivated children remember their journey to their grandparents home in a blizzard and this draws them into the lesson on weather and engages them with the content. Someone mentions the television pictures of the recent Thailand tsunami and the discussion widens in an immediately accessible manner to the force of nature. Spiritual values are expressed about respect for the earth. Ethical questions are raised about aid and compassion to the victims is expressed. So the relevance of Dewey's tool making analogy to my current purposes is the conclusion that Dewey draws from his example that there can be no *a priori* test or rule for the determination of the operations which define ideas. I believe that in practical affairs procedures are always provisional: the way that things need to be done, or should be done can only be determined by doing, reflecting and redoing. I concur with Dewey that 'the operations which govern ideas originate in what men naturally do and are tested and improved in the course of doing' (ibid.), and also that in the doing new modes of doing may emerge. Dewey describes this process as the development of 'the operations of the art of scientific experimentation' (ibid.). It may seem paradoxical to put 'art' and 'science' together in the way he does, but it seems to me that the phrase is a good description of teaching and that both of those concepts are made coherent with each other through the notion of experimentation.

> Teacher trainers attempt to develop teachers who not only have specific skills but also are in some sense exemplary figures. Standards based assessment (M1) cannot encompass all dimensions of teaching, such as the normative. Dewey's formulation can be helpful in our quest for an M1/M2 reconciliation. For example, when Dewey explains how he conceptualises operational definitions and relations we have a tool for connecting the individual experiencing subject with the wider explanatory descriptors in the public domain.To know how to act in a situation of complexity is to have a repository of strategies which have been established through experience and which are recognised as relevant to the

> present moment of the subject. In a situation of changing events what is important for a participant subject is
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> 'the correlation among these changes or events. When these correlations are discovered, the possibility of control is in our hands
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> An individual builds these correlations through her own affective and cognitive responses, in interaction with the situation.

I am not suggesting that a participant subject goes through some laborious staged process of finding out what these inter-relations are. This would be to misrepresent what I believe Dewey means. An analogy would be the famous statement by Mozart that he 'heard' an oeuvre, like a symphony, in his mind's ear, and that an entire work would 'flash' through him in this way, within the space of a few minutes. He took cognisance of this symphony in this way, and then spent many hours and days writing out in musical notation what he had experienced. Similarly, an expert professional like a teacher in the classroom can work within a complexity of events and a trainee may learn to become an expert, given certain conditions. I am claiming that a teacher in a classroom can be helped to understand what elements play a role in building the totality of the classroom situation and how they relate and inter-relate. Some theoretical knowledge of various topics, such as planning or child development, can help to structure her learning. What will make it real for her, and become part of her repertoire for performance, will come about when she is able to act on the knowledge gained in theory, in her practical situation.

So if we re-visit the idea of "experimental empiricism" it seems to enable us to keep what is sound and acceptable in M1, the 'thin' standards based training version, the emphasis on being able to articulate and illustrate 'what works' and to build up an evidence base, whilst not falsifying the nature of experiential learning.. Dewey's exposition has led to a view of the acquisition of practical knowledge (KH) which is transactional and existential; it includes an agent doing and acting in a situation; the subject and object of experience are encompassed within the same 'frame'. The implications for this account are that teacher training needs to broaden out beyond standards based assessment in order both to promote and assess the kind of rich and connected understanding which teachers need. A model of teacher training needs to include opportunities for effective, non ritualistic, reflection. Standards are useful descriptors of practice, provided they are suitably formulated to describe what they can usefully encompass in terms of specific skills and performance. Extra elements are needed to encompass support and enable effective reflection. I here highlight three. First, the importance of mentoring, around specific agendas, not narrowly tied to standards or competenices, (REFS) Secondly, the introduction of mechanisms for promoting effective reflection, such as the use of teacher narrative (refs). Third, the promotion of the idea of scholarly teaching, involving teacher as researcher (refs), Fourth the systematic use of professional development portfolios. (refs).

Conclusion:

In the field of practitioner and work place learning we can find examples of good practice in the areas of mentoring, the use of narrative for professional development, practitioner research and the use of portfolios for the development and assessment of practical knowledge and understanding. These elements need to be incorporated into initial teacher training programmes and into assessment for qualified teacher status, in order to account for the way in which teacher knowledge and understanding develops. A defensible programme of teacher training and education values the teacher trainers' professional judgement in fostering and assessing elements of reflective practice. Assessment which is not narrowly focused on standards allows a substantial place for professional judgement to grow and operate, and thereby supports the development of practical knowledge (KH) A programme which incorporates such elements enables space for a new teacher's own direction, and hence involves the development of her own professional judgement more deeply than a standards led curriculum

Bibliography

Aristotle. *Ethics*. London: Penguin Books Ltd, 1976.

Boud D, Keogh R., Walker D. *Reflection: Turning Experience Into Learning*. London and New York: Kogan Page and Nicols Publishing Company, 1985.

Carr, David. "Guidelines for Teacher Training: The Competency Model." *Scottish Educational Review* 25, no. no. 1 (May 1993b): 17-25.

------. "Questions of Competence." *British Journal of Educational Studies* 41 (1993a): 253 - 271.

de Man, P. "The Epistemology of Metaphor." In *On Metaphor*, edited by S. Sacks, 11-28. Chicago and London: University of Chicago Press, 1979.

Dewey, J. *The Quest for Certainty*. USA: Capricorn Editions, 1960.

------. *The Sources of a Science of Education*. New York: Liveright Publishing Corp., 1929.

------. *Experience and Nature*. New York: Dover publications Inc., 1958.

------. *How We Think*. Toronto: Dover Publications Inc., 1997 (originally l910).

DfEE. *The National Literacy Strategy: Framework for Teaching*. London: DfEE, 1998a.

DfES. *Key Stage 3 Strategy*. http://www.standards.dfes.gov.uk/key stage32001.

------. *The Standards Framework.* London: DfES, 2002b.

------. *Qualifying to Teach: Standards for the Award of QTS*. London: TTA, 2002.

Dunne, J. "Arguing for Teaching as a Practice; a Reply to Alasdair MacIntyre." *Journal of Philosophy of Education* 37, no. 2 (2003): 353-71.

------. *Back to the Rough Ground*. Notre Dame, Indiana: University of Notre Dame Press, 1993.

Garrison, J. "Dangerous Dualisms in Siegel's Theory of Critical Thinking: A Deweyan Pragmatist Responds." *Journal of Philosophy of Education* 33, no. 2 (1999): 213-32.

Hirst, P.H. "Internship: A View from Outside." In *The Oxford Internship Scheme*, edited by P. Benton, 147-59. London: Calouste Gulbenkian Foundation, 1990.

Hyland, T. "Competence, Knowledge and Education.." *Journal of Philosophy of Education* 27, no. 1 (1993): 57-68.

Lum, G. "Where's the Competence in Competence-Based Education and Training?" *Journal of Philosophy of Education* 33, no. 3 (November 1999): 403-18.

MacIntyre A. and Dunn, J. "Alistair MacIntyre on Education: In Dialogue with Joseph Dunn.." *Journal of Philosophy of Education* 36, no. 1 (1-19 2002): 53-371.

McDowell, J. "Knowledge and the Internal." *Philosophy and Phenomenological Research* 55 (1995): 877-93.

McLaughlin, T.H. "Beyond the Reflective Teacher." *Educational Philosophy and Theory* 31, no. 1 (1999): 9-25.

------. "Teaching as a Practice and Communities of Practice:" *Journal of Philosophy of Education* 37, no. 2 (May 2003): 339-53.

McNamara, D. "The University, the Academic Tradition, and Education." In *The Role of Higher Education in Initial Teacher Training*, edited by J. and Smith Furlong, R., 179-92. London: Kogan Page, 1996.

Menter, I and Whitehead, J. *Learning the Lessons: Reform in Initial Teacher Training*. The final report of a survey into the views of staff in schools and higher education institutions concerning current reforms to Initial Teacher Training. Bristol: University of the West of England, Bristol and the National Union of Teachers, 1995.

Moore A and Ash A. "Reflective Practice in Beginning Teachers: Helps, Hindrances and the Role of the Critical Other," 20. British Educational Research Association. University of Exeter: http://www.leeds.ac.uk/educol/http://www.leeds.ac.uk/educol/, 12-14 September 2002, 2002.

Moore, A. *The Good Teacher:*. London and New York: RoutledgeFalmer, 2004.

Noddings, N. "Is Teaching a Practice?" *Journal of Philosophy of Education* 37, no. 2 (2003): 241-53.

Osterman, K.F. "Reflective Practice: A New Agenda for Education." *Education and Urban Society* 22, no. 2 (February133-152 1990).

Pring, R. "Just Dessert." In *The Role of Higher Education in Initial Teacher Training*, edited by J. and Smith Furlong, R., 8-22. London and Philadelphia: Kogan Page, 1996.

Quine, W.V.O. "Epistemology Naturalized." In *Ontological Relativity and Other Essays*, 26-28. New York: Columbia University Press, 1969.

Rogers C. "Defining Reflection: Another Look at John Dewey and Reflective Thinking." *Teachers College Record* 104, no. <http://www.tcrecord.org> ID Number: 10890, Date Accessed: 1/30/2004 (2002): 842-66.

Rorty, R. *Philosophy and the Mirror of Nature*. Oxford: Basil Blackwell, 1980.

Rose, A. "Framing Our Experience: Research Notes on Reflective Practice." *Adult Learning* 3, no. 4 (January 1992): 5.

Ryle, G. *The Concept of Mind*. Harmondsworth, Middlesex: Penguin Books, 1963.

Sankey, D. & Lambert, D. "Classrooms as Ecosystems." In *Secondary PGCE Area Based Scheme*, edited by J. Jones, 46-52. London: Institute of Education, 1993.

Schön, D. *Educating the Reflective Practitioner*. San Francisco CA: Jossey-Bass Publishers, 1987.

Schön, D.A. *The Reflective Practitioner*. London: Temple Smith, 1983.

Thompson, M. "Do 27 Competences Make a Teacher?" *Education Review* Vol. 6, no. 2 (Autumn 1992): 4-8.

University of Liverpool's Centre for Complexity Research. *What is Complexity?* <http://www.liv.ac.uk/ccr/what_is_complexity.htm>. 08.10.04. 2004 (Accessed 02.04.05.).

Whitty, G & Willmott, E. "Competence-Based Teacher Education: Approaches and Issues." *Cambridge Journal of Education* 21, no. 3 (1991).

Whitty, G., Barnett. "Initial Teacher Education in England and Wales: A Survey of Current Practices and Concerns." *Cambridge Journal of Education* 22, no. 3 (1992): 293-306.

Wittgenstein, L. *Philosophical Investigations*. 3rd edition. Translated by G.E.M. Anscombe, 250. Oxford: Basil Blackwell, 1974.