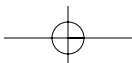
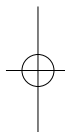
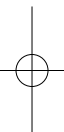




## Subject Knowledge and Teacher Education





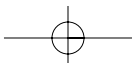
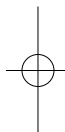
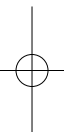
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# Subject Knowledge and Teacher Education

THE DEVELOPMENT OF BEGINNING TEACHERS' THINKING

Viv Ellis



For A. G. and V. P.



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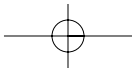
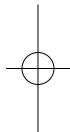
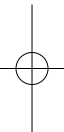
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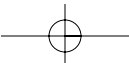
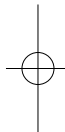
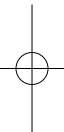
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## Foreword

Teacher educators, like those throughout the educational system, have often looked for ‘the answer’ to vexing problems with teaching and learning. In the US, reductive initiatives such as the No Child Left Behind legislation for students and the National Council of Accreditation of Teacher Education (NCATE) reviews for teacher education programmes take one-size-fits-all approaches to assessing the widely divergent teaching and learning conducted in schools with disparate populations, resources, missions and other facets of institutional make-up. These efforts are praised by those who seek to homogenize teaching and learning across the spectrum of communities and people served. Yet they operate from premises that are rejected by those for whom these evaluations represent grossly ill-informed and poorly executed efforts to standardize instruction according to limited visions of education, and stifle creative thinking among the teachers who produce the field’s most intriguing innovations.

In this book, Viv Ellis takes a situated perspective on teacher education, looking closely and carefully at a small set of teachers as they experience the settings in which they learn to teach. These settings include the relatively rarified environment of the university department of education and the teeming, gritty world of the schools. Making the transition from universities to schools has often made for a bumpy ride for teachers. Universities tend to emphasize the theoretical and ideal while schools must deal with the immediate, moiling, conflict-ridden days of children and adolescents and their infinite problems and contradictions. Ellis takes us into the crucible of this conflict, providing detailed accounts of early-career teachers’ experiences as they try to negotiate the multiple value systems that compete for their allegiance.

Doing so requires a theoretical approach that allows one to provide a comprehensive account of the situated nature of human development. Ellis’s clear, thoughtful appropriation of sociocultural theory grounded in the work of Vygotsky enables him to make sense of the ways in which the settings of learning to teach mediate teachers’ conceptions of how to teach. Many studies of teacher education look for single, universal explanations for shared experiences. And so one study will argue that teachers are so well apprenticed to business-as-usual that they reject the progressive values of teacher education

programmes; another will posit that teachers learn a progressive pedagogy in college but that schools crush them with their emphasis on control; and so on. Taking a sociocultural approach enables Ellis to find that no single reason can account for the tendency for teachers to gravitate to the norms of their schools. Rather, one must look to the specific cultural practices of particular universities and schools to account for why any teacher might embrace one value system or another. In his research, Ellis highlights the personal yet socially channelled trajectories of beginning teachers' experiences in the conceptual morass of multiple settings and traces the complex, 'twisting path' of teachers' concept development (Smagorinsky, Cook and Johnson 2003, Vygotsky 1987).

This meticulous set of case studies will make a great contribution to the field's understanding of early-career teachers' knowledge and thinking in relation to the settings in which they learn to teach. Viv Ellis has provided both an essential study of teachers' early-career concept development and a model for how future such studies might be conducted. This valuable research should strongly influence the ways in which teacher educators think about their work in terms of the situated nature of learning to teach.

Peter Smagorinsky  
University of Georgia

## Introduction

When I became a university-based teacher educator in England in the late 1990s, one of my first tasks was to implement a subject knowledge auditing procedure for a Postgraduate Certificate of Education (PGCE) course in English.<sup>1</sup> This procedure was then a new requirement made by Department for Education and Skills (DfEE) Circular 4/98 and the Initial Teacher Training National Curricula (ITTNCs) (DfEE 1998a). The rationale provided in the Circular was that there was such variation in the subject knowledge ‘covered’ in university courses, that the bachelor’s degree could be no guarantee that graduates would be prepared – in terms of ‘content’ – to teach the subjects they were being trained to teach. The Circular’s assumptions were that certain bits of subject knowledge were prerequisite to teachers being able to teach effectively in schools, that these bits of knowledge could be specified and atomized in advance by the government’s Teacher Training Agency (TTA), and that the more of these bits teachers accumulated in their heads, the better they would eventually be able to teach.

For my first go at making a subject knowledge audit, I used Microsoft Word to produce little boxes for my students to tick. In my grand design, two ticks suggested expertise in one of the content areas specified by 4/98; one tick indicated confidence; and no ticks ... well, no ticks highlighted a ‘gap’ into which I would leap with handouts on word classes and syntax. My second effort clustered many of the ‘auditable’ areas together and invited my students to think about what they *did* know. And then, of course, to tell me what they didn’t. This led to targets, monitoring and, finally, assessment. My course was inspected by the Office for Standards in Education (Ofsted) and deemed ‘compliant’. I kept my job.

The reforms of initial teacher education (ITE) in England towards the end of the twentieth century – along with government interventions in teaching through, for example, the National Literacy Strategy (DfEE 1998b) and, later, the Key Stage 3 English Framework (DFES 2001) – were founded upon an objectivist view of knowledge as a static and universal commodity that could be fragmented, accumulated and transferred. In these times of heightened vertical accountability, as the New Labour government sought to reconstruct the teaching profession (Furlong *et al.* 2000, Hextall and Mahony 2000), knowledge became a *thing* the

volume of which had to be measured in order to demonstrate compliance. Only compliance ensured continued government funding. Non-compliance led to the closure of courses and programmes and, in some cases, university departments of education.

As I had never believed subject knowledge existed as an object, as some sort of packing material or viscous fluid that could be ‘boosted’, ‘topped up’ or measured, my audit procedures were a good example of what Edwards *et al.* (2002) refer to as the ‘duplicitous discourse’ in which teacher educators at the time of the 4/98 Standards were implicated. In satisfying Ofsted with little boxes to tick, I was simplifying ‘what is eminently complex’ and encouraging my students to accommodate unhelpfully to ‘apparent certainties’ (Edwards *et al.* 2002: 4). My students knew better, however, and that is how the idea for the research presented in this book grew. I became interested in how student teachers tackled the systems teacher educators contrived for them and how their thinking about the concept of subject knowledge figured as an aspect of their work on becoming a teacher. I became interested in how beginning teachers thought about subject knowledge outside of practice – the very kind of thinking required by the statutory instruments of auditing.

This book presents a study of three beginning teachers’ thinking about the subject knowledge of English at the time of the 4/98 Standards. The subject English was chosen for pragmatic reasons: it was the subject in which I was working as a teacher educator and which I had taught as a schoolteacher. However, as expected, it also proved to be an especially good site for exposing and exploring conflicting epistemologies against the background of contemporary reforms of teaching and teacher education. The research took place over a two-year period and the teachers with whom I worked – Ann, Grace and Liz – were not my own students. Two questions guided my research: first, what did these beginning teachers think about the subject knowledge of English and did this thinking change or develop over the period? And second, in more abstract and theoretical terms, how might this thinking and the way it developed be conceptualized?

## Framing the research I: epistemological issues

### **How can one claim to describe what people think?**

In claiming to describe what people think, my fundamental premise is the Vygotskian understanding that there is a reciprocal relationship between thinking and language, ‘a continual movement back and forth from thought to word and from word to thought ... Thought is not merely expressed in words; it comes into existence through them’ (Vygotsky 1986: 218). Speech is not simply an externalization of thought but a tool in its development, hence the ‘movement back and forth’. Language (or, more specifically, speech) is seen as a means (a tool, if you

wish) for cognitive work. My study traces the development of three beginning teachers' thinking in the context of their interviews with me as researcher. The analysis is therefore primarily of what they said to me (their spoken language) – but also of 'maps' they drew and narratives they wrote (see Chapter 4) – about the subject knowledge of English rather than everything that they ever thought everywhere.

### **What is the difference between teacher thinking and teacher knowledge?**

Often in the teacher education literature, thinking and knowledge are used interchangeably; sometimes cognition is used in preference. In this research, although I don't regard the terms as entirely distinct, I use the terms separately to indicate different kinds of knowing, as suggested in Davis and Sumara's (2000) distinction between individual knowing and collective knowledge. Thinking (a gerund) is used to indicate how the individual makes sense of and works on concepts using language as a mediational tool.<sup>2</sup> Knowledge is used to indicate that which exists at the level of the culture in terms of materials and resources that are appropriated as tools in practice. What counts as knowledge has been evaluated as justified and true in communities of practice working on the same object<sup>3</sup> and seeking the same cultural identity.

## Framing the research II: traditions of research

From the 1970s onwards, especially in US and to an extent in UK, there has been a growth in interest in teachers' thinking (Clark 1989, Calderhead 1987). This is partly associated with a recognition that it is inadequate to try to understand teachers' behaviours without also trying to understand their reasoning and beliefs (McIntyre and Morrison 1977). In their seminal review of the research on teachers' thinking, however, Clark and Peterson (1986) delineated three broad categories of research within this tradition: 1 teachers' planning (or their 'pre-active' and 'post-active' decision-making); 2 teachers' interactive thoughts and decisions in the moment of practice; 3 teachers' theories and beliefs when not engaged in practice. My research is situated partly within the third category, with the important caveat that much of the research within this category is characterized by a focus on thinking as a purely 'inside-the-head' process whereas mine attempts to understand knowledge and thinking more ecologically.

There is also a tradition of research in psychology that seeks to trace the epistemological development of subjects. This tradition is influenced by Piaget's concept of 'genetic epistemology' (Piaget 1971, 1950) and his theories of intellectual development. The aim of this research tradition – at the intersection of philosophy and psychology – is to schematize how individuals come to know and how their beliefs about knowledge relate to how they think and reason. Perry's (1970) longitudinal studies of the epistemological development of groups of

almost exclusively male, white, middle-class students at Harvard University allowed him to propose a developmental scheme that moved from the subject's initial 'dualism' through 'multiplicity' to 'relativism' and, finally, to 'relativism with commitment'. The exclusive nature of Perry's sample provoked Belenky *et al.* (1986) to design a study to focus on 'women's ways of knowing'. They extended the phenomenographic perspective of Perry's clinical research design by including structured interviews and elaborated a developmental scheme that proposed that women's epistemological development moved from 'silence' to 'received knowledge' to 'subjective knowledge' to 'procedural knowledge' to 'constructed knowledge'.

Although they operated rather different definitions of knowledge and knowing, the purpose of Perry's and Belenky *et al.*'s research – and the research of others (e.g. Baxter Magolda 1987) that followed – was to develop Piagetian-like stage schemes that could describe the epistemological development of relatively large samples. With specific reference to teacher education, Fuller and Bown (1975) put forward just such a stage scheme of teacher development (see also Kagan 1992). The purpose of my research was rather different. I wanted to describe the distinctive richness and complexity of a few individual beginning teachers' thinking and then interpret the development of this thinking in theoretical terms so as to be able to claim 'prototypical' generalizability (Langemeyer and Nissen 2005) for my conceptualization.

#### **Situating my research within the existing traditions**

The line I have taken in the research reported here is sociocultural in that it regards the individual as a person-in-context (see Cole 1996) and the development of knowledge as being 'stretched over' (Lave 1988) individuals, communities and environments over time. My research sought to understand what three beginning teachers of English thought about the subject knowledge of English over a two-year period (the PGCE to the Induction year) and their crossings of borders between university departments of education and nine school English departments. It started from the assumption that what teachers think is intellectually interesting and not entirely independent of their participation in settings as members of communities of practice (even though, in this research, their practice was not the focus). It attempts to bring a more sociocultural approach to bear on teachers' thinking and knowledge than traditions that have either conceptualized cognition as an individualistic, 'in the head' process or conceptualized development as a series of distinct, genetic stages against which an individual's progress (or even their adequacy) might be measured.

In the chapters that follow, through studying these beginning teachers' accounts and perceptions of their participation in multiple educational settings, I identify key dynamics (in terms of intellectual tensions) in the development of the individual teachers' thinking about subject knowledge and common dimensions

to development. I also explore the processes underlying the development of the beginning teachers' thinking at a theoretical level and suggest how this development might be conceptualized and understood prototypically.

### The book in outline

In Chapter 2, I outline a perspective on knowledge and cognition that informed my inquiry. The chapter proposes a view of knowledge as emerging from the 'shared procedures' of a community working towards the same object and identity (Toulmin 1999). By addressing some foundational, epistemological questions at the outset, this chapter sets a direction for the book as a whole.

Chapter 3 places the research in its cultural-historical context through a discussion of the reforms of teacher education in England in the late 1990s, with specific reference to the concept of subject knowledge. In this discussion, questions of historical variation, values, purpose and 'epistemological stance' (Hillocks 1999) are explicitly addressed.

In Chapter 4, I elaborate a theoretical framework of knowledge creation within a dynamic system that is built out of my argument in the preceding chapters. I show how this framework for understanding informed my research design and the generation of data.

Chapters 5, 6 and 7 are in-depth case studies of the three beginning teachers' thinking about the subject knowledge of English and how this thinking developed over the two-year period. They reveal the distinctiveness and complexity of their thinking and expose a strongly affective dimension. As narratives structured by theoretical concepts, the chapters seek to foreground contradictions and tensions. These extended case studies offer a substantive answer to the question *what* these beginning teachers thought about the subject knowledge of English and how this thinking developed over the period of the research. They also begin to answer the second question as to *how* this development might be conceptualized.

Chapter 8 takes these ideas forward and offers an analysis of the underlying processes of development across the three cases that represents a conceptual answer to the second, more theoretical question. There is no attempt here to 'isolate variables' but rather to identify key dynamics and common dimensions and to interpret the developmental process as a personal trajectory of participation in the practices of multiple settings, oriented and informed by what I refer to (after Dreier (1999) and Damasio (2000)) as stances or dispositions.

In Chapter 9, I consider how this research might contribute to our understanding of teachers' subject knowledge and teachers' thinking and to the concept of development. I also suggest some of the pedagogical implications of the research in terms of how teacher education programmes might better reflect an understanding of subject knowledge as being *amongst* participants in a field as much as it is *within* them. The professional (and, indeed, political) implications

## 6 *Subject Knowledge and Teacher Education*

of this understanding are profound for if we believe that knowledge can only be created and achieve value within a dynamic system that is capable of *being worked on* as well as *working on* its participants, then teaching must be seen as a collective enterprise and a relational practice embedded in specific social, cultural and historical conditions. To say that this is not how the government in England conceived of teachers and teaching at the time of research would be something of an understatement.

## Working on and being worked on: developing knowledge in practice

The research problems addressed in this book are concerned with teachers' knowledge and teachers' thinking. How knowledge and thinking are conceptualised will, therefore, be of central importance. This chapter begins by addressing these foundational questions and does so, by way of a brief introduction, through a critical engagement with the work of Edwards *et al.* in *Rethinking Teacher Education: Collaborative responses to uncertainty* (2002). Edwards *et al.* considered a number of the dilemmas and opportunities for 'duplicitous discourse' presented to teacher educators in England at the time of Circular 4/98 (DfEE 1998a). In doing so, they considered three possible answers (expressed as *objectivist*, *subjectivist* and *reflective* categories) to the question 'What is the knowledge-base that beginning teachers acquire from their teacher education?' that they rejected before proposing a fourth ('the *contextualist* answer') which they considered best reflects the complexities of teaching and learning and the contestable and shifting nature of knowledge.

These answers to the question about the beginning teacher's knowledge-base represent different orientations to knowledge. These different orientations make different claims to justification and truth and the terms used to describe them come, in the main, from the branch of philosophy concerned with the study of knowledge as a subject in its own right – epistemology. As such, they are not unique or original to Edwards *et al.* nor do they address the more psychological (and indeed social) question of how we acquire, develop or come to knowledge. As will become clear, these categories are a useful starting point only; the tensions produced by attempting to draw together some of the philosophical and psychological research on knowledge and cognition will show that there are points at which the boundaries between categories merge. An important factor in the production of this tension is, of course, that philosophy and psychology attempt to answer two very different sets of questions about knowledge and knowing: philosophy (epistemology) is concerned with evaluating claims to knowledge in terms of justification and truth; psychology is concerned with describing how we (expressed as learners) come to know or develop knowledge. My contention is that both sets of questions are relevant to any consideration of teachers' knowledge and thinking and, especially, of how we learn to teach. I also suggest

that the epistemological and psychological questions achieve common ground in answers that foreground the sociocultural – object- or goal-oriented, systemic activity in settings – in accounts of how we come to knowledge.

### Foundational: perspectives on knowledge and teaching

#### **Objectivism and rationalist perspectives on ‘principled and context-free knowledge’**

Philosophically, objectivism has its origins partly in rationalism and the philosophy of Plato and Descartes. Rationalism assumes the possibility of *a priori* knowledge – that is, knowledge not based on or arising out of the world around us – and the existence of general and necessary truths. Scheffler, discussing the rationalistic tradition in education, refers to Plato’s dialogue *Meno* and the supposition therein that the ‘source of genuine knowledge’ is within the individual mind:

... and the knowledge itself to be capable of elicitation by questioning and suggestion which merely draw the mind’s attention to that which it already possesses. The ideal education, for Plato, is a mathematical education, in which the mind comes to an apprehension of necessary truths and ideal forms. (1965: 3)

Davis and Sumara associate the idealism of Plato’s logic with the classical forms of Euclidean geometry and note their profound influence in shaping the predominant contemporary understandings of the structures of schooling and curriculum (2000: 823–5). With reference to teacher education, Edwards *et al.* suggest that:

The very question ‘What is teacher knowledge?’ presupposes an answer that will provide some sort of objective list of knowledge? ... Such a knowledge-base would be objective in that it was unchanging, a source of certainty, providing a firm foundation for clear-cut unconditional statements about teacher knowledge and the justification for a single and unchanging national curriculum for teacher education. (2002: 33–4)

In their review of research into ‘Cognition and Learning’, Greeno *et al.* also identify a rationalist perspective on knowing and learning.<sup>1</sup> They associate rationalism with cognitive perspectives on knowledge:

The cognitive/rationalist perspective on knowledge emphasizes understandings of concepts and theories in different subject matter domains and general cognitive abilities, such as reasoning, planning, solving problems, and comprehending language. (1996: 16)

They identify constructivism as one of the important intellectual traditions within this perspective, where the focus – after Piaget (1971, 1950) – is on characterizing the stages of development in conceptual understanding. *Gestalt* psychology and

symbolic information-processing are identified as other important traditions within the cognitive/rationalist perspective – ‘all three traditions emphasize the importance of organised patterns in cognitive activity’ (Greeno *et al.* 1996: 16).

In a discussion of the mathematical explanations of primary school teachers, Leinhardt refers to ‘principled and context-free knowledge [that] is detached and generally true’ (Leinhardt 1988: 148) and distinguishes it from other, ‘situated’ forms of knowledge. The ‘principled and context-free’ knowledge is associated with algorithms (explained as the ‘generative and always correct procedure’) and situated knowledge with heuristics (a set of problem-solving procedures) (*ibid.*: 147–8), both with reference to teacher thinking. The assumption is that the ‘principled and context-free’ knowledge is in some sense *a priori* and has been elicited and is articulated in the process of education.

Objectivism, in this sense partly informed by rationalist and cognitive perspectives, regards knowing as a process of recognition and construction of concepts, and knowledge as ‘some *third thing* – to be grasped, held, stored, manipulated, and wielded’ (Davis and Sumara 1997: 110). An important limitation of the objectivist position in any analysis of teacher education and development is that knowledge (especially knowledge of the subject to be taught) becomes a stable, detached and universal entity that is presented to teachers and students *as given*. Objectivism can be contrasted with the position Edwards *et al.* (2002) describe as subjectivism.

### **Subjectivism – contrasted with the behaviourist/empiricist tradition of objectivism and postmodern perspectives**

Edwards *et al.* contrast ‘the absolute objectivity of knowledge’ proposed by an objectivist position with ‘the absolute autonomy of the individual’ and ‘the primacy of direct experience as the foundation of all knowledge claims’ asserted by subjectivism (2002: 35). Philosophically, subjectivism contends that knowledge may reasonably be based upon individual views of the world. In other words, a subjectivist epistemology asserts that claims to justification and truth can be properly evaluated solely on the ground of an individual’s direct experience. With reference to teacher education, Edwards *et al.* contend that critics of the universities’ role prioritize ‘on-the-job’ learning and ‘experience in the classroom’ and denigrate attempts to make learning to teach an intellectual, knowledge-based activity. Although they would not identify themselves as subjectivists, Edwards *et al.* suggest that such critics are just that, ‘arguing for the primacy of direct experience as the foundation of all knowledge claims’ (*ibid.*: 35–6).

In its assertion of individual experience as the ground for evaluating claims to knowledge, subjectivism may falsely appear to be related to the philosophy of empiricism. Scheffler, using Locke’s phrase, explains the empiricist view of the mind as *tabula rasa* (a blank slate) to which phenomena are revealed by experience:

The ideal education suggested by an empiricist view is one which supplies abundant and optimally ordered phenomenal experiences ... The ideal education, further, trains the student not only in proper logical habits but in traits requisite for learning from experience – accurate observation, reasonable generalisation, willingness to revise or relinquish purported laws which fail to anticipate the actual course of events. (1965: 3)

Greeno *et al.* link the empiricist view with the psychological tradition of behaviourism. In the behaviourist/empiricist view, ‘knowing is an organised accumulation of associations and components of skills’ (1996: 16). The traditions of associationism (the association of ideas building new associations = knowledge), behaviourism (knowledge as the observable and reinforced connections between stimuli and responses) and connectionism (knowledge as the pattern of connections between elements) are seen as contributing to this view (*ibid.*).

However, it is clear that empiricism/behaviourism accepts some of the assumptions of an *objectivist* epistemology – knowledge is objectified in that it is seen as the ‘accumulation of discrete pieces of evidence’ (Hood 2002), what Kelly (1955, 1963) termed ‘accumulative fragmentalism’. Moreover, empiricism/behaviourism (like the cognitive/rationalist perspective) works within the positivist tradition; that is, it accepts that there is the possibility of ‘a complete and scientific explanation of physical and social reality’ (Pring 2000: 223). In this way, we might discern two traditions of objectivism – cognitive/rationalist and behaviourist/empiricist – but distinguish subjectivism (as proposed by Edwards *et al.*) by its proximity to solipsism. Indeed, in Edwards *et al.*’s account, subjectivism in relation to teacher knowledge and teacher education is more usefully a stick with which to bash critics of the university’s role in initial teacher education, than a philosophical position on teacher knowledge.

Lyotard’s theory of the postmodern condition of knowledge might initially be seen to be situated within the subjectivist view. Lyotard proposed that the production and dissemination of knowledge, once legitimized through the deployment of metanarratives or ‘grand narratives’, has, since the ‘cultural transformations’ at the end of the nineteenth century, ‘dispersed’ into fractured and individualistic personal narratives (1984: xxiii–iv). The individualistic and relativistic aspects (and, for some critics, the ‘anything goes’ implications) of postmodernist accounts of knowledge could lead them to be classified as subjectivist. However, the postmodern position – at least, the ‘optimistic’ version (Usher and Edwards 1994) – is informed by the concept of a test of *shared credibility*, not against an external and observable reality but in the context of shared activities and procedures. In radical constructivism, this test is referred to as the notion of ‘fitness’ for purpose; in postmodernist accounts of knowledge it is the concept of ‘language games’ (Wittgenstein 1972, Usher and Edwards 1994). And it is the notion of shared credibility that links these theories of knowledge to Edwards *et al.*’s fourth

orientation: contextualism. The importance of the subjectivist position in Edwards *et al.*'s argument is that it presents them with an opportunity for a critique of the proposition that teacher education is merely a 'practical' activity or even a sub-intellectual one. Subjectivism also offers a good point of contrast with the reflective position.

### **The Reflective perspective: pragmatism and the concepts of 'professional' or 'practical' knowledge**

The reflective perspective on knowledge is strongly associated with the work of Donald Schön (Edwards *et al.* 2002: 36–7). Schön rejected 'technical rationality' as a way of understanding cognition and learning in the professions; through a series of case studies, he proposed the concept of 'ordinary practical knowledge' (Schön 1983: 54). Edwards *et al.* suggest that he is:

... in effect rejecting objective knowledge. At the same time he is not accepting the chaos of subjectivism (what he calls 'no knowledge at all' – Schön and Rein 1994: 42), for he wants to argue that professionals work with a tacit form of knowledge which he terms 'knowing-in-action' and which surfaces through a process he terms 'reflection-in-action'. (2002: 37)

Reflective practice is subject to critique in Edwards *et al.*'s analysis (see also Gilroy 1993). In Schön's work they see the attempt to 'reconstruct the knowledge-base of teacher education' (after the decline of the 'grand narratives of the disciplines') through the presentation of 'niche narratives ... personal histories presented as reflective practice' (*ibid.*: 46) as a false dichotomy.

Philosophically, the reflective position can be seen to have grown out of pragmatism, associated with Peirce, James and Dewey. Scheffler notes that, for Dewey, the educational process is 'one of trying and undergoing – trying an idea in practice, and learning from the consequences' (1965: 4). The pragmatic view suggests that:

To learn something significant about the world, we must do more than operate logically upon basic truths that appear to us self-evident, and we must go beyond reasonable generalisations of observed phenomenal patterns in our past experience. Experimentation involves active transformation of the environment, in a manner dictated by leading ideas put forward in response to problems and directed toward the resolution of these problems. (*ibid.*: 3–4)

The pragmatic origins of Schön's theories of professional learning and professional knowledge can be seen in the concepts of reflection-in-action and reflection-on-action as heuristics for practical problem-solving. The key test for knowledge from within the reflective position is whether it works in practical situations.

Greeno *et al.* group the pragmatic perspective on knowledge with the 'socio-historic' to form the compound 'situative/pragmatist-sociohistoric' (1996: 17). Taking Dewey as typical of the pragmatist perspective and Vygotsky as typical of the sociohistoric, they bring the two together as influential in the new 'situative perspective' on knowing and learning in that they both '... emphasise that knowledge is constructed in practical activities of groups of people as they interact with each other and their material environments' (*ibid.*: 16).

Greeno *et al.*'s compound formulation suggests that this is a point at which the boundaries of Edwards *et al.*'s four categories bleed into each other. Within the reflective position, this can be said to take place at two points: first, the individual agent's interaction with their setting; and second, the classification of 'working knowledge' or 'practical knowledge' as unique categories that are separate from – and in some senses inferior to – 'academic' or disciplinary knowledge. It is worth briefly considering the work of Eraut here.

Eraut could be said to bridge the reflective and contextualist positions. Through the concept of 'professional performance in context', he argues that 'the nature of the context affects what knowledge gets used and how' (1994: 20) and that 'transferring from one context to another requires further learning and the idea itself will be transformed in the process' (*ibid.*). He also distinguishes 'professional knowledge' from 'the knowledge from traditional disciplines' and makes a distinction between 'technical' or 'practical' knowledge' (sometimes referred to as 'craft knowledge' (McNamara and Desforjes 1978, Tom 1984)) and 'discipline-based' forms of knowledge. Eraut claims that the former ('practical' knowledge) depends for its validity on its use value in context (its relevance) whereas the latter ('discipline-based' knowledge) doesn't depend on use value and relevance and may therefore be described objectively.

It is through this false dichotomy (and through the one-way conceptualization of the context-individual relationship) that Eraut's work makes itself distinct from the contextualist perspective. Although there is an appeal to interaction and context, the distinction between 'practical' and 'discipline-based' knowledge allows Eraut to maintain an essentially objectivist epistemology. There is no sense that contexts themselves may be reconfigured through the participation of individuals. As I will show, such a division would not be a feature of a contextualist, sociocultural perspective and, as such, I believe locates Eraut within the reflective position.

In summary, the reflective perspective, closely associated with Schön's 'epistemology of practice' (Schön 1983: 113) and Dewey's pragmatism, views knowing not as acquiring fixed neural connections but as an ongoing process of developing understanding in practical situations. Knowledge, in this perspective, can arise out of 'doing' and, to some extent, interactions. To varying degrees, it may therefore be thought of as both an individualistic and collective orientation to knowledge, although it is clear that its identification of 'practical knowledge' –

knowing-in-action – as a distinct category allows it alone to develop in relation to context and for other, more objectivist – and transcendental – forms of knowledge to exist individualistically, inside the head of the knower without reference to contexts of any sort. The reflective perspective allows for an individual's practical knowledge to be developed as a consequence of working in a particular setting but not for the setting itself (specifically, the forms of knowledge held within that context) also to be changed. Edwards *et al.*'s final position, contextualism, offers a perspective on knowledge *per se* that is premised on just such a reflexive and transactional relationship between individual and setting.

### **Contextualism: language games and systemic activity**

In answering the question 'What is the knowledge-base that beginning teachers acquire from their teacher education course?', Edwards *et al.* reject the three previous perspectives before mounting a defence of a fourth – the contextualist perspective. Their approach contrasts with that of Greeno *et al.*, a source I have referred to throughout this brief discussion, who, whilst outlining three general perspectives on knowing and learning from the psychological research (behaviourist/empiricist, cognitive/rationalist and situative/pragmatic-sociohistoric), acknowledge the 'considerable strengths of all three' and propose the 'value and importance of using their resources pluralistically in considering educational problems' (Greeno *et al.* 1996: 16). Rather, Edwards *et al.* see their version of contextualism as bridging the dichotomy of objectivism and subjectivism whilst simultaneously providing a more cogent, sociocultural theorization of the reflective position's focus on practice.

The philosophical origins of the contextualist position can be traced to the later work of Wittgenstein (Edwards *et al.* 2002: 38–46, Wittgenstein 1972). Wittgenstein, Edwards *et al.* argue, abandoned the search for objective truth and certainty '... arguing that it is the social system we operate in that provides the criteria against which we judge whether something is perceived as being knowledge or falsehood' (2002: 38).

They use Wittgenstein's notion of *language game* – a system, bounded by a shared purpose, 'consisting of language and the actions into which it is woven' (Wittgenstein 1972: 5§) – to describe the social process by which knowledge is legitimized and disseminated. This is 'rule-governed behaviour' that varies from context to context (Edwards *et al.* 2002: 39) so, from the contextualist perspective, it would be a mistake to generalize from these language games in order to compile a universal codification of teacher knowledge. With reference to teacher education, Edwards *et al.* suggest that:

The rule-governed nature of the 'game' of teaching requires first practice and second the understanding of the criteria that guide this practice, which would include

experiencing and grasping the shifting and varied nature of the criteria guiding their practice. It is the first of these requirements that student teachers naturally concentrate on as they work at surviving in the classroom, but it is the second that would allow them to begin to see the ways in which their practice is rule-governed, connected to a social context and thus subject to change. (*ibid.*: 40)

Earlier, in my discussion of subjectivism, I pointed out the importance of the idea of a test for shared credibility. Contextualism is not subjective relativism nor does it imply that ‘anything goes’. Edwards *et al.* argue for the distinctive contribution of a contextualist answer to the question of a knowledge-base for teaching:

What has to be avoided is both a context-free (transcendental) argument for objectivity and a context-bound (socially subjective) argument for the relativity of knowledge. By arguing that knowledge claims are to be located within language games which have their life within various social contexts, one avoids any attempt at some sort of supra-objectivity, only a straightforward description of how knowledge is to be found in practice. By arguing that language games are governed by rules provided by criteria, one avoids any attempt at accepting that ‘anything goes’ for knowledge. (*ibid.*: 44)

It is important to note, however, that ‘certain limited and temporary objectivities’ within the language game are necessary in order to provide an agreement on the basis on which the game can be played (*ibid.*: 46). This is one way – through the incorporation of a temporary and contingent objectivism – in which Edwards *et al.*’s contextualist perspective can be seen to encompass elements of the three other perspectives they have dismissed and which they assert that contextualism supersedes. Similarly, the induction of new teachers into a form of ‘knowing-in action’ (Schön 1983) can be seen as immersion into the activity of a language game ‘followed by critical illumination of that activity’s context’ (reflection-on-action) (Edwards *et al.* 2002: 47). In this way, Edwards *et al.* would reinterpret reflective practice as ‘contextualist practices’ (*ibid.*).

Greeno *et al.* developed the compound formulation of ‘situative/pragmatist-sociohistoric’ (1996: 17) to emphasize the situated (i.e. contextual) character of knowledge arising out the interactions of people and their environments over time. Drawing on the research traditions of ethnography, ecological psychology and situation theory, they proposed a view of knowledge and knowing that is focused on activity and on ‘the processes of interaction with other people and with physical and technological systems’ (*ibid.*). The sociohistoric dimension to this theory is represented by the understanding – from Vygotsky (1974) via Bruner (1986) – that ‘mind is transmitted across history by means of successive mental sharings’ (Roth 1999: 10).

In his account of the development of epistemology over the last 350 years, Toulmin proposed that the contributions of Wittgenstein and Vygostky are

mutually supportive. For Toulmin, it was in a concern with 'shared procedures' and practice that their work converges:

For both men, language has a definite meaning only when it is related to a given constellation of practical activities. Each lexical term is meaningful within a *sprachspiel* (or 'language game'); but a language game is meaningful only if construed in the context of a given *Lebensform* (or 'form of life'). (1999: 59)

So it is in the intersubjectivity of collective situations that meanings are realized and through language that we 'internalise the meanings and patterns of thought that are current in our culture or profession' and, over time, 'acquire inner experiences modelled on the public activities of our culture and society' (*ibid.*: 58). Theoretically, within this perspective on knowledge, the pragmatic and individualist orientation towards practical problem-solving situations is linked to the sociohistoric theory of mind.

Once again, the notion of a test of shared credibility is important. From Toulmin's perspective, 'meaning is determined by its place in a given typified action sequence' (*ibid.*: 60), that is, by its place within a practical context. Knowledge is meaningful, knowledge is said to be developed from within intentional activity and knowledge comes to be seen as systemic, 'shared procedures' for evaluating meaning:

So understood, shared procedures are neither the exclusive property of collective professions nor the exclusive property of individual agents. Rather, the rational history of a human discipline involves a continuing interchange between the innovations of creative individuals and their acceptance or rejection by the professional community. (*ibid.*)

This notion of the importance of the professional community's evaluation and the relationships between creative individuals and the community is worth developing further at this point as it informs my theorisation of the development of beginning teachers' thinking about subject knowledge. In this way, Toulmin's concept of 'shared procedures' leads us to a consideration of Lave and Wenger's (1991) concept of 'communities of practice'.

## Learning, participating and developing a sense of identity

### Communities of practice and the existence of knowledge

In *Situated Learning: Legitimate Peripheral Participation* (1991), Lave and Wenger present five studies of learners becoming midwives, tailors, quarter-masters, butchers or non-drinking alcoholics through a process of apprenticeship. One of the important contributions of Lave and Wenger's research has been to recover the dynamic complexity of apprenticeship learning from various reductive

interpretations and to link the movement to full participation in practice (defined as shared, *conceptual* work) to the formation of the apprentice learner's identity. Within this perspective, apprentices do not just 'acquire the "specifics" of practice through "observation and imitation"'; by being absorbed – peripherally at first – in the 'culture of practice', apprentices develop 'knowledge-in-practice' (1991: 21–4). Knowledge achieves meaning within the 'community of practice'; defining such a community as 'a set of relations among persons, activity, and the world, over time and in relation with other tangential and overlapping communities of practice' (*ibid.*: 23–4), they suggest that:

A community of practice is an intrinsic condition for the existence of knowledge, not least because it provides the interpretive support necessary for making sense of its heritage. Thus, participation in the cultural practice in which any knowledge exists is an epistemological principle of learning. (*ibid.*: 24)

For Lave and Wenger, all claims to knowledge are evaluated within a community of practice ('the place of knowledge is within a community of practice' (*ibid.*: 25)). This does not mean that all members of that community have to be co-present; it does mean 'participation in an activity system about which participants share understandings' (*ibid.*: 23). They contrast this form of learning with a more didactic form where increasing participation is not the principal motivation for learning but where educational exchange value (i.e. engaging in an activity in order to be awarded a qualification on completion) replaces the use value of increasing participation (*ibid.*: 31). Such a system engenders the 'commodification of learning' where 'parasitic practices' such as test-taking are designed to increase the exchange value of learning alone (*ibid.*). Knowledge claims in the commoditized system are evaluated by 'didactic caretakers' (*ibid.*) whereas knowledge claims in the more (in Lave and Wenger's terms) 'authentic' system are evaluated within a community of practice.

However, this position could imply a static notion of knowledge – some stable entity or set of practices – that is merely reproduced by the system. Innovation could be seen as impossible within such a closed system of reproduction, which has certainly been how some critics of school-based teacher education have understood apprenticeship learning (e.g. McIntyre 1997). Lave and Wenger address this issue of the cycle of reproduction of a community and its specialized knowledge by considering the ways in which 'newcomers' and 'old-timers' interact and how their different identities (as newcomers and old-timers) generate productive tensions and contradictions:

Newcomers are caught in a dilemma. On the one hand, they need to engage in the existing practice, which has developed over time: to understand it, to participate in it, and to become full members of the community in which it exists. On the other hand,

they have a stake in its development as they begin to establish their own identity in its future. (*ibid.*: 33)

They describe this as ‘the continuity-displacement contradiction’ that involves conflict and tension (between either expert/novices or, more loosely, generations) centred on learning, participating and a developing sense of identity. Knowledge, as a set of shared procedures for evaluating meaning, has a key role to play in this relationship and it is through the ‘continuity-displacement contradiction’, arising out of the granting of legitimate peripheral participation to ‘newcomers with their own viewpoints’, that the conditions are established for the generation of new knowledge:

... legitimate peripheral participation is far more than just a process of learning on the part of the newcomers. It is a *reciprocal relation* between persons and practice. This means that the move of learners toward full participation in a community of practice does not take place in a static context. The practice itself is in motion. (*ibid.*: 34; my emphasis)

Lave and Wenger’s concepts of communities of practice, legitimate peripheral participation and the continuity-displacement contradiction are useful when considering how claims to knowledge can be evaluated and validated and also when considering the relationships between individuals, communities and new knowledge or innovations. Lave and Wenger’s work develops our understandings of a contextualist perspective on knowledge in that the learner can be conceptualized as ‘both a user and producer of knowledge within a set of social practices’ (Edwards *et al.* 2002: 109).

With specific reference to teacher education, Putnam and Borko (2000) developed the theories of knowledge, knowing and learning proposed by Lave and Wenger (1991), Lave (1988), Brown *et al.* (1989) and others to identify possibilities for the design of ‘authentic activities’ in teacher education programmes. Three conceptual themes are central to their argument: ‘... cognition is a) situated in particular physical and social contexts; b) social in nature; and c) distributed across the individual, other persons, and tools’ (Putnam and Borko 2000: 4).

An important implication of their argument for teacher educators is to identify the ‘... key characteristics of field-based experiences [school placements/teaching practicums] that can foster new ways of teaching, and determining whether and how these experiences can be created within existing school cultures’ (*ibid.*: 10).

In other words, teacher educators need to consider whether existing school cultures and communities of practice are ‘open’ enough to permit for newcomer teachers the legitimate peripheral participation conceptualized by Lave and Wenger and to allow for the productive tensions generated by the continuity-displacement contradiction. What are the consequences for professional learning,

for example, when the community becomes a closed, reproductive system and one where knowledge is understood as static and given?

In order to understand more fully the process by which knowledge is generated within systemic activity and 'stretched over' (Lave 1988) the individual, the community and various aspects of the physical environment, ecological psychology can contribute to our understanding of a contextualist perspective on knowledge. Aspects of ecological psychology were used by Edwards *et al.* (2002) and Greeno *et al.* (1996) in their respective elaborations of contextualism and the situative/pragmatist-sociohistoric view of knowledge as distributed in the world. Given the multiple, multilayered and overlapping dynamic systems in which beginning teachers learn to teach their subjects, ecological psychology can make a useful contribution to the analysis of teachers' development.

### **The contribution of ecological psychology to perspectives on knowledge and teaching**

Informed by the work of Gibson (1966, 1979) and others (for example, Greeno 1994; Greeno *et al.* 1996), ecological psychology proposes that 'knowledge is distributed in the world among individuals, the tools, artefacts, and books they use, and the communities and practices in which they participate' (Greeno *et al.* 1996: 20). Such an account of knowing and learning implies that it is the general characteristics of the context or activity system that determine the generation and evaluation of knowledge. Gibson's notion of *affordances* is important in this respect, where affordance refers to 'whatever it is about the environment that contributes to the kind of interaction [between an 'agent' and a 'system'] that occurs' (Greeno 1994: 338). This idea has emerged from interactionist accounts of cognition. Arising out of situation theory, another concept is useful within the ecological perspective and this is *attunements to constraints* (Greeno 1994, Greeno *et al.* 1996). The concept of *constraint* refers to a regularity involving a situation that may involve a dependent or causal relationship. Knowing that when one perceives smoke there may be a fire involved would be described as an 'attunement to the constraint that *smoke means fire*' (Greeno 1994: 339). Gibson's (1966) theory of perception as the active 'picking up' of information in the environment 'as an aspect of the agent's activity' (Greeno *et al.* 1996: 21) is the foundation of this view of learning and knowledge, where learning could be described as the progressive attunement to the constraints of an activity by the agent (the learner) and knowledge as being afforded by the interaction of an agent with the system (where system is defined as activity system, its tools and communities).<sup>2</sup> The ecological perspective suggests that knowing is both individual and collective in the context of activity and that knowledge emerges in the interaction between agent and system.

With reference to the research on teacher cognition and 'working knowledge in teaching', Yinger and Hendricks-Lee identify a shift in focus from 'individual

cognitive processing and technical action' to an interaction between individuals and their environment (1993: 102). They characterize this shift as one towards a view of 'ecological intelligence', within which 'how to characterize and capture knowledge becomes a pertinent issue' (*ibid.*: 104). They offer the following propositions about knowledge:

- Knowledge is inherent and widely dispersed across complex systems of information and action: cultural, physical, social, historical and personal.
- Knowledge within these systems becomes available as working knowledge in particular activities and events.
- Working knowledge is constructed jointly through responsive interaction (conversation) among all the participants (systems) in an activity. (*ibid.*: 112)

At first sight, there may appear to be some similarities with Schön's concept of 'ordinary practical knowledge' (Schön 1983) – for example, the conceptions of 'working' and 'ordinary practical' knowledge and the apparent similarity of 'reflection-on-action' and 'responsive interaction'. An important difference, however, is that Schön's account is essentially individualistic in that the process of reflection and the emergence of 'knowing-in-action' takes place inside the head of the knower, whereas in an ecological account, such as Yinger and Hendricks-Lee's, the conditions for knowledge are set by the attunements of the agent to the constraints and affordances of the activity system.

To explore this relationship between the agent and the system further within a contextualist perspective on knowledge a little more closely, the recent work of Davis and Sumara (2000) and the earlier work of Urie Bronfenbrenner (1979) offer usefully integrative models. Again, this discussion will support my developing argument about the complex ecologies in which beginning teachers think and learn.

#### *A complex view of the 'nestedness' of knowledge in the ecology of human development*

In their *Harvard Educational Review* article of 1997, Davis and Sumara proposed a complex and interactive perspective on knowledge for teacher education. They noted what they saw as 'a deeply embedded cultural inability to rid ourselves of the notion that knowledge ... has some sort of corporeal existence' (Davis and Sumara 1997: 109). Instead, they argued that knowledge arose out of action and existence in a 'biologically and phenomenologically constituted world' (*ibid.*) and that 'cognition exist[ed] in the interstices of a complex ecology of organismic relationality' (*ibid.*: 110). Distinguishing between 'collective knowledge' and 'individual understanding', they nevertheless described these as 'dynamically co-emergent phenomena' (*ibid.*). The problem for Davis and Sumara is that school systems treat 'such matters as the status of knowledge and the cultural context

of education ... as unproblematic givens': 'They arrive, completed, on the teacher's desk in the form of curriculum manuals and standardized textbooks, and their believed-to-be static natures are continuously announced in an unceasing barrage of examinations' (*ibid.*: 121).

Davis and Sumara developed this ecological and cultural perspective on knowledge in their 2000 article, 'Curriculum forms: on the assumed shapes of knowing and knowledge' (Davis and Sumara 2000). Like the 1997 piece, this article makes reference to an eclectic range of literature from biological and genetic science, HIV research and immunology to the philosophy of mathematics, literary anthropology and holistic philosophies. For my present purpose, I will focus on their analysis of the embodied and embodying nature of knowledge and the relationships between different layers or 'nests' of knowing.

They begin by drawing an analogy between the structures of schooling and curriculum (and associated practices such as the pre-planning of learning objectives) and the 'classical' structures required by Plato's logic and Euclid's geometry ('i.e. lines, grids, spirals, and so on' (*ibid.*: 830)). They argue that these 'images and 'metaphors' have been subject to critique 'for the last few centuries' but that this critique has had little impact on the way we think about knowledge in the context of schooling (*ibid.*: 823). Instead they propose fractal geometry (as 'a mathematical analogue to such discourse fields as post-modernism, post-structuralism and ecological theory' (*ibid.*: 821)) as a better way for understanding living systems 'both structurally (in terms of the characters of their sub-systems) and operationally (in terms of the sorts of rules that guide the interactions of these systems)' (*ibid.*: 828). Fractal images are held to be 'far closer to the flexibility of life' (Stewart 1998; cited in Davis and Sumara 2000: 825), and the concepts of scale independence (meaning the same regularity of detail is presented under any magnification) and self-similarity (meaning that one part of the figure resembles the whole) are important.

Davis and Sumara draw on this fractal geometry to provide a visual metaphor for the 'integration of recent but varied discourses on knowing and knowledge' (*ibid.*: 826). Their rationale is that these varied discourses 'rely on very similar dynamics while focusing on very different levels of organism or social organisation' (*ibid.*) The 'varied discourses' under discussion by Davis and Sumara are 'subject-centred constructivism', 'social constructionisms' and 'cultural and critical discourses' (*ibid.*: 831–3). In tracing the commonalities between these discourses, they suggest that the 'metaphoric commitment to the body across interpretive frameworks' is an important integrating factor (*ibid.*). Knowledge is seen to be embodied and embodying (whether in relation to 'a person, a social group or a culture') in that it both arises out of bodily action and gives coherence and 'maintains [the] viability' of a body (*ibid.*: 835). To continue with the fractal metaphors: 'Individual knowing, collective knowledge and cultural identity become three intertwining, self-similar levels of one phenomenon –

ones which, as with the fractal image, can only be understood in relation to one another' (*ibid.*: 834).

In proposing the 'nestedness' of bodies of knowledge and discourses, Davis and Sumara identify the self-similar and scale-independent dynamics that operate at the different 'nests' or layers of knowing, from the 'sub-subjective' (bodily subsystems) to the 'supra-cultural' (planetary). The embodied and embodying attributes of knowledge and the 'permeability' of the boundaries between the nested layers (that may falsely be seen to separate agents and systems) are important aspects of these self-similar and scale independent dynamics.

The concept of the 'nestedness' of bodies and discourses foregrounds the inter-relationships and interdependence within and between complex systems (at individual, social and cultural/historical levels) at work in the activity of learning to teach. Their account of knowledge – and of learning – in relation to teaching offers a radical challenge to the view that learning to teach consists simply of the individual acquisition of skills and techniques and the filling of 'gaps' in subject knowledge. Their visual metaphor (developed specifically in relation to teaching and learning in schools and pre-service teacher education) also extends Bronfenbrenner's theory of human development and its ecology of 'nested' environments or systems.

Writing in 1979, Bronfenbrenner proposed 'a new theoretical perspective for research in human development' focused on the evolving interaction between the developing person and the environment (1979: 3). Bronfenbrenner conceptualized the 'ecological environment ... as a set of nested structures, each inside the next, like a set of Russian dolls' (*ibid.*). He identified and described four systems that constitute the ecological environment:

- Microsystem* what is experienced by the developing person in a given setting;
- Mesosystem* the interrelations among two or more settings in which the developing person actively participates;
- Exosystem* one or more settings in which the developing person is not an active participant but in which events occur that affect or are affected by what happens in the setting containing the developing person;
- Macrosystem* consistencies in the form and content of lower-order systems that exist or could exist at the level of the subculture or the culture as a whole. (*ibid.*: 21–6)

Bronfenbrenner's model differs from that of Davis and Sumara in that it is focused on the interaction between the developing person and the ecological environment expressed in terms of these five systems. While they all propose a cultural dimension to knowledge and development, Davis and Sumara's ambitious project attempts to show how dimensions of knowledge that range from bodily subsystems to the planetary are interrelated and reflexive. In their work, however, an important

emphasis is also given to the developing person's subjectivity and biography and how these become resources that are drawn upon in the making of knowledge. In Bronfenbrenner's work, an important emphasis is given to the concept of *setting* and how the interrelations among settings are *experienced* (directly or indirectly) by the developing person. Bronfenbrenner also begins to suggest a more direct and reflexive relationship between the individual, the collective and the cultural levels by defining the macrosystem (the cultural or subcultural level) as 'consistencies' in the 'form and content of lower-order systems ... along with any belief systems or ideology underlying such consistencies' (*ibid.*: 26). Bronfenbrenner's attention to settings, relationships between settings and how they are experienced is important and it is the concept of setting and the distinction between setting and aspects of the cultural dimension (Bronfenbrenner's macrosystem or what Lave (1988) referred to as *arena*) that will be considered in the next section of the chapter.

### Settings, arenas and the development of knowledge

Lave builds on the work of Bronfenbrenner and others in developing our understanding of the concept of setting. In *Cognition in Practice: Mind, Mathematics and Culture in Everyday Life*, Lave sought to understand cognition as 'a nexus of relations between the mind at work and the world in which it works' (1988: 1). To achieve this, she introduces the concept of *arena* – defined as a 'physically, economically, and socially organised space-in-time' (*ibid.*: 150). In her own research into the 'everyday' numeracy practices of shoppers, she describes the concept of the supermarket as an arena: it is 'the product of social formation and political economy' that is 'not negotiable directly by the individual' (*ibid.*: 151). To explain how the individual does come to experience, is affected by *and* affects the arena, Lave uses the concept of setting:

... for individual shoppers, the supermarket is a repeatedly experienced, personally ordered and edited version of the arena. In this aspect it may be termed a setting for activity. Some aisles in the supermarket do not exist for a given shopper as part of her [sic] setting, while other aisles are rich in detailed possibilities. (*ibid.*)

Lave emphasizes the importance of the dialectical relationship between activity and setting: 'A setting is generated out of a person's grocery-shopping activity and at the same time generates that activity. In short, activity is dialectically constituted in relation with the setting ...' (*ibid.*).

Arena, in this analysis, is at the cultural or subcultural level and is a product of 'a particular constitutive order', defined by Lave as a system that 'motivate[s] experience' and is a resource that is 'drawn upon in the fashioning of intentional activity in the lived-in world' (*ibid.*: 178). This suggests the important question: how might the concepts of arena and setting operate in analysis of initial teacher education?

Leach and Moon, in their analysis of 'professional knowledge', have used Lave's concepts of arena and setting to suggest the dynamic and interactive nature of teachers' knowledge (Banks *et al.* 1999; Leach and Moon 2000). They do so in an effort to provide a 'strong focus on learning' in their account of knowledge and to support an analysis of teachers' learning and development that is multi-dimensional (Leach and Moon 2000: 395). In relation to teacher knowledge, they suggest that:

A pedagogic arena and a pedagogic setting can be explored at a variety of sites and levels. Policy-makers, teachers, software designers, educational website creators and parents, for example, all create pedagogic arenas, their specified 'curriculum' being manifest through these pedagogic dimensions, whether explicitly or implicitly. Arenas are brought to life in particular pedagogic settings – the practices that teachers, together with a particular group of learners, create, enact and experience. Thus the notion of a pedagogic setting can, and should, encompass individuals and the group as a whole as the unit of analysis. Settings just as much reflect teachers' own perceptions of their core task of teaching (and learners' experiences of and interactions with this endeavour) as they are the outcomes of the mediating influences of institutional goals, activities, structures and policies at local and national level. (*ibid.*)

Leach and Moon's development of pedagogic arena and pedagogic setting extends Lave's focus on the interrelationship between the two and the ways in which the setting is constituted dialectically in relation to activity. Settings, for Leach and Moon, can be of different orders and, together with the macrosystemic dimension of arena, make up the ecological environment in the development of teacher knowledge.

### Implications for studies of teachers' knowledge and thinking

What Edwards *et al.* refer to as the contextualist perspective on knowledge and learning – informed by 'situative/pragmatist-sociohistoric' (Greeno *et al.* 1996: 17) approaches to cognition – can be generative in analyses of how beginning teachers think about subject knowledge. Contextualist and sociocultural perspectives represents a shift in focus from 'individual cognitive processing and technical action' to interaction between individuals and their environment over time (Yinger and Hendricks-Lee 1993: 102). This perspective emphasises the importance of object-oriented, systemic activity in the development of teacher knowledge and proposes that knowledge itself (rather than just separate – and perhaps lower-status categories such as 'practical' or 'professional' knowledge) is 'stretched over' (Lave 1988) the individual, the community and the environment. A sociocultural perspective proposes that 'individual' knowledge always stands in relation to a community of practice that evaluates its claims to

justification and truth; contextualism proposes that 'individual' knowledge stands in relation to the 'shared procedures' (Toulmin 1999) of a community and the 'bodies of knowledge' of a society that have become a cultural resource.

In their integrative model of various discourses on knowledge and knowing, Davis and Sumara offer a visual metaphor that can also inform studies of beginning teachers' development. If we put the biochemical and astronomical layers to one side, their 'nested' model suggests a focus of analysis on 'individual knowing, collective knowledge and cultural identity' (Davis and Sumara 2000: 834) whilst also acknowledging the interplay between these three layers and the permeability of the boundaries between the layers. In other words, their model represents how the individual is situated within the setting and *becomes part of it*. These three layers also conflict and it is against the sometimes contradictory dynamics of individual history or autobiography playing against the activities of a community playing against the layer of cultural resources and political economy that the development of the beginning teachers' thinking about subject knowledge can be examined. Bronfenbrenner's (1979) emphasis on understanding the ways in which the developing person *experiences* their settings and Lave's (1988) distinction between arena and setting can also inform such an analysis of development that isn't founded upon an objectivist epistemology or an individualistic model of mind.

## Know, understand and be able to do: professionalizing knowledge

In this chapter, I put my research into its cultural-historical context – both in terms of contemporaneous education policy in England and traditions of inquiry within the educational research community. The chapter argues that the objectification and codification of a specialized body of knowledge – specifically, in my research, the category of subject knowledge – is one aspect of the movement to professionalize teaching and that the crisis of professionalism that was occurring at the time of the research was also a crisis of knowledge.

### Reforming teaching: the codification of professional knowledge

... initial teacher education has increasingly become a major site for political debate and struggle in recent years. It was not always so. (Furlong *et al.* 2000: 1)

In *Teacher Education in Transition: Re-forming professionalism?*, their analysis of initial teacher education in England since the early 1980s, Furlong *et al.* trace the development of policy in this field towards the apparently diversified but increasingly centralized system that operated in the late 1990s. They see the establishment of the Council for the Accreditation of Teacher Education (CATE), the subsequent revision of conventional training courses and the introduction of new routes into teaching in the 1980s, along with the more directive interventions of the 1990s (such as the establishment of the Teacher Training Agency and the specification of, first, competences (DfE 1993) and then national Standards for the award of Qualified Teacher Status and the Initial Teacher Training National Curricula (DfEE 1998a)), as indicative of unprecedented struggle and debate. Moreover, they state that:

... most of the changes introduced in the 1990s have been concerned to influence the nature of professional knowledge, skills and values that student teachers are expected to have ... The assumption behind policy within this area has been that changes in the form and content of initial teacher education will, in the long run, serve to construct a new generation of teachers with different forms of knowledge, different skills and different professional values. (Furlong *et al.* 2000: 6)

Whilst it is certainly the case that government policy in this area in the late 1990s sought to reform teaching and to remake understandings of teaching as a profession, it was certainly not the first time that interest in what teachers should know has been related to their claim for a professional identity. Ken Jones, for example, notes a 'radical shift' in England between 1968 and 1974 during which departments of teacher education '... were affected by, and themselves generated, movements of protest and attempts to develop new kinds of knowledge and new sorts of social identity' (Jones 2003: 87–8).

Bullough (2001) has written about how the 'professionalizing' instinct of late nineteenth-century teacher educators in the US – as they moved from the normal schools to the university sector – also made special, epistemological claims. So although an interest in what kinds of knowledge teachers should have (and that teacher education should develop) has been of long-standing interest, what the 1990s did bring was an attempt to mould this interest around a new managerialist (Sachs 2003) professional identity.

### Teaching as a profession

Hoyle and John offer what they refer to as a 'classical conception' of a profession: an occupational group that bases its practice on a body of specialist knowledge, that is able to work autonomously, and of whom there are high expectations of responsibility. With reference to the 'body of specialist or technical knowledge' of a profession, they identify two parts: '... first, it has been tested by scientific method, thereby acquiring validity; second, it is supported by a variety of theoretical models and case descriptions which allow the knowledge to be applied to specific aspects of practice' (1995: 46–7).

Hoyle and John suggest that the application of this 'medical model' of professional knowledge to teaching is problematic because of the long-standing distinction between the technical and practical elements of knowledge (after Oakshott 1962): the practical knowledge of teachers, 'expressed in the act of practice and through reflection on those acts' (*ibid.*: 46), appears to resist the codification required for high-status theoretical knowledge and doesn't claim to have the always-and-wherever, positivistic validity sought by 'scientific method'. Although it may appear that Hoyle and John are suggesting that teaching's claim to professional status is unfounded, in fact their argument is that *profession* itself 'is an essentially contested concept' (*ibid.*: 1).

Calderhead (1987: 1–3) offered an influential rationale for considering teaching as a profession in which practical and theoretical knowledge are key elements. The rationale identified four characteristics of professional activity: the first, again, is the possession of a 'body of specialised knowledge acquired through training and experience' – it is the blend of theoretical and practical knowledge realized through *praxis* that is important in this definition; the second characteristic is that the knowledge-in-use is 'goal-oriented in relation to [...] clients', although he

recognizes that in the case of education the specification of a clientele can be problematic; the third characteristic is that professionals use their expert knowledge to 'analyse and interpret' problems that are 'complex and ambiguous', making 'judgements and decisions as they formulate a course of action intended to benefit their client'; finally, this leads to the fourth characteristic of professional activity identified by Calderhead: 'skilful action that is adapted to its context', '[t]hrough repeated practice, the professional has developed various specialist and "knowledgeable" skills' (*ibid.*: 3).

Acknowledging that 'skilful action' – although founded on principled or strategic practical and theoretical knowledge – will vary according to context, and that this allows for the generation and deployment of *new* practical and theoretical knowledge, again seems especially apposite when considering teaching as a professional activity.

As discussed in the previous chapter, Eraut also identified a category of knowledge termed 'professional' and suggested that the context of professional performance affects what '[professional] knowledge gets used and how' (1994: 20). Like Calderhead, Eraut maintained that this knowledge is contextual – or situated – and tacit; it is therefore of a different order to what Eraut called 'discipline-based knowledge' which appears to be in some sense *a priori* and always true, without depending on 'use value and relevance'. In this way, Calderhead and Eraut's contributions are paradoxical in that whilst proposing that teaching has a specialized body of knowledge unavailable to the lay person and thereby making the occupation deserving of professional status, professional knowledge is simultaneously differentiated as a tacit, relativistic, uncodifiable form of knowledge in comparison to what Eraut refers to as 'traditional disciplines' (*ibid.*). This understanding of professional knowledge accepts an objectivist epistemology insofar as it conceptualizes 'discipline-based knowledge' as 'not depending on the field of professional action' (*ibid.*: 43), divorcing knowledge from the communities of practice and activity systems in which it is developed. In this analysis, disciplinary knowledge is just 'out there' whilst professional knowledge is forever idiosyncratic.

Nevertheless, these considerations of teaching as a profession are interesting for my purposes here because of the importance they accord to teachers developing and possessing a body of specialist knowledge. The work of Calderhead, Eraut and others (arising out of McNamara and Desforges 1978, Tom 1984, Elbaz 1983, Leinhardt and Smith 1985, etc.) is indicative of attempts from within the profession to identify a specialist body of knowledge that will provide grounds for claims to professional status. As Labaree (1992: 123) points out, this move can also be seen as an 'extension of the effort by teacher educators to raise their own professional status' and to secure their own sometimes precarious position within universities by identifying an area of knowledge uniquely their own and over which they will have some control. Labaree's thesis falls within what Hoyle

and John refer to as the 'ideological view' of the professions where professional status 'is seen as a function of the power which has accrued to a profession through its increasing control of the market' (1995: 7).

**'High status, high standards': a very brief history of subject knowledge**

Teachers' knowledge of the subjects they teach (as a dimension of their professional knowledge) has been a consistent feature in claims for the professional status of school teaching. Attempts in the 1980s from within the profession (particularly in the US) to identify and promote professional knowledge as a concept paid attention to teachers' subject knowledge. Elbaz (1983), for example, in her attempt to specify five categories of teachers' 'practical knowledge' included knowledge of the subject matter along with knowledge of the self, knowledge of the milieu of teaching, knowledge of the curriculum and knowledge of instruction. Leinhardt and Smith (1985) broke teachers' 'expert knowledge' into subject matter knowledge and knowledge of lesson structure.

But a view of teaching which emphasizes the importance of how much teachers know about the subjects they are teaching – and which makes the assumption that the more the teacher knows about this subject the better the attainment outcomes for their students – is not a new one. Periodic crises in schooling – whether referenced to what are perceived to be declining intellectual or moral standards or to a suspicion of a largely female workforce – have often seen the rise of high stakes tests for new teachers in their subjects or 'key skills' (see, for example, Hoffman 1981). Indeed, from the beginning of the system of formal training for elementary school teachers in England from the mid-nineteenth century to the inter-war period of the twentieth, training college curricula and, indeed, subject knowledge examinations were prescribed by central government (Gosden 1969: 195). With reference to what we now call English or literacy, these examinations included sections on:

...

*Reading*

To read (December 1855) with a distinct utterance, with due attention to the punctuation, and with a just expression, a passage from Mr Warren's 'Select Extracts from Blackstone's Commentaries.'

...

*English Grammar*

1. Its principles.
2. To parse (December 1855) a passage from the Chapter on 'The Doctrine of the Hereditary Right to the British Throne', and 'The History of the Succession of the British Monarch' in Warren's Extracts from Blackstone.
3. To paraphrase the same passage. (Report of the Committee of Council on Education for 1854–5: 17–21; cited in Gosden 1969: 196–7.)

In England, McNamara (1991) and Turner-Bissett (1999) trace a renewed interest by government in specifying what teachers should know about the subjects they teach to the 1983 White Paper, *Teaching Quality* (DES 1983) and the Circulars which established and reconstituted CATE (McNamara 1991: 114). Subsequently, Circular 14/93 (DfE 1993) laid down the number of hours prospective primary teachers should spend on English, mathematics and science and: ‘... set out strict new criteria which training courses must meet, focusing on the subject knowledge and teaching skills new teachers require to be effective in the classroom’ (*ibid.*: 3).

The introduction of the pupils’ National Curriculum as a result of the 1988 Education Reform Act also served to reinforce the position that initial teacher education was a preparation to teach the subject knowledge codified in the National Curriculum.<sup>1</sup>

#### *Subject knowledge and the Initial Teacher Training National Curricula*

Circular 4/98 (DfEE 1998a), the document that enforced the new ITTNCs, was significantly different, however.<sup>2</sup> Furlong *et al.* show how various ‘contexts of influence’ in the policy space shaped the formulation of this Circular, in particular the ‘neo-conservative’ voices who considered that:

The primary task for initial teacher education ... is therefore to develop professionals who are themselves experts in their own subject area; ... the chief weakness of current approaches to initial training [according to the ‘neo-conservative voices’] is that they are dominated by preparing students *how* to teach rather than *what* to teach. (2000: 11)

In responding to these voices, Circular 4/98 was a ‘concerted attempt to use initial teacher education to define the nature of teaching in those subjects’ (*ibid.*: 144) and to codify professional knowledge. Although there was some agreement about this codification among teacher educators of secondary mathematics and science, as Furlong *et al.* acknowledge, the ICT and, especially, the English curricula (Primary and Secondary) were seen as ‘much more explicitly political and therefore much more controversial’ (*ibid.*: 155).

The Secondary English ITTNC set out, for the first time, what government expected prospective English teachers *to be taught* and then what it expected them to *know, understand and be able to do* (in the formulation of the Circular) (DfES 1998a). In his introduction to the seven ITTNCs<sup>3</sup> contained within the Circular, there was a clear acknowledgement by Michael Bichard – then the Permanent Secretary at the Department for Education and Employment – that this specification of ‘core knowledge’ represented a major shift in the relationship between central government and the higher education sector that would lead to some aspects of existing courses being abandoned:

Effective implementation of the initial teacher training curricula may require considerable changes to courses for some providers. Providers implementing the primary training curricula in English and mathematics since September 1997 have found it easier to redesign their course around the required core, replacing some components, than trying to fit the new training curricula around existing provision. (DfEE 1998a: 3)

In the preamble to the Secondary English curriculum, this was reinforced with the warning that '[t]he ITT secondary English curriculum is intended to form the core of secondary English ITT courses, not to fit around existing provision' (*ibid.*: 89; emphasis in original).

The Secondary English ITTNC was 15 pages long and divided into three sections: A) *Pedagogical knowledge and understanding required by trainees to secure pupils' progress in English*; B) *Effective teaching and assessment methods*; C) *Trainees' knowledge and understanding of English*. After a preamble of three and a half pages, the first two sections (A and B) consisted of eight and a half pages and the third (C – the section focused on 'trainees' subject knowledge') ran to three. The longest individual section (B) specified in 20 numbered subsections (containing 81 bullet points) what were considered to be the most 'effective teaching and assessment methods'. These requirements were highly specified, even to the level of classroom activities; for example:

Section B ...

**15: Trainees must be taught how to teach grammar, including how to:**

[...]

e. set pupils activities which demonstrate the way that grammar works and the factors which influence grammatical choices, *e.g. changing a first person account into the third person changes the focus of attention and the level of formality.* (*ibid.*: 96; emphasis in original)

Section C began by outlining the requirements for entry to Secondary English courses in terms of appropriate qualifications for admission to first degree courses (such as the BA with QTS) and, for PGCE courses, the statement that the graduate's degree should provide 'the necessary foundation for work as a teacher of English' (*ibid.*: 99). It then went on to cite variation in PGCE students' undergraduate qualifications – in terms of 'coverage' of English – as a reason for requiring initial teacher education courses to 'audit' the subject knowledge of their 'trainees' to ensure that there were no 'gaps':

... where gaps in trainees' subject knowledge are identified, providers of ITT must make arrangements to ensure that trainees gain that knowledge during the course and that, *by the end of the course*, they are competent in using their subject knowledge in their teaching. (*ibid.*; emphasis in the original)

Following a separate section on the requirements to audit (26a–c), the document laid out what ‘all trainees must know and understand’ about English (*ibid.*: 99–101). In order of their appearance in the curriculum, the following list represents the areas identified as the subject knowledge necessary to ‘teach English effectively’ in the secondary school:

- *Technical terms*  
These were not specified and the explanation is vague, just that they are ‘*in addition* to those in the National Curriculum English order’ (*ibid.*: 99; my emphasis).
- *The nature and role of standard English*  
The claim here that standard English is the ‘general, public English used to communicate within the United Kingdom and throughout the English-speaking world’ (*ibid.*) would seem to go against the grain of generally accepted understandings of language variation and change and the development of world Englishes (see, for example, Crystal 2004).

There was then a long section which specified knowledge that was said to be necessary to give ‘trainees a more explicit insight into their own writing’ and to ‘analyse and evaluate others’ writing’ – including (almost as an afterthought) ‘pupils’ writing’ (*ibid.*: 100). It is claimed that what follows will give ‘trainees the terminology [once again] and concepts to understand processes such as language acquisition’ and to ‘study research evidence on language’ (*ibid.*). It begins with:

- *Lexis, including morphology and semantics, phonology and graphology*
- *The grammar of spoken and written English, to include word classes, word order and cohesion, sentence types and clause structure, coordination and subordination*
- *Punctuation*
- *Textual cohesion*
- *A broad understanding of language as a social, cultural and historical phenomenon*

and, finally:

- *Knowledge about texts and critical approaches to them.*

The final subsection offered general and non-statutory guidance about what new teachers should know in order to teach A-level syllabuses.

As a list of items intended to represent the subject knowledge of English that secondary teachers need in order to teach effectively, it would be an understatement, I think, to describe it as eclectic. The order in which these items are presented (are we to assume that they are in an order of priority?), the predominance of linguistic terminology and the lesser status accorded to texts, together represents a rather different body of knowledge to the one English teachers and

teacher educators had been used to working on and with. And that, of course, was the point.

Overall, as Furlong *et al.* suggest of the history of central government interventions in the field of English teaching, a key focus in the document was on the 'uses of standard English in contemporary schools' (Furlong *et al.* 2000: 155). To this we might add a heavy emphasis – first and foremost – on an unspecified 'terminology' and on aspects of linguistics such as morphology, syntax and cohesion, another bugbear of the neo-conservative voices with their enduring preoccupation with the explicit teaching of grammar. The view of teaching implicit throughout is inevitably mechanistic and teacher-centred: it would be difficult to envisage any document with this purpose being anything but. As such, it exemplifies the kind of objectivist epistemology – with all its limitations – I discussed in the previous chapter.

The reaction from the teacher education and research communities was, predictably, extremely critical. It is interesting to note, however, that the overwhelming majority of direct responses published in books or journals were to the proposed ITTNC for Primary English when it was first released in Circular 10/97 (DfEE 1997); only one article was identified that took as its main focus an analysis of the Secondary English ITTNC. This was by Peter Daw, the HMI at the time in charge of teacher education inspections in English at Ofsted (Daw 2000) and will be discussed later. One can only speculate that, as the Secondary ITTNCs came into force in September 1998, a large part of the teacher education community was focused on planning for and enduring the associated inspections by Ofsted, inspections on the basis of which funding decisions were to be made by the TTA. It may also be that the earlier publication of the primary curriculum had 'softened-up' secondary teacher educators and their surprise and anger wasn't as great. Nevertheless, many criticisms of the Primary English ITTNC could also apply to the Secondary English document.

It was anger that characterized Judith Graham's response to the Primary English ITTNC. She criticized the 'unnecessary' document for its marginalization of speaking and listening, the complete absence of drama and storytelling. Indeed, the 'effective teaching and assessment' section of the Secondary English document devotes just two out of twenty sections to speaking and listening and one to drama. Graham also felt the ITTNC bore little resemblance to the pupils' National Curriculum, a document that Graham claimed was used to structure teacher education courses anyway and ensured a close relationship with pupils' learning. This is certainly true of the relationship between the Secondary English ITTNC and the pupils' National Curriculum. Graham also, importantly, maintained that the ITTNCs were an attack on the academic freedom of teacher educators. But it is the language of Graham's response that is most memorable:

The most appropriate key words that spring to mind for this document are: redundant, repetitive, inapplicable, ill-written, narrow-minded, mean-spirited, atheoretical, partial, unbalanced, unworkable, research-innocent, unimaginative, restrictive and an unwarranted incursion on academic freedom. This is an unnecessary document. A core that we do not need. Like an apple core, it needs to be thrown away. (Graham 1997: 249)

Blackledge also criticized what he saw as the focus on 'individual skills' inherent in the Primary English document and the neglect of the 'cultural practices' paradigm of literacy (Blackledge 1998). The main focus of Blackledge's argument, however, is the lack of attention to issues of language diversity and preparation to teach pupils with English as an Additional Language (EAL). The ITTNC, for Blackledge, represented a missed opportunity to improve educational opportunities for English language learners. In his view, the curriculum 'pathologises developing bilingualism as a problem' (*ibid.*: 57) and 'ignores social justice' (*ibid.*: 63). His response was stark:

Those pupils whose home culture matches the environment of the school will continue to do well, while those pupils for whom there is discontinuity between home and school are more likely to fail. In short, the revised requirements for literacy teaching constitutes [*sic*] a process of cultural hegemony. (*ibid.*: 56)

Graham's article (and that of Marshall (1998)) is notable for the hostility of the criticism levelled at the ITTNCs. Interestingly, there appeared to be no direct criticism of the requirement to 'audit' subject knowledge at the beginning and end of the course. Indeed, with the notable exception of Blackledge, there is sometimes the feeling that it is the assault on teacher educators' autonomy (and *their* right to specify subject knowledge content) that is most at stake for the authors and none of the articles note that a critical interest in primary student teachers' subject knowledge was established within the teacher education and research community prior to the ITTNCs. This is an important point: there appears to have been no published criticism of the objectivism promoted by these documents.

Poulson, however, links contemporaneous educational research about primary teachers' subject knowledge to the formation of policy generally and the introduction of Circular 4/98 and the ITTNCs in particular:

A conclusion drawn in much of this work [from 1989 to 1997] was that apparently low levels of subject knowledge were problematic: teachers could not teach what they did not know; therefore subject knowledge in initial training, professional development and in-service courses should be enhanced and prioritised. (Poulson 2001: 44)<sup>4</sup>

Explicitly presented as a challenge to the 'ideological dominance' of the importance of subject knowledge in the primary teacher's repertoire, Poulson's article is

important as it draws attention to the rise of the concept from within the profession in England rather than simply presenting it as a concept imposed by governments in attempts to regulate and reform teaching and teacher education. It also identifies the emphasis on subject knowledge in initial teacher education and development with the move to establish a 'scientific basis for teaching' (*ibid.*: 49).

In the next section of this chapter, I focus on the research into the development of teachers' subject knowledge and attempt to trace both the evolution of the concept and its rise in importance from within the education research community itself.

### Traditions of researching teachers' subject knowledge: professionalizing typologies

In my earlier discussion of the identification of a specialist category of teacher knowledge in pursuit of claims for professional status (on behalf of the profession in general and teacher educators in particular), I referred to research from the 1980s that proposed the importance of teachers' subject knowledge in various conceptualizations of professional knowledge (for example, Elbaz 1983, Leinhardt and Smith 1985). The most influential research in this field (in the US and, later, in the UK) grew out of the research programme of Lee Shulman at Stanford University.

#### **The contribution of Lee Shulman: pedagogical content knowledge**

By the beginning of the 1980s, there was a growing awareness in the US that the relationship between teachers' subject knowledge and the effectiveness (or otherwise) of their teaching was under-researched (Shulman 1984, Feiman-Nemser and Parker 1990). Alongside this renewed research interest in the importance of the subject content in teaching, there was a growing political interest in improving the quality of teacher education and the development of teaching standards based upon an agreed 'knowledge base' from within the teacher education community itself (Holmes Group 1986, Carnegie Task Force 1986). The advocates of these reforms of the profession gave a great deal of importance to the codification of a 'knowledge base for teaching', of which appropriate subject knowledge would be a part. This was seen as an important move from within the profession as teachers' knowledge base had come to be regarded as weak and teaching as a sub-professional activity.

Against this background, the research programme of Lee Shulman and others at Stanford University sought to identify the knowledge base for teaching and to give credibility and status to teachers' professional knowledge. Through the 1980s, Shulman's research was associated with the development of national standards for teachers by the US National Board for Professional Teaching Standards. It should also be noted that this was a large research

programme, known as 'Knowledge Growth in Teaching', to which Shulman recruited a number of graduate students, several of whom have since published in this area (for example, Gudmundsdottir and Shulman 1987, Grossman 1990, Gudmundsdottir 1991, Wilson and Wineburg 1988, etc.).

The main part of the 'Knowledge Growth in Teaching' programme consisted of the development of a number of case studies of beginning secondary teachers taking a one-year postgraduate course of initial teacher education. The subjects taught by the group of beginning teachers in the study were English, mathematics, biology and social studies. Shulman's team first attempted to trace an 'intellectual biography' for each new teacher, identifying their sources of comprehension and understanding and significant networks of knowledge formation. In doing this, the team employed interviews that were structured by questions and the setting of 'clinical tasks'. The team felt that it was using a 'different' approach to measuring these teachers' subject knowledge in that they were not administering a standardized test. The researchers followed the new teachers through their teacher education course and into their first post.

Shulman's 1987 essay in the *Harvard Educational Review* is often seen as his seminal article on teachers' knowledge, especially the pedagogic dimensions of teachers' subject knowledge. Entitled 'Knowledge and teaching: foundations of the new reform', the link with teacher assessment, measures of effectiveness and the development of national teaching standards is explicit from the outset. Equally, however, Shulman makes clear that the relationship between his research and these initiatives from within the arena of policy is based upon a view of teaching and teacher development that regards the knowledge base as complex and multifaceted and suggests that new knowledge – in relation to the subject matter being taught – is generated during the course of the professional activity: 'Teaching ends with new comprehension by both the teacher and the student' (Shulman 1987: 7).

Here, he offers a full typology of the knowledge base for teaching. This, along with its explanation of 'pedagogical content knowledge' as a concept, provoked considerable interest:

*Categories of the Knowledge Base*

- content knowledge;
- general pedagogical knowledge, with special reference to those broad principles and strategies of classroom management and organization that appear to transcend subject matter;
- curriculum knowledge, with particular grasp of the materials and programs that serve as 'tools of the trade' for teachers;
- pedagogical content knowledge, that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding;

- knowledge of learners and their characteristics;
- knowledge of educational contexts, ranging from the workings of the group or classroom, the governance and financing of school districts, to the character of communities and cultures; and
- knowledge of educational ends, purposes, and values, and their philosophical and historical grounds. (*ibid.*: 8)

This categorization, especially the more detailed discussion of pedagogical content knowledge, aroused a great deal of interest and continues to do so (as I discuss later). It acknowledges the variety of sources of information, the knowledge of the subjects, learners, values and contexts, the modes of understanding and decision-making and routines of behaviour and action upon which a teacher might call. As a discrete categorization, it may appear to be definitive.

#### *Critical responses to Shulman's project*

There is another view that teachers' knowledge of the subject taught is relatively less important in teaching and learning than factors such as general pedagogical knowledge, teaching skills, contextual understanding and affirmation of values and ideals. In response to Shulman's 1987 article, Hugh Sockett allied himself to elements of this view but does so in the course of developing an argument about teachers' professionalism and educational reform. Shulman's strategy is flawed, according to Sockett, for three reasons:

... first, in the relative lack of attention to context, as opposed to content; second, in the inadequacy of its language of description of the moral framework of teaching; and third, in the lack of sophistication in its account of the relation between reason and action in teaching. Each of these weaknesses, it will be argued, arises from the fact that Shulman's analysis appears assessment-driven. (Sockett 1987: 208)

Acknowledging that, Shulman's work made a useful contribution to understandings of subject knowledge in teaching, McEwan and Bull nevertheless assert that Shulman's distinction between content (subject) knowledge and pedagogical content knowledge was 'unnecessary' and that it led to research questions about the transformation from one kind of knowledge to another that were 'misconceived' (1991: 318). Instead, and drawing on the work of John Dewey, they suggest that Shulman's work was premised on an objectivist epistemology: they refer to his use of the phrase 'subject matter *per se*' and its presentation as *a priori* and essential; they also draw attention to his concern with 'the teachability of representations' (*ibid.*: 319) and the transmission model of teaching implicit in his focus on the use of analogies and explanations.<sup>5</sup> Moreover, they argue that there is no epistemological difference between content (subject) knowledge and pedagogical content knowledge. Both

categories of knowledge – as knowledge – are developed in relation to ‘webs of belief’:

Scholars must be concerned with the comprehensibility and teachability of their assertions, that is, with whether those ‘representations’ can find a meaningful place in others’ webs of belief. In other words, the justification of scholarly knowledge is inherently a pedagogical task, and successful scholars must engage in the sort of pedagogical thinking supported by Shulman to be a hallmark of pedagogic reasoning. (*ibid.*: 324)

McEwan and Bull’s position here is clearly influenced by the kind of contextualist epistemology discussed in the previous chapter and, in proposing that ‘ideas are themselves intrinsically pedagogic’ (*ibid.*: 332), they are also arguing that they are developed in relation to a community of practice. McEwan and Bull’s article is important in that it shows how the early Shulman typology can be interpreted as reductive.

But it is important to recognize that from the time of Shulman’s work onwards, successive US governments have argued for ‘commonsense’ solutions to what has been perceived as the poor quality of the nation’s teaching force. Teacher educators are sometimes held to be part of this problem and policymakers have argued for the ‘dismantling of teacher education systems and the redefinition of teacher qualifications to include little preparation for teaching’ (Darling-Hammond and Young 2002). Verbal ability and subject knowledge have been proposed as ‘the most important components of teacher effectiveness’ (*ibid.*: 13) and a good deal of research effort has gone into attempting to prove or disprove this assertion (see Wilson *et al.* 2002 for a systematic review of the research). Shulman’s research programme (and the early research of many of his doctoral students) attempted both to provide evidence of the effectiveness of university-based ITE and to make the standards of the profession explicit and the profession more accountable.

In England, the moves from within the initial teacher education community were somewhat different. Alongside the interest in researching beginning teachers’ subject knowledge (referred to by Poulson (2001)) there was also a growing interest in broader conceptions of teachers’ professional knowledge and a focus on practice. Nevertheless, as the 1990s drew to a close, research on teachers’ subject knowledge and Shulman’s concept of pedagogical content knowledge grew in influence in England both in teacher education research and in the arena of policy. Indeed, at a TTA meeting I attended in April 2004 for those involved in the development of induction materials for newly appointed teacher education faculty, the agenda included a 30-minute lecture on the legacy of Lee Shulman from the 1980s and the enduring importance of the concept of pedagogical content knowledge. Again, the implication was that this was the special category of knowledge belonging to teacher educators (and teacher training agencies) and

those newcomers who were making the transition from school- to university-based teacher education (teacher to lecturer) would need to name it and call it their own.

The work of Shulman and, indeed, the early research of Pamela Grossman (Grossman 1989, 1990; Grossman and Stodolsky 1995) are important for my own purposes here because of their emphasis on the school subject and the acknowledgement that teachers' values, beliefs and 'conceptions of purposes' for teaching a subject have an important role to play in the development of knowledge.

### **Research on teachers' subject knowledge after Shulman**

#### *Variations of Shulman's typology of teacher knowledge*

There have been numerous attempts to produce a typology or model of teachers' professional knowledge (e.g. Elbaz 1983, Leinhardt and Smith 1985, Calderhead 1987, Hoyle and John 1995), some of which are discussed in detail in this chapter. The influence of Shulman's typology (1987) is pervasive, however, and more recent efforts often present their work either as a revision of Shulman (e.g. Banks *et al.* 1999) or as an elaboration that accepts the premises on which his typology was developed. Turner-Bissett's work (1999) is a significant example of the latter.

Turner-Bissett's typology grew out of her research with beginning teachers of History in primary schools and was developed in the context of the QTS Standards framework introduced by Circulars 10/97 (DfEE 1997) and 4/98 (DfEE 1998a). For Turner-Bissett, 'the model of knowledge essential for teaching [offered in these Circulars]. . . is impoverished' (Turner-Bissett 1999: 39). Instead, she develops a model of teachers' professional knowledge – presented as pedagogical content knowledge – that is 'more comprehensive' than that of Shulman and others (*ibid.*: 53). It is interesting to note that in Turner-Bissett's work, the conceptualization is of the elements that make up pedagogical content knowledge *as* teachers' professional knowledge rather than of a 'knowledge base for teaching' (Shulman 1987), of which pedagogical content knowledge is just one element.

Although Turner-Bissett makes claims for the comprehensiveness of her model, many of the elements in her representation of teacher knowledge (as pedagogical content knowledge) were present in Shulman's typology, including dimensions of subject knowledge, curriculum knowledge, general pedagogical content knowledge, knowledge of contexts, knowledge of learners and knowledge of ends and purposes, including values. The most obvious addition is knowledge of self, an awareness of one's own developing subjectivity in relation to other aspects of development. For Turner-Bissett, this kind of knowledge is an essential part of reflective practice. However, knowledge of self was a key feature of Elbaz's five categories of professional knowledge (Elbaz 1983) and is therefore not unique

to Turner-Bissett's model. Turner-Bissett also elaborates on Shulman's 'knowledge of learners and their characteristics' (Shulman 1987) by splitting this into 'cognitive' (meaning teachers' mental models of how children – specific children – learn) and 'empirical' (meaning 'what children of a particular age are like; how they behave in classrooms and school' [Turner-Bissett 1999: 45]).

Turner-Bissett's model of the knowledge base for teaching seeks to be both more comprehensive than Shulman and less impoverished than that of the QTS Standards framework. She presents the model as an interacting set of categories of knowledge and suggests that the precise terms of the interaction will vary. Nevertheless, the categories are static and, as she herself acknowledges, somewhat 'stable' (*ibid.*: 53). In attempting to develop a more complex typology, she may have succeeded in making a more fragmented one.

Daw (2000), on the other hand, accepts the proposition that the QTS Standards framework, the ITTNCs and the requirement to audit subject knowledge will all inevitably lead to more effective teachers. He focuses on English teachers' subject knowledge and, as I have already mentioned, as a senior HMI at Ofsted in charge of inspections of initial teacher education in English, he draws on his experience of inspection in his article. There are no references to the work of Shulman in Daw's article (nor to other researchers) but the model of subject knowledge he developed uses many of the organising concepts present in earlier work: for example, the relationship between conceptions of the subject and 'past educational experience', the distinction between 'subject content' and 'conceptual frameworks', the development of curriculum knowledge and the interaction between these categories of knowledge and pedagogy.

Daw's article is interesting in that he implicitly criticises teacher education 'providers' (universities and schools) for exposing 'gaps' in student teachers' subject knowledge through the 'repeated application' of long, self-assessment checklists and he asserts that some of the criticism levelled against the ITTNC subject knowledge requirements by ITE tutors was due to their 'nagging doubts as to whether the process really captures the *essential subject knowledge* needed by teachers' (Daw 2000: 5; my emphasis). Daw noted that 'knowing what' and 'knowing how' were separated in the ITTNCs (*ibid.*: 4) and suggested that they should be integrated in the specifications for planning and teaching within an ideal of a 'specific English pedagogy' (*ibid.*: 11). Despite his protestations that subject knowledge shouldn't be isolated as a category, Daw nonetheless presents a codification of what all prospective English teachers should know about an essentialized and stable concept of 'progression in English'.<sup>6</sup>

*Researching the importance of subject knowledge and pedagogical content knowledge in initial teacher education: some contrasting examples*

Following the publication of the work of Shulman and his associates – and, in England, the introduction of the ITTNCs – there has been a growing interest in

investigating the effect of teacher education programmes in developing both teachers' subject knowledge and their pedagogical content knowledge. Betts and Frost, as one example, writing from a Canadian perspective, use rather reductive interpretations of Shulman's categories to propose that 'a greater emphasis on breadth as opposed to depth of subject knowledge is the best option for preparing teachers to effectively implement curricular requirements at all grades' (2000: 39).

In contrast, Burgess *et al.* (2000) undertook their work within the teacher education setting in England and explored how their beginning teachers of English developed aspects of subject knowledge against the background of the ITTNC referred to earlier. Their particular focus was the 'transformation' of their student teachers' subject knowledge of grammar into pedagogical content knowledge, grammar being identified as the area in which most of those undertaking a postgraduate teacher education course need some support and development. This study is interesting for two reasons: first, Burgess *et al.* identify the student teachers' own understandings of language learning as the key to the development of pedagogical content knowledge (2000: 15); second, that the opportunities provided for student teachers to develop this aspect of their professional knowledge in schools varied enormously and highlighted a disjuncture in some schools between the existing, professionally validated formations of the subject and new (and for some schools, contentious) additional knowledge associated with the government's reforms of teacher education and teacher educators (*ibid.*: 16). For the researchers, this provoked questions about professional reconstruction. Their work implicitly foregrounds the importance of setting in the development of teacher knowledge.

Thornton (2003), however, from a US perspective, accepts the proposition that 'greater' subject knowledge available for transformation into pedagogical content knowledge will lead to more effective teaching and learning. The question for him is how to make time available for subject knowledge development in short, intensive, teacher education courses. This point is also addressed by Sanders and Morris (2000) in their research on primary student teachers in Wales. Sanders and Morris tested their own students on mathematical subject knowledge and found frequent 'gaps' in this knowledge. Interestingly, they found that most of their students found ways of explaining away their poor results – such as forgetfulness or not remembering the topic being covered when they were at school – and they described the way in which the students approached the requirement to 'fill' these gaps by dividing them into three groups: 'ostriches, nettle graspers or mañanas' (Sanders and Morris 2000: 404). What is remarkable about Sanders and Morris's article is not just their acceptance of the test as a valid proxy for the kind of knowledge effective mathematics teachers need but their suggestion that student teachers should be 'confronted' to address the gaps identified by the tests and that QTS could be withheld if they don't – even if they are in every other way identified as effective classroom teachers (*ibid.*: 407).

The use of standardized tests or questionnaires to assess student teachers' subject knowledge is also a common feature of research in this area. Halim and Meerah, for example, working with a small group of student teachers of science in Malaysia, devised a test that they felt would assess these teachers' pedagogical content knowledge of physics. The questionnaire posed the kind of questions about physics that lower secondary pupils were said to ask and the student teachers were meant to respond to the questions as if they were addressing these hypothetical pupils. The researchers believed this was a valid test of pedagogical content knowledge and was in preference to a test simply of subject knowledge. Their finding that student teachers pedagogical content knowledge of physics was limited is perhaps unsurprising (given that they were *student* teachers) but their assertion that it was the student teachers' poor subject knowledge of physics that was the cause (Halim and Meerah 2002: 223) cannot be supported from their data.

Halim and Meerah's work can be located within a research tradition by science teacher educators that investigates the process by which student teachers develop the 'broad and balanced' pedagogical content knowledge for physics, chemistry and biology teaching. Some of this work has taken place in England (and some in the context of Circular 4/98 and the ITTNC for Secondary Science) and has used pre- and post-test measures to assess the impact of PGCE courses on the development of student science teachers' subject knowledge (for example, Lenton and Turner 1999). This research tradition and the other research (with the notable exception of Burgess *et al.* (2000)) I have referred to in this section all assume that effective teachers must have good pedagogical content knowledge and this special category of teacher knowledge is a transformation of subject knowledge that takes place entirely *within the head* of the individual teacher. In order to have good pedagogical content knowledge, it is therefore necessary to have good subject knowledge. As I have already demonstrated, this has been the assumption behind government policy for initial teacher education in England for quite some time. So, given this assumption and the 'circularity' of English education policy (Wyse and Jones 2002), perhaps it was no surprise that the TTA commissioned research into the subject knowledge that effective teachers of literacy needed at the time of the development of the ITTNCs and the *National Literacy Strategy Framework for Teaching* (DfEE 1998b).

#### *The Effective Teachers of Literacy project*

Between December 1995 and February 1997, researchers at Exeter University and the College of St Mark and St John worked with a group of 228 experienced and 'effective' teachers in 13 local education authorities (LEAs) and in a number of grant-maintained and independent schools (Medwell *et al.* 1998). Their study had been commissioned by the Teacher Training Agency (TTA) 'to help the Teacher

Training Agency and teachers in England to understand more clearly how effective teachers help children to become literate' (Medwell *et al.* 1998: 3).

The findings about the nature of the teachers' subject knowledge were particularly interesting, however. Neither the effective teachers nor the validation sample did very well at all on aspects of a literacy quiz, particularly the part that tested their ability to identify language structures and to use linguistic terminology. Nevertheless, the effective teachers demonstrated a good understanding of some aspects of literacy content *in the classroom* about which they did poorly in the quiz (for example, phonemes) (*ibid.*: 15). One element of the quiz on which the effective teachers performed significantly better, however, was their knowledge of authors writing specifically for children (*ibid.*: 18). But it was the effective teachers' relatively poor scores on the linguistic aspects of the literacy quiz compared with their skilful demonstration of such linguistic knowledge in their teaching that led the researchers to speculate that the way in which the effective teachers knew this linguistic material was different:

It did not seem to be the case that they knew a body of knowledge (content) and then selected appropriate ways to represent it to their children (pedagogy). Rather, they appeared to know the material in the way they taught it to the children ... The knowledge-base of these teachers thus *was* their pedagogical content knowledge. This is a rather different concept of pedagogical content knowledge from that of Shulman ... for whom this refers to knowledge of ways of transforming content in order to represent it for others. (*ibid.*: 24; emphasis in the original).

Medwell *et al.*'s reconceptualization of pedagogical content knowledge is important as it offers a view of subject knowledge as 'totally embedded in their pedagogical practices' (*ibid.*), as a form of knowledge developed in practice and achieving validation in a community of practice, like any other. It is a less stable and more situated concept than the usual interpretations of Shulman's original and presents pedagogical content knowledge as knowledge in its own right rather than as a by-product of the transformation of an objectivist concept of disciplinary knowledge.

Another key finding from the work of Medwell *et al.* was that the effective teachers of literacy were able to articulate 'strong and coherent personal philosophies about the teaching of literacy' (*ibid.*: 8) that focused on the construction of meaning in social contexts (so, for example, prioritising 'shared' reading). The effective teachers acknowledged the importance of the 'building blocks' of literacy but did so in a way that emphasised the end goal of 'purpose, communication and composition' (*ibid.*: 25). This was less true in the validation sample where teachers tended to emphasise technical knowledge and terminology; less effective teachers tended to foreground definitions of language structures whereas more effective teachers began with demonstrations of the language structures in use (*ibid.*: 77).

Medwell *et al.* acknowledge that any study of primary teachers' subject knowledge will inevitably differ in design from that of secondary teachers where, it could be said, the secondary subject (in this case, English) is more clearly bounded than the 'subject' of literacy. Nevertheless, the definition of literacy adopted by the research team – with its emphasis on books, specific genres such as fiction and poetry, the structure of narrative, literary concepts such as setting, character and plot, and even 'enjoyment' (*ibid.*: 3) – suggest a definition of literacy very close to more traditional understandings of the subject English. With this in mind, another relevant outcome from this research is that 'the content knowledge held by effective teachers of literacy cannot be readily separated from understanding of its use or from their beliefs about how it should be taught' (*ibid.*: 45).

The outcomes from Medwell *et al.*'s study were particularly relevant to my own research. In particular, identifying the importance of teachers' thinking about the subject knowledge and how this is informed by questions of value and belief is directly relevant.

#### **Research on teachers' values and beliefs and their subject knowledge**

In her case studies of four experienced and 'expert' high school history teachers, Gudmundsdottir found that 'the teachers' value orientations to their subject matter influenced their choice of content, their use of the textbook, pedagogical strategies, and their perceptions of students' instructional needs' (1991: 44). Gudmundsdottir distinguished between values and ideologies stating that values 'always imply a choice, a choice of principles ... they have penetrated the "core of one's definition of oneself"' (*ibid.*: 45; quoting McKinney 1980). In this analysis, school subjects – as taught by teachers in classrooms to young people – become texts infused with values; pupils are 'not just learning facts; they are acquiring a world view imbued with values' (*ibid.*: 47). In developing this analysis, Gudmundsdottir draws on the work of Schwab (1964) (whose substantive and syntactic structures are said to be 'value-laden organisations of knowledge' (*ibid.*: 46)) and that of her doctoral supervisor, Shulman. Gudmundsdottir suggests that the transformative process outlined by Shulman from content knowledge to pedagogical content knowledge is a 'reorganization' that 'revolves around teachers' personal values and those embedded in their specialisation' (*ibid.*: 47). Although there is an unsatisfactory exclusion of learners and setting in this conceptualization, Gudmundsdottir does suggest one way of accounting for the growth in expertise of the developing teacher:

I want to suggest that one of the differences between novices and experts is that the novices' *values* do not seem to have achieved the influence in the reorganisation of their pedagogical content knowledge that characterises excellent, experienced teachers... (*ibid.*: 50; my emphasis)

Yaakobi and Sharan explored the value differences between teachers of different, secondary school subjects in a study of 142 teachers in Israel. Using Bernstein's (1972) distinction between those subjects organized by a 'collection code' and those by an 'integrative code',<sup>7</sup> the researchers developed a questionnaire that would elicit the teachers' values related to their own subject area. They found that socialization into different academic subject areas appeared to 'exert differential effects on teachers' ideas about academic knowledge and about classroom instruction' (Yaakobi and Sharan 1985: 196). This view that teachers are socialized into sets of beliefs about the subject they teach and the nature of knowledge itself will be explored in the final section of this chapter, with reference to the subject English.

Wilson and Wineburg, in case studies of four beginning teachers of history, also noted that teachers of the *same* subject can hold very different conceptions of that subject (in this case, what they thought history was) and that these conceptions – developed out of their prior 'disciplinary backgrounds' – were a 'strong – and often decisive – influence on their instructional decision-making' (Wilson and Wineburg 1988: 526). This study points to the importance of beginning teachers' preconceptions and proposes that an important element of initial teacher education should be to encourage students to examine their 'previously held beliefs' (*ibid.*: 537). This study is also interesting for the emphasis it places on tracing the beginning teacher's intellectual biography as a way of uncovering the values underpinning their knowledge of the subject.

Hillocks' (1999) study of 19 teachers of writing in community colleges and high-school – published as *Ways of Thinking, Ways of Teaching* – gives particular emphasis to two dimensions of teachers' thinking 'their epistemological beliefs about what constitutes knowledge in their field, and their deeply held beliefs about the likelihood that their students will be successful in learning to understand what they teach' (Hillocks 1999: viii).

In exploring the relationship between what he termed 'epistemological stance' and attitude towards learners, Hillocks sought to go beyond the 'simple congeniality of pedagogical content knowledge' in accounting for the wide range of differences among 'teachers of the same subject', 'I suspect that great differences in teaching may amount to differences in ways of thinking about the nature of knowledge, in epistemology' (*ibid.*: 6).

Hillocks distinguished between two epistemologies – objectivist and constructivist – and two sets of beliefs about the likelihood of learners being successful – optimistic and pessimistic. In his introduction to Hillocks' work, Shulman outlined the four quadrants developed in this analysis:

Thus we can have *objectivist pessimists* (the knowledge is out there waiting to be learned, but the students are just not smart enough to get it), *constructivist optimists* (the knowledge is theirs to construct and, by golly, they are going to do it), *objectivist*

*optimists*, and *constructivist pessimists* (although there were no examples of this last category in Hillocks' study). (Hillocks 1999: viii–ix; emphasis in the original)

Although not a study into effective teaching practices *per se*, Hillocks' research nevertheless found important differences between the more effective (in his terms) teachers of writing in the sample (a minority, it has to be said, who were the *constructivist optimists*) and the less effective (by implication, the majority category of *objectivist pessimists*). His findings accord with those of Medwell *et al.* in suggesting that the more effective teachers of literacy (Hillocks' sample were specifically teachers of writing rather than English) had coherent systems of belief about literacy that focused on 'purpose, communication and composition' (Medwell *et al.* 1998: 25) rather than technical knowledge and terminology for its own sake.

Hillocks' research also offered a conceptualization of pedagogical content knowledge similar to that of Cochran *et al.* (1993):

... pedagogical content knowledge appears not to be some body of pre-existing knowledge that teachers dip into, but *knowledge constructed by the teacher in light of the teachers' epistemological stance and conceptions of knowledge to be taught* (in this case rhetoric or writing), learning theory, and students. (Hillocks 1999: 120–1; my emphasis)

For Hillocks, the most important of these was epistemological stance. Although the binary categorization of objectivism and constructivism hardly seems an adequate account of either the complexity of cognition or pedagogy, the concept of epistemological stance was useful in my analysis of teachers' thinking in that *how* the beginning teachers conceptualized knowledge itself was an important factor in the analysis.

This concept and the importance of teachers' attitudes towards learners had been anticipated by Douglas Barnes more than 20 years earlier. In *From Communication to Curriculum* (1976), Barnes distinguished between two attitudes of teachers towards their pupils' written work: a *transmission* view of teaching and learning and an *interpretation* view (1976: 139–57):

The Transmission teacher sees it as his task to transmit knowledge and to test whether the pupils have received it. To put it crudely, he [*sic* to end of quotation] sees language as a tube down which knowledge can be sent; if a pupil catches the knowledge he can send it back up the tube. Such a teacher does not see speech or writing as changing the way in which the knowledge is held. For the Interpretation teacher, however, the pupil's ability to reinterpret knowledge for himself is crucial to learning, and he sees this as depending on a productive dialogue between the pupil and himself. (*ibid.*: 142)

Barnes' distinction developed out of his previous work on language and learning, particularly the role of talk and writing in different school subjects. Hillocks' focus, however, is on explaining the differences amongst teachers of the same subject as a matter of epistemology. More recently, Banks *et al.* (1999, Leach and Moon 2000) have developed a model of teachers' professional knowledge which places teachers' values and beliefs at the centre.

*The work of Banks, Leach and Moon: towards a situated model of professional knowledge*

Against the background of the political context of initial teacher education in England in the late 1990s, Banks *et al.* explain their interest in modelling teachers' professional knowledge as an attempt to explore the links 'between a teachers' knowledge and the associated pedagogic strategies and practices [that] ensure successful learning' (1999: 89). They describe Shulman's work as 'informed by an essentially objectivist epistemology' and that it:

... leans on a theory of cognition that views knowledge as a contained, fixed and external body of information ... [and] a teacher-centred pedagogy which focuses primarily on the skills and knowledge that the teacher possesses, rather than the process of learning. (*ibid.*: 91)

Instead, they propose a 'more dynamic' model in which the 'personal constructs' of the teacher (including beliefs about the purposes of the subject, about learning, about what constitutes good teaching and aspects of the teacher's biography) 'underpins a teachers' professional knowledge' (*ibid.*: 95). Indeed, in their model, the personal construct of the teacher is the organizational core. However, whilst criticizing Shulman's work, they nevertheless build their model out of his categories of content knowledge, pedagogical content knowledge, curricular knowledge and general pedagogical knowledge. They acknowledge that their *school knowledge* 'subsumes' the curricular knowledge of Shulman but is 'an analytic category in its own right' (*ibid.*: 94). They further differentiate the category of school knowledge by using the work of Verret (1975) and Chevillard (1991) to describe a process – '*la transposition didactique*' (Chevillard) – by which subject knowledge is transposed to school knowledge. They argue (after Verret) that school knowledge is deserving of separate status as 'knowledge in general cannot be sequenced in the same way as school knowledge' and that school knowledge is 'inevitably codified, partial, formalised and ritualised' (*ibid.*: 93).

Although, in their 1999 article, Banks *et al.* say they dislike Shulman's metaphor of *transformation* (of content knowledge into pedagogical content knowledge) (*ibid.*: 91), their preferred metaphor of *transposition* doesn't seem to be significantly different: transposing still implies changing something into a different modality. Whilst acknowledging that Chevillard defined this as a process of

'restructuring', there is no acknowledgement of the similarities in the processes nor that Shulman himself proposed pedagogical content knowledge and curricular knowledge as separate analytic categories. Indeed, in their 2000 article about teachers' professional knowledge, Leach and Moon use the very word – transformation – that in 1999 they claimed was less appropriate than transposition. School knowledge, in the Banks *et al.* model, may perhaps be better described as an amalgam of Shulman's categories rather than a qualitatively different conceptualisation. One effect of this amalgamation is to make the distinction between subject knowledge and school knowledge unclear: why should the historical origins of subjects, their vocabularies and discourses be seen as a separate category, for example? This is particularly apparent in Banks *et al.*'s (1999) model of English teachers' professional knowledge.

In the 1999 model, whereas some aspects of school knowledge (English) might appear equally at home in subject knowledge (for example: 'knowledge about language'), others might come under Shulman's heading of curricular knowledge (for example: the 'status/nature of the English "coursework folder"') and others still under their own heading of pedagogic knowledge (for example: 'the reading process'). Another important question to ask of Banks *et al.*'s model is where are the pupils (the learners clearly present in Shulman's typology [1987])? And also, where is the setting in which the teacher's knowledge develops? They do acknowledge that the development of professional knowledge is 'brought into existence by the learning context itself' (*ibid.*: 96) and, later, that subject constructs might be collective as well as personal (*ibid.*: 105) – acknowledging the influence of the school subject department and the mentor – but these vitally important aspects of the development of teachers' knowledge are not elaborated and are omitted from the model itself.

Nevertheless, Banks, Leach and Moon – like Gudmundsdottir (1991), Grossman and Stodolsky (1995) and Hillocks (1999) – make an important contribution to our understanding of teachers' subject knowledge by emphasising the importance of the 'personal subject construct', a complex web of beliefs and values about the purposes of the subject, the nature of its knowledge and how it is learned. Additionally, Banks *et al.* also begin to foreground the importance of setting and community of practice in the development of teacher knowledge through their appropriation of the work of Lave (1988) and the concepts of arena and setting (see especially Leach and Moon [2000], discussed in the previous chapter). Their work is therefore useful in beginning to theorise the interaction between the 'concepts of arenas and settings and what is now understood about teacher knowledge' (Leach and Moon 2000: 396). In this respect, their work can be understood as an important contribution towards a more situated model of professional knowledge.

In the final section of this chapter, I explore the ways in which the formation and institutionalisation of English as a subject is related to questions of its subject

knowledge content and how this, in turn, comes back to questions about the purposes of the subject and the goals of teaching as professional practice.

### Professionalizing English

What does his [*sic* – to end of quotation] knowledge mean to a teacher? It is his stock in trade, part of his claim to expertise. A secondary teacher during his specialist course at college or university will have learnt to identify himself more or less strongly both with the knowledge and skills of his subject and with the implicit styles of speech and ways of going about things which every subject depends on. For many secondary school teachers their self respect and hopes for promotion – indeed parts of their very identity – become bound up with their subject. (Barnes 1976: 152–3)

In his discussion of ‘knowledge and the teacher’, Barnes draws our attention to the importance of secondary teachers’ relationships with their subject and their work towards – and *on* – a particular form of cultural identity. He emphasises the link between subject identity and personal or professional identity and – in his references to ‘implicit styles of speech and ways of going about things’ – notes that subjects offer particular genres and discourses that teachers and learners inhabit and shape. In the research on teachers’ subject knowledge reviewed thus far, teachers’ conceptions of the purposes or aims of their subject have been identified as an important aspect. Banks *et al.* (1999) referred to this as the ‘personal subject construct’; Grossman (1990) as the ‘conceptions of purposes for teaching subject matter’ that provide an ‘organising framework’ for the development of pedagogical content knowledge; Grossman and Stodolsky (1995) suggest that the subject is part of the context of, and resources for, learning to teach, the subject being a ‘conceptual context’. In this section, I review some of the research into the formation and constitution of school subjects, particularly in relation to the subject English. This area has seen a great deal of research and scholarship over the last 30 to 40 years, especially in the sociology of education, so I must organize my brief discussion here around the literature on school subjects and the constitution of school English as it relates to the activity of learning to teach.

#### **Compartmentalizing knowledge: the formation of school subjects**

In her eloquently critical discussion of US teacher education, *Practice Makes Practice* (1991, 2004), Britzman analyses the ways in which student teachers are confronted by the ‘fragmentation of experience’ in their initial courses. One important aspect of this fragmentation is the ‘compartmentalisation of knowledge’, a discourse that constrains and limits student teachers’ understandings of learning and knowledge:

'School subjects' such as English, history, science, or math, organise more than the division of the school day, the movement of students, and the labor of teachers. They also authorise the classification, arrangement, and selection of forms of knowledge. That is, school subjects represent knowledge that has been compartmentalised. This form of knowledge serves as the basis for curricular organisation. (Britzman 1991: 35)

In predetermining the 'limits of relevancy' (*ibid.*), Britzman sees this inevitable process as one which 'abstracts knowledge from its socio-cultural roots ... and decontextualis[es] knowledge and skills from their practical existence' (*ibid.*). This is, if you like, an effect of, in terms of schooling, curricularization and, in terms of teachers, professionalization. For intending teachers, its practical consequence is 'accepting the rules and rites of specialisation, claiming and guarding a piece of academic territory, identifying with an academic department, and taking up a particular discourse and its accompanying practice' (*ibid.*: 37).

The process by which teachers – and especially new teachers – are socialized into subjects in secondary schools has been of interest to sociologists of education for some time (e.g. Lacey 1977, Ball 1981). A related effort, represented, perhaps, by Young (1971), has been concerned with an analysis of school knowledge as 'inevitably codified, partial, formalised and ritualised' (Banks *et al.* 1999: 93). An early and influential example of work that combines both perspectives is that of Esland (1971, Esland and Dale 1973). Esland's view of teachers of secondary subjects forming different 'epistemic communities' would appear to offer a socio-cultural and sociohistoric account of the development of knowledge. In 1971, for example, he proposed that:

The knowledge which a teacher thinks 'fills up' his [*sic*] subject is held in common with members of a supporting community who collectively approach its paradigms and utility criteria, as they are legitimated in training courses and 'official statements'. (Esland 1971: 79)

In 1973, Esland and Dale re-emphasized the importance of the 'epistemic community' in the development and organisation of knowledge:

Teachers, as spokesmen for subject communities are involved in an elaborate organisation of knowledge. The community has a history, and, through it, a body of respected knowledge. It has rules for recognising 'unwelcome' or 'spurious' matter, and ways of avoiding cognitive contamination. It will have a philosophy and a set of authorities, all of which give strong legitimation to the activities which are acceptable to the community. (Esland and Dale 1973: 70–1; quoted in Goodson *et al.* 1998: 6–7)

For Esland, it was in the course of activity and in the evaluations of a community that knowledge is developed and, of course, organized; the 'body of respected

knowledge' is passed on historically through social practice. The problem for teachers and teaching, identified by Esland, was that teachers – as 'communities' – tend to be widely dispersed and so proportionately greater power to evaluate claims to knowledge fell into the hands of school inspectors, journal editors and professional associations. In its emphasis on journals and professional associations, Esland's work perhaps shows its age.

Research interest into secondary schools subjects as 'realms of knowledge' (Siskin 1994) has continued (see, for example, Goodson with Anstead and Mangan 1998). An important contribution to this work was made early on by Stephen Ball and Colin Lacey (1980) with their concepts of *subject paradigm* and *subject pedagogy*. Ball and Lacey took issue with Esland's concept of 'epistemic community' as they felt it didn't describe the 'extent of variation and subdivision within particular universes of knowledge' (Ball and Lacey 1980: 149). In their analysis, they give an important emphasis to the role of the subject department as 'a crucial mediating context in the translation of curriculum knowledge from the level of "subject communities" into the pupils' experience of "subjects" in the process of the classroom interaction' (*ibid.*: 150).

The secondary subject department is presented as 'an arena of competing paradigms and definitions' that 'confer[s] a sense of identity' upon its members (*ibid.*: 151). Ball and Lacey traced the extent to which the 'agreement and allegiance' (*ibid.*) could be discerned within four secondary English departments. On the basis of this investigation, they developed two concepts that would be useful in their analysis: *subject paradigm*, referring to 'view of English as a subject held by English teachers in terms of the appropriate content' (*ibid.*: 157); and *subject pedagogy*, referring to 'the system of ideas and procedures for the organisation of learning ... that is, appropriate method' (*ibid.*: 158).

### Subject paradigms and the constitution of English

*'English is a quicksilver among metals – mobile, living and elusive.'*

(Dixon 1975: 1)

*English is '... "a sack of snakes".'* (Wilson 1964: 86)

In England, the majority of student teachers of secondary English follow one year postgraduate PGCE courses and so bring with them understandings of the subject developed in the setting of their undergraduate (and sometimes postgraduate) English studies. As I mentioned in the first section of this chapter, the perceived variation in student teachers' subject backgrounds was one of the reasons given in Circular 4/98 (DfEE 1998a) for the introduction of the secondary ITTNC and the requirement to 'audit' subject knowledge. The variation amongst English degrees in particular has also been noted by teacher

educators themselves over at least the last 15 years (for example, Hardman and Williamson 1993, Davies 1996, Marshall *et al.* 2001).<sup>8</sup>

This sense of variation and difference – if not the slippery or snake-like qualities attributed to English by Dixon (1967) and Wilson (1964) – is an effect of the subject's history and is not a new phenomenon. Histories of the subject English abound but in each of them it can be seen that debates about the constitution of the subject (in terms of the selection and organization of knowledge – its content) are inextricably linked with conceptions of the purposes for English. For example, Viswanathan (1989) traced the institutionalization of the study of English literature in India (in schools and universities) by the East India Company (under contract to the British Government) from 1813 onwards. The purpose of teaching English literature was, literally, to colonize and therefore 'civilize'. Eagleton (1983) described the 'rise of English' in the Mechanics' Institutes and extension colleges as an alternative force for social cohesion – 'beamed' to the working class – to an established religion that was seen to be in decline in the late-nineteenth century. Mathiesen presents the development of English in schools and universities in England as the triumph of a liberal and progressive move on the (elitist) study of classics and shows how it developed from 'the rudimentary skills of literacy into the humane centre of the curriculum' with 'high hopes invested in its activities and its teachers' (Mathiesen 1975: 223).

Mathiesen's account was controversial when it was first published as she argued that in order to reclaim its progressive purpose and radical edge, it needed to place greater store by direct instruction in literacy skills and connecting pupils with the cultural heritage. She described a 'contemporary shift of emphasis from knowledge and formality to feeling and freedom' (*ibid.*: 214). But, as Eagleton and Viswanathan have shown, disputes about the selection and status of the knowledge that constitutes English – indeed, whether it can make a claim to knowledge at all – were structuring devices present at the beginnings of the subject and devices inextricably linked to the new subject's social and political purpose. George Sampson, for example, the school inspector who wrote *English for the English* (1921) as a proposal for reform of the English curriculum, declared that English was 'the one school subject in which we have to fight, *not for a clear gain of knowledge*, but for a precarious margin of advantage over powerful forces of evil' (1921: 14; my emphasis).

From its earliest incarnations, therefore, that compartmentalization of knowledge known as English has been a basis for purposeful social action; its organization has been determined politically and its content reified historically. If we accept this as a fair description of the evolution of the subject, then it is misleading to suggest both that governments and bureaucrats *alone* have sought to shape the subject *and* that they have only sought to do so recently. Histories of the subject such as those by Eagleton, Viswanathan and (especially) Hunter (1988) show that the subject has always had a 'governmental' function and that

English teachers have always been – at least in part – bureaucrats. In this way, the governmental function of the subject English is related to the bureaucratic identity of the English teacher, both aspects of the process that Parr (writing in 1888 – see Bullough (2001)) referred to as ‘professionalizing subject matter’. Professionalization can be seen as an important dynamic at the core of school English and the formation of subject identity as a matter in which English teachers have been actively engaged.

*Exploring subject paradigms of English in practice*

In their early work on subject subcultures, Ball and Lacey (1980) identified three subject paradigms of English based on their empirical work.

Creative/expressive	Grammarians	Sociological
<i>Emphasises</i> Creative writing The self-expression of pupils	Functional use of language, communication and syntax	Personal relationships Children’s own culture and free expression Opinions
<i>Uses</i> Poetry and literature	Coursebooks and exercises	Magazines and newspapers, etc.
<i>Key words</i> Stimulus and excitement	Basic skills	Pupils as individuals

Source: Ball and Lacey (1980: 174)

Table 3.1 *Subject paradigms of English*

Each of these subject paradigms makes a different claim to the constitution of English in terms of its subject knowledge. The creative/expressive paradigm, for example, ‘uses’ canonical or non-canonical (i.e. written specifically for young people) literature to stimulate pupils’ language development. Literature is used here to develop better (that is, more ‘creative’) people. The grammarians paradigm emphasizes linguistic knowledge – codified in textbooks and exercises – to produce a more functionally literate person. And the sociological paradigm aims to develop pupils’ interpersonal relationships through better communication fostered by reading ‘relevant’ and popular texts. Texts here are ‘used’ to develop better (adjusted) young people. The content of an English curriculum (in terms of subject knowledge) developed from within these different subject paradigms would look very different and would be differently motivated. Nevertheless, Ball and Lacey’s point wasn’t that these paradigms were the basis on which English departments became uniform and consensual epistemic communities. Rather, these paradigms, whilst forming a rationale for a department’s group action as

a 'performance team' (Goffman 1959; cited in Ball and Lacey) – for example, in talking to other departments or selecting new teachers – were also the grounds on which individual teachers came to their own understandings of the subject on the basis of consensus or dissensus with the paradigm. It is also important to note that Ball and Lacey's three paradigms were developed out of empirical work with a very small group of schools at a very particular moment in history. As they said, they offered an illustrative case rather than a model that could be generalized.

The *Versions of English* project (Barnes *et al.* 1984) was an attempt to describe the varieties of English taught to 15–17 year olds as they appeared to the observers. The authors interpreted their observations in relation to the different institutional contexts in which the versions of English were realised and – with reference to English in what is now Year 11 – developed a model of the variation they observed. This model is interesting in that its different dimensions (of what Ball referred to as subject paradigm) are related to varieties of subject pedagogy which in turn are related to teachers' perceptions of their pupils' likely success and their perspective on knowledge. In this way, Barnes' work once again can be seen to anticipate that of Hillocks (1999). For example, Barnes *et al.*'s *personal growth* and *basic skills* subject paradigms are both classified as 'restricted' versions of English in that they are modified for those pupils in the 'lower sets'. Literature in their *personal growth* paradigm is 'for pleasure and not for study' (Barnes *et al.* 1984: 247); literature in the *basic skills* paradigm 'occurs only as a source for ["comprehension"] exercises' (*ibid.*: 248).

Barnes *et al.*'s model is particularly interesting as it was developed out of a three-year study in six schools and four further education colleges. There are also interesting similarities with Barnes' earlier work (Barnes 1976) in that there is some attention paid to teachers' (to use Hillocks' term) epistemological stance: the versions they describe as *belles lettres* and *basic skills* might also be described as transmission versions based upon an objectivist epistemology whereas the *public rationality*, *cultural tradition* and *personal growth* versions might be described as interpretive and constructivist. This study also links these dimensions of pedagogy and epistemology to the classification and organization of knowledge in the version of the subject (whether it is restricted or extended) – even though this does seem to focus mainly (if not wholly) on the amount of literature studied.

It is obvious, I think, even from the highly selective account I have given here, that from its beginnings English has been a contestable subject, resulting in considerable diversity of subject knowledge content (subject paradigm) interpreted in a variety of different ways (subject pedagogy and epistemological stance). These debates have not simply been about the substantive and syntactic structures of the subject (Schwab 1964) – what to include and how it is organized – but about the values and beliefs that provide its organizing framework. Decisions about the 'necessary' subject knowledge are made on the basis of conceptions of the purposes of the subject, purposes that have much to do with the preparation of

young people for society and for the kind of ideal society the teacher (as a part of a differentiated profession) would envisage. This very explicit political dimension has led to claims for a 'special status' for English that, as the following quotation demonstrates, would also extend to special epistemological status:

[English is] nothing less than a different model of education: knowledge to be made, not given; knowledge promising more than can be discursively stated; learning as a diverse range of processes, including affective ones; educational processes to be embarked on with outcome unpredictable; students' perceptions, experiences, imaginings and unsystematically acquired knowledge admitted as legitimate curricular content. (Medway 1980; cited in Rosen 1981: 19)

Nevertheless, attempts to identify the 'knowledge-base' for English – of which Medway's above represents one, particularly liberal/progressive kind – have been consistent features of the institutionalization of the subject, whether in universities or in schools throughout its relatively short history. These efforts, combined with the parallel efforts also from the late-nineteenth century to professionalize teaching – have produced periodic crises of knowledge in which debates about what English teachers *should know, understand and be able to do* are paramount. One such periodic crisis, I have argued, reached a peak in England in the years following the publication of Circular 4/98 and the ITTNCs.

## Culture, activity, agent: designing the research

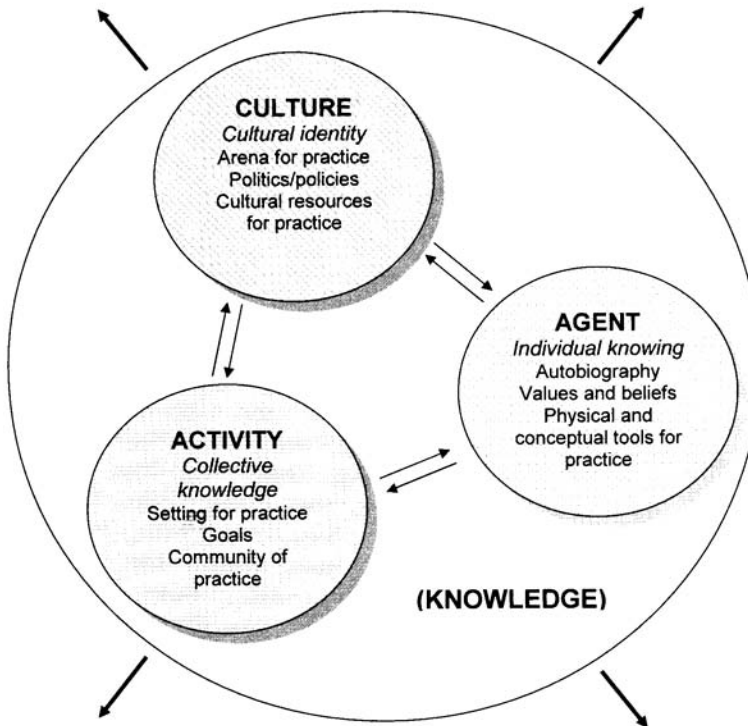
The previous chapter argued that attempts to develop a codification of teacher knowledge – and in doing so to emphasise the importance of subject knowledge – have been associated with internal and external efforts to reform the profession. Shulman's (1987) typology of professional knowledge has been shown to have been particularly influential and is in some senses prototypical of the professionalising project's response to political pressure about poor standards of teaching whilst also attempting to secure the place of initial teacher education in the universities (Labaree 1992). Shulman's typology and other more overtly political attempts to reform teacher education have stimulated a widespread and worldwide interest in researching teachers' subject knowledge. Sometimes, however, this research has used a reductive interpretation of Shulman's work, particularly with regard to his attention to beginning teachers' 'general epistemic beliefs' (Shulman 1986) and the important dimension of conceptions of purposes for teaching the subject. Nevertheless, as Shulman himself has recently acknowledged, the concept of pedagogical content knowledge was 'strictly individual and cognitive' (Shulman and Shulman 2004: 258) and omitted the important dimensions of community and setting.

However, I believe that a theoretical framework that brings together the contextualist, sociocultural and ecological perspectives on knowledge and cognition (discussed in Chapter 2) with the research on subject knowledge and the constitution of school subjects that foregrounds values and purposes (discussed in Chapter 3), can be shown to be highly generative in analyses of teachers' thinking and teachers' knowledge. The framework can be premised on a theory of knowledge creation as occurring within a dynamic system.

### Knowledge creation as a dynamic system: a theoretical framework

The dynamic and interactive nature of the systems in which knowledge is created can be represented in outline in diagrammatic form (see Fig. 4.1). Three layers<sup>1</sup> are seen to be interacting within a given bounded system or 'form of life' (Wittgenstein 1972). Knowledge is seen as an outcome of the interactions within

this system and the proposition that knowledge changes over time and in relation to changes in social and cultural context is illustrated by the arrows emanating from the outer circle enclosing the interacting elements – indicating that the system itself is in motion. In other words, the conditions for knowledge and the grounds for its verification exist within the particular system but the system itself – and the conditions and rules for evaluation – may change over time and in different contexts.



*Figure 4.1:* Diagrammatic representation of knowledge creation as a dynamic system

Within the system, the interacting layers comprise:

- *Culture*  
This offers the arena for practice, defined by Lave as a ‘physically, economically, and socially organised space-in-time ... the product of social formation and political economy’ (Lave 1988: 150–1). In the same way as Lave suggests that individual agency and the setting for activity are dialectically constituted, the arena for practice

is also dialectically constituted in relation to activity within settings. For example, the arena for practice in civil engineering – what we might refer to (using another spatial metaphor) as ‘the field’ – is dialectically constituted in relation to activity in the various settings in which civil engineers practice (laboratories, construction sites, universities, etc.). That is, practice determines the boundaries of the field and the rules by which the field as a whole validates knowledge. This is not to say that there is consensus about the boundaries and rules of the arena for practice but the reflexive nature of the interaction goes some way towards explaining the dynamic nature of the arena. The dimension of politics and policies is intended to indicate both that the arena for practice is formed in relation to political economy and that the arena provides the rules for the validation of new knowledge and for evaluation of the field as whole. Again, this is not to imply universal agreement within the arena but to suggest that it is subject to a dynamic process of change arising out of competing claims and contestation arising out of practice in different settings.

Also, the diagram suggests that resources for practice – physical and conceptual – exist at the cultural level (and are appropriated as *tools* by the individual agent in the course of activity). That is, under this definition, resources for practice include, for example, books and artefacts as well as concepts. Again, this aspect of culture is dialectically constituted in relation to activity in settings and the creativity of individual agents.

Finally, the layer of Culture within the system provides the grounds for the *cultural identity* of that system and of the activity and the agents within it (for example, civil engineering and civil engineers). In this way, the process of knowledge creation is connected to the development of a particular form of identity, a process in which legitimate peripheral participation in a community of practice is also a process of becoming.

- *Activity*

As I have already explained, activity in this analysis is defined as ‘enduring, intellectually planned sequences of behaviour, directed toward particular objects and goals’ (Yinger and Hendricks-Lee 1993: 103). The object-orientation is important and also reflects the personal commitments of individual agents towards certain forms of cultural identity. For this intentional activity to have systemic significance in the creation of knowledge, it must be situated in a community of practice, although this community does not have to exist co-temporally or co-spatially. Similarly, specifying a setting for practice does not necessarily mean that all members of that community are present at the same time: setting, under this definition, means a ‘repeatedly experienced, personally ordered and edited version of the arena’ (Lave 1988: 151); the concept of setting allows us to understand how individual knowing is instantiated in the world. Setting also allows us to understand more explicitly the relationship that exists between the individual agent and the culture.

The layer of activity therefore represents the means by which individual knowing

can be validated as knowledge according to the rules operated by the community of practice. This is at the level of *collective knowledge* which can be distinguished from the level of individual knowing and cultural identity by its emphasis on social practice and 'rule-governed behaviour' (Edwards *et al.* 2002: 39).

- *Agent*

This layer represents the individual learner and their potential for action or agency. The dynamic nature of the system as whole is underlined by obvious interrelationships between the individual agent's perceptions and prior experience at the level of culture and activity, in particular their perceptions of and participation in the settings in which they are learning and their motivations for developing a particular form of cultural identity or becoming. This can be described as an aspect of autobiography. Also, with particular reference to motivation, the importance of the individual's values and beliefs should be stressed;<sup>2</sup> this can also be expressed as their conceptions of purposes for activity (why bother? what's important?). Again, acknowledging the interrelationship between layers is important when considering the issue of values and beliefs as these are in a reflexive relationship to the goals and conceptions of purposes for activity in the community and to the operation of the rules for evaluation and validation at the cultural level.

In this layer, the individual agent's appropriation of particular physical and conceptual resources for practice is represented by the concept *tool*. To refer to physical and conceptual tools for practice highlights the individual's agency in selecting the particular resource for a given purpose; the act of selection is behind the development from resources to tool (the resource not becoming a tool until it is selected by the individual for intentional activity within a particular setting and community).

The layer of agent suggests that *individual knowing* potentially consists of innovative interventions in a community and setting that leads to the creative displacement of usual practice and the development of new knowledge. Individual knowing can also be expressed more conservatively as the simple outcome of participation. In both cases, the interactions between agent, activity and culture are the core of this dynamic system in that the individual is not conceived of as 'prior to' or 'passing through' contexts but are rather *partly composed by* their interactions within them.

It is now necessary to apply this model to the specific focus of my research: the concept of subject knowledge and the development of beginning teachers' thinking. I am defining subject knowledge as that part of a teacher's knowledge that is directly related to school subjects and the curriculum. I am not using the term 'subject knowledge for teaching' as my interest was in the broader concept and in teachers' thinking about the constitution of the subject they teach and its informing purpose, etc., rather than how it might be 'used' in performance. My interest was not, therefore, in measuring teachers' subject knowledge and how

this measure might figure in an assessment of their effectiveness as teachers. Rather, my intention was to explore how teachers' think about the subject knowledge of a school subject (English) and how this changes or develops as they learn to teach. Figure 2 provides a diagrammatic representation of subject knowledge within the dynamic system of knowledge creation I have presented.

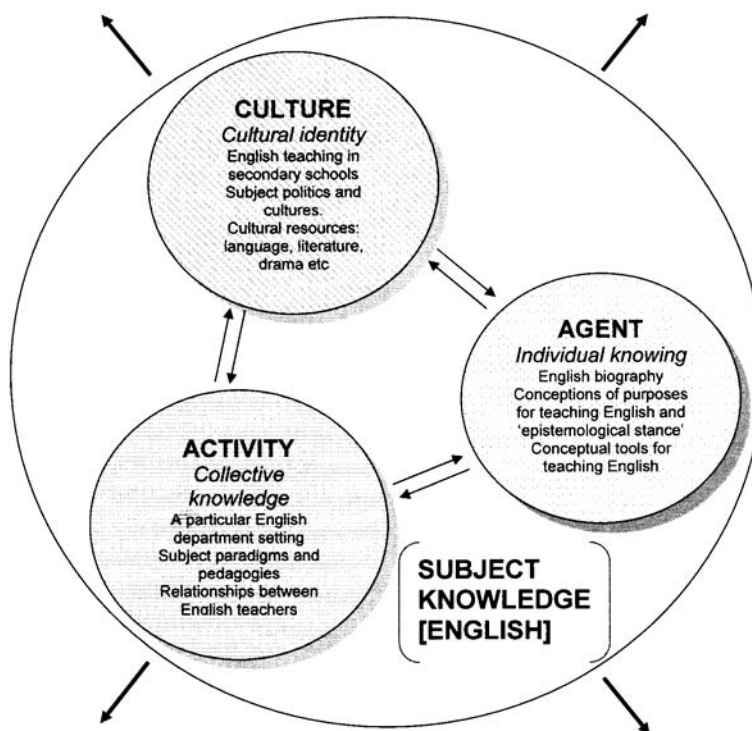


Figure 4.2: Diagrammatic representation of English subject knowledge within a dynamic system

Once again, the dynamic and interactive nature of the system allows for the possibilities of difference and development as well as suggesting an interactive and reflexive relationship between individual agency, culture and activity. The subject knowledge of school English can be seen to be subject to contestation at the cultural level; it can vary from setting to setting; it allows for individual agency.

- *Culture*

The cultural identity under study is that of English teaching; specifically, English teaching in secondary schools. At this cultural level, the subject policies, paradigms and pedagogies exist – both those ‘rules’ imposed upon the profession by government

and the profession's own culturally understood procedures for validating what counts as the subject knowledge of school English – as do the cultural resources for the constitution of English as a school subject. The latter will include the English language and literature written in English, aspects of drama and media study, and so on. This is the level at which the subject knowledge of school English becomes a cultural phenomenon. The specific example of English teaching clearly demonstrates that – at the cultural level – there is no assumption of consensus or uniformity.

- *Activity*

In professional learning (the kind of learning that leads to socially purposeful, collective action), the setting for practice is obviously important. In England, beginning teachers spend most of their time learning in school departments, working alongside a group of teachers who, although they may not share the same identical set of values and beliefs, nevertheless coexist as a community of practice within which a form of collective knowledge is developed. There will be certain agreed parameters for group action even though the community will be internally differentiated on the basis of subject paradigms (what constitutes the subject and why) and subject pedagogies (how the subject should be taught and why) (Ball and Lacey 1980, Wilson and Wineburg 1988). These agreed parameters – arising out of a form of compromise over matters of subject paradigm and pedagogy – will nevertheless determine the goals of the community's activity and will do so also in relation to the arena for practice.

- *Agent*

In this study, the individual learners were all graduates in English following a one-year course of initial teacher education leading to the PGCE. As such, they each had relatively long experience of studying English, observing English teaching and, as such, part of their *individual knowing* might be described as having an 'English biography' that is both concerned with the cultural resources of the subject and its pedagogy. They each brought a particular motivation for learning to teach that was related to their own conceptions of purpose for teaching English. Implicated in this was their own conceptions of knowledge – or 'epistemological stance' (Hillocks 1999) – and, implicitly, of how people learn. These conceptions in turn are one influence on the selection of physical and conceptual resources for practice from the cultural level that will be appropriated as tools in learning to teach English.

### **Returning to the questions guiding my research**

In using these elaborations of *culture*, *activity* and *agent* to inform my research design, I hoped to avoid, firstly, making universal generalizations about the nature of English in schools; secondly, conceptualizing knowledge as an object to be acquired, commoditized and audited; and, thirdly, understanding development simply as a linear stage-scheme.

Given the theoretical framework presented above, it was also important to acknowledge that the two questions guiding my inquiry were *interconnected*:

1. What do the beginning teachers think about the subject knowledge of school English whilst learning to teach and does this thinking change or develop?
2. How can one account for this thinking about the subject knowledge of school English and how it develops? That is, how do the beginning teachers *come to know* the subject knowledge of school English?

The perspective I have elaborated would suggest that the ‘what’ of the first question should be seen to develop in relation to activity in settings that is culturally and historically nested. In other words, the ‘what’ is not a thing and not something that exists solely inside the head of the beginning teacher. The practical implication of this understanding for my research was that the investigation of what the beginning teachers (*agent[s]*) thought about the subject knowledge of English should involve the study of their accounts and perceptions of participation in object- and goal-oriented activity in settings (*activity*) in relation to a cultural arena and a particular form of identity (*culture*).

In the next section, I briefly describe the process of the research and show how this theoretical framework informed the research design and became the ground for a critical dialogue with the data that was generated.

## The research process

### Identifying the beginning teachers: a sample?

I decided early on that I did not wish to work with beginning teachers from within my own group of PGCE students. This was because I felt that my relationship with them as a researcher could be dominated by my relationship with them as their tutor and examiner. So I approached two colleagues at other universities and asked whether I could have access to their groups of PGCE English students. Although these colleagues taught at somewhat contrasting institutions, I did not intend to develop any kind of comparative analysis between them but simply thought that by working through two institutions, I could widen the pool of potential participants.

Both colleagues agreed to allow me access and I visited the two university departments of education early on in the academic year. As a result of my visits, six PGCE students emailed me and offered to take part in the research: four from the University of Newchester and two from the University of Parkton.<sup>3</sup> Two of the students from Newchester almost immediately withdrew as they experienced difficulties with managing their workload. One of these withdrew from the PGCE course very soon afterwards; the other withdrew from the course later in the second term. Another of the Newchester students participated in the first round of interviews but withdrew from the research shortly afterwards, saying that she felt that taking part would add significantly to her workload. This meant that three of the original six participated in the research for the duration of the project.

*Introducing the beginning teachers*

The three beginning teachers with whom I worked were similar in several ways. They were all young, white women from middle-class backgrounds who had good degrees in English from pre-1992 universities. In Table 2 below, I offer outline biographical descriptions of each participant at the starting point of the research.

'Ann'	'Grace'	'Liz'
Aged 23 at the beginning of her PGCE course at Parkton University, with a second-class honours degree in English. Ann had worked for the civil service and at a further education college for a short time before applying to PGCE courses.	Aged 22 at the beginning of her PGCE course at Newchester University, with a second-class honours degree in English and Management Studies. Grace had attended a number of schools and colleges and had initially dropped out of her A-level course.	Aged 22 at the beginning of the PGCE, course at Parkton University, with a second-class honours degree in English. Liz had resat her A-levels to gain admission to the BA at her preferred university (where she stayed for the PGCE).

Table 4.1: Outline biographical description of the three participants

As young women under 25 years of age, my participants came from the largest single category (28.40 per cent) of all PGCE completers in 2002 according to recent figures (National Statistics and DfES 2005). In addition, 84.40 per cent of all 2002 PGCE completers had a second-class honours degree (*ibid.*). To this very limited extent, my participants were not atypical of those who completed PGCE courses that year (but, to be clear: I am not claiming typicality).

It was necessary to conceal the identities of the two universities from which the beginning teachers were drawn for three reasons. First and foremost, I felt that it would be inappropriate to report anything the participants told me about their PGCE course directly. Second, it was not my intention to evaluate these universities' PGCE courses in any way or to identify the tutors. And third, I wanted to make it less likely that the beginning teachers themselves could be identified. I decided to conceal the identities of the PGCE and induction years' schools and the schools and universities the participants had themselves attended for similar reasons. Pseudonyms were chosen for these schools and universities that would make their identification difficult. I dealt with the issue of participant anonymity by asking the beginning teachers to choose their own pseudonyms at the end of the first interview. This also helped to preserve a sense of identity in the case studies.

### Generating data

The methods I used to generate data are common in qualitative, interpretive research. The principal method was interviewing of a kind that could be described as somewhat ethnographic in that its object was to try to understand the participants' experience *in situ* over an extended period of time. However, the research design overall could not be described as ethnographic *per se* as, although I made several day-long visits to the three participants in their different schools and also observed them teaching during my first research visit (see below), I did not design a study that was focused around observation. This was because my interest was to describe, understand and theorize their thinking about the subject knowledge of English in situations outside of practice. This corresponded to the third tradition of research into teachers' thinking identified by Clark and Peterson (1986): teachers' theories and beliefs when not engaged in practice, a dimension of cognition Davis and Sumara (2000) described as 'individual knowing'. This is not, however, to say that my interest was focused on entirely 'inside the head' processes, as I have already explained. I was keen to include their perceptions of the settings in which they were learning and teaching and their reflections on and explanations over time of their thinking and development.

However, in order to enhance the credibility of my research and build a stronger argument, I decided to use multiple methods of generating data over an extended period of time. These included the drawing of maps, the writing of narratives, the collection of documents and the making of fieldnotes. My use of multiple methods was intended to provide a range of mediational means for the beginning teachers to work with (and on) and to engage with the questions guiding the research in a multifaceted way. There was no sense that by 'triangulating' the methods I was likely to come to a better understanding of identical phenomena.

### Interviews

My conceptualization of the research interview was consistent with the theoretical orientation I have developed thus far. Mishler's classic critique of 'standardized' interview methodologies within a 'stimulus-response' tradition was influential on this conceptualization. Rather than viewing variation in the questioning of different respondents in different situations at different times as a methodological one that might be solved with highly structured interview protocols and training programmes, with the goal of a clinical class of objectivity, Mishler reinterpreted interviews as a particular form of contextually grounded speech events. Mishler's reconceptualization of the interview had four 'essential components':

1. Interviews are speech events;
2. The discourse of interviews is constructed jointly by interviewers and respondents;
3. Analysis and interpretation are based on a theory of discourse and meaning;
4. The meanings of questions and answers are contextually grounded. (Mishler 1986: ix)

This is not to argue against consistency of approach, however. In order to satisfy oneself that an effort is being made to understand the same phenomenon, it is necessary to identify roughly similar members of the same social group (beginning teachers of English in England) and then to design the research overall so as to contrive the same opportunities for all participants to jointly construct discourse with the researcher. (A table showing the progression of questioning foci across the three interview schedules is provided as Appendix A.) Equally important, given this understanding of interviews as speech events, was their audio-recording and subsequent careful transcription. (A note on transcription is provided as Appendix B.)

In developing the interview schedules, I found the early work of Grossman (1990) helpful, particularly in relation to tracing the beginning teachers' intellectual biographies. The interview transcripts were analysed using qualitative data analysis software and procedures adapted from the work of Miles and Huberman (1994) in an iterative process that brought emerging meanings into dialogue with the *culture*, *activity* and *agent* theoretical framework discussed earlier.

### *Narratives*

Narrative has been an important concept in much research on teacher knowledge over the last 20 years (e.g. Clandinin and Connelly 2000, Connelly and Clandinin 1986, Carter 1993, 1994, Conle 2000, etc.). Sometimes narratives have been used as data upon which the researcher (in the research tradition of Shulman) seeks to generalise (e.g. Carter 1993, 1994) about teachers' 'pedagogical content knowledge'. From this perspective, learning to teach involves the acquisition of 'event-structured knowledge' (Carter 1994). Sometimes, on the other hand, claims have been made for 'narrative analysis' as an interpretive process that shifts 'from a researcher's interpretation' to a 'mutual researcher-participant reconstruction of meaning in action' (Connelly and Clandinin 1986: 296).

I decided to ask the beginning teachers to write narratives in the period between the first and second interview and to email or post them to me. I did so as I wanted to provide my research participants with another mediational tool to work with (and work on) in the process of exploring their thinking about the subject knowledge of English. I asked that they were narratives of teaching episodes in which subject knowledge as a concept had figured in some way and suggested a minimum of three (this turned out to be the number submitted by all participants). I also specified that they would be discussed at the second interview. As such, I was indicating that they would be partly interpreted within the broad framework of 'narrative analysis' rather than in the paradigmatic mode of 'analysis of narratives' (Polkinghorne 1995: 12–21). That is, the narratives were designed to become part of the research interview and would be a focus for the jointly constructed discourse. Therefore, my use of narratives as a method differs from Clandinin and Connelly's 'narrative inquiry' in that my end-purpose was not to

arrive at a mutually agreeable interpretation and the interview itself was not conceptualised as a research/professional development hybrid. Rather, my use of narratives as method has some similarities with that of Doecke *et al.* who sought to 'reconceptualise narrative as discourse' foregrounding the 'narrative situation, including the purpose of the storyteller' (Doecke *et al.* 2000: 336).

Analysis of the narratives within the interview transcripts proved to be the most reliable as, on their own, they stood out (to the beginning teachers as well as to me) as rather 'hardened stories' (Conle 2000).

#### *Maps of English subject knowledge*

I also decided to use a mapping task in the interviews to offer participants another mediational means through which to work on their thinking about the subject knowledge of English. An important influence on my decision to include this task was, once again, the work of Grossman who had included a similar task in her interviews for *The Making of a Teacher: Teacher Knowledge and Teacher Education* (Grossman 1990). However, my use of the mapping task differed from Grossman's in several respects:

- The task was to draw a map of the areas of *English subject knowledge* and how they *might* be related.
- The mapping task was introduced in the course of a less overtly structured interview than was the case in Grossman's research and it was not conceptualized as a clinical task.
- The task was repeated during each of the interviews with the participants over the two-year period; my understanding is that Grossman used the task once only in the first interview.
- During subsequent interviews, I asked the participants to reflect on their previous maps after producing a new one and to consider the similarities and differences between them.
- The maps (and written narratives) were explored during the interviews using a form of 'narrative analysis' (Polkinghorne's (1995) definition).
- In Grossman's research, the maps are not dealt with explicitly and it is not apparent what part they played in the analysis of her data. The maps themselves were not published. In this study, I deal with the maps explicitly as part of the analysis.

I did not make the decision to use a mapping task in the research from any belief that it would provide me with more authentic or 'natural' insights into the participants' thinking than their spoken language. Whilst recognizing that some people might find drawing or producing a graphical representation a useful way of articulating complex or abstract ideas, others might be equally constrained by their graphical skills. My intention was simply to find another means of putting

the ideas under examination and to explore the research questions in a multi-faceted way.

In developing a procedure for the analysis of these maps, I also drew on the research of Mavers *et al.* (2002) – and Pearson and Somekh (2003, 2000) – into pupils' conceptions of ICT as part of the British Government's ImpaCT2 evaluation of school ICT initiatives. However, my conceptualization of the mapping task also differs from that of Mavers *et al.* in two important respects:

1. I am not claiming that the maps produced by the participants are 'externalised representations' of their minds; that is, I do not believe there to be an absolute, one-to-one correspondence between what the participants drew and what they *really* thought (a claim to authenticity) nor that the map itself represents *everything* that they think about the subject (a claim for uniquely transparent attributes of drawing as an activity). This view is consistent with my position on language and thinking outlined earlier.
2. I do not make any claims about a correlation between a measure of a map's complexity and the sophistication of the participant's thinking; that is, that successful (i.e. highly skilled) graphical representation is neither an indicator of an individual's cognitive capacity nor the complexity or depth of their understanding of a phenomenon.

Nevertheless, I found Mavers *et al.*'s method of analysis very useful in attempting to take the visual images seriously *as* visual images. In particular, I adapted several of their strategies for describing the 'maps'. In view of the relatively rare use of visual images as a data-generation strategy in educational research, I now offer a more detailed account of my analytic procedures than I did for the analysis of the interview and narrative data.

In describing the maps *qualitatively*, I was interested in the map in terms of its construction as a visual image: the organization of the image, the use of icons or symbols, the concentration of detail in particular areas of the map and its perspective. I was also interested in the words that were used in the map and the ways in which they were given any sort of emphasis – for example, by graphical means (underlining, boxes, etc.) or by repetition. I attempted to get a sense of the map as a whole as well as of its constituent parts. I found Mavers *et al.*'s work useful in two respects here: first, in the categorization of 'organisational type' and, second, in the attention to "levels" of conceptualisation' (Mavers *et al.* 2002: 192, Pearson and Somekh 2000).

1. *Organizational type*

Organisational type refers to how the map is structured or organized; for example, one might be able to describe certain images as a flow chart or a family tree and others as a spider diagram. Mavers *et al.* proposed the following categories:

- *unconnected*: objects or elements ('nodes') with no links;
- *linear*: nodes linked to other nodes in sequential fashion;
- *one-centred*: 'with a clearly discernible central node from which links to other nodes radiate outward' (Mavers *et al.* 2002: 192);
- *several-centred*: 'two or more nodes acting as centres of interest' (*ibid.*);
- *spaghetti*: 'highly complex and multi-lined' (*ibid.*).

To these, I added two supplementary categories that best reflected the organization of the maps I had in front of me:

- *bounded*: the image or elements of the images are within a drawn boundary that may or may not include inter-linking lines;
- *unbounded*: the image is not enclosed by a drawn boundary but again the image may or may not include interlinking lines.

These categories refer both to the organization of the image and to the way in which it might be framed. This is also a matter of perspective (the point of view from which the image is being presented). In making a description of any map, I would refer both to whether it was bounded/unbounded and whether it corresponded to any of the organizational types suggested by Mavericks *et al.*.

### 2. 'Levels' of conceptualization

In the ImpacT2 work, Mavericks *et al.* also considered the possibility of 'looking for evidence of "levels" of conceptualisation' 'where some parts of the map became the focus for more detailed depiction than others (in the manner of a zoom lens honing in on one part of the map)' (*ibid.*).

I felt that this would be a useful category to use when describing the very much smaller set of images I was working with as it would enable me to reflect the greater level of detail given to elements (or groups of elements) in some of the maps.

Using a second approach – that I am loosely terming *numerical* – I was interested in developing codes that would allow me to use a common language of description across all the maps and that could lead to the presentation of the description in numerical form. I felt that this would be a useful and complementary approach to the more qualitative description, one that might allow for the identification of patterns related both to the content and organization. Again, I drew on the work of Mavericks *et al.* in developing the following codes that would allow me to make some straightforward numerical descriptions (rather than any form of statistical analysis, as was the intention in ImpacT2):

### 3. Nodes

For my purposes, I defined nodes as the total number of elements or objects in the participants' maps. The participants were asked to draw a map which showed the different areas of English subject knowledge and how they might be related so, predictably, the nodes in their maps consisted of words or phrases which were either linked to or in relation to other words or phrases. To achieve consistency, I determined

that a word or phrase would be counted as a node if it was connected to or in relation to another word or phrase but that I wouldn't count words or phrases as nodes if, for example, they could be interpreted as annotations on a previously counted node or if it was an annotation on a linking line. I decided not to count words or phrases that were used to annotate links and connections as I felt they were being used to describe the relationships between elements rather than identifying new elements. Nevertheless, I decided to account for this use of words and phrases separately.

4. *Links*

As in *Mavers et al.*, I counted the number of links between each node, with link being defined as a line with or without an arrowhead. To calculate the total, I counted the number of links emanating from each of the nodes.

5. *Linear connectivity*

I decided to conceptualize connectivity differently to *Mavers et al.* I felt that dividing the number of links by the number of nodes would only give me a measure of what I could refer to as 'linear connectivity', that is, connections represented by lines. One could argue that linear connectivity – with lines representing simple relationships between elements – is a relatively unsophisticated measure of complexity and that as understanding of the complexity of the relationships between elements develops it could become more difficult to represent them with lines. In other words, I accepted that a reduction in the measure of linear connectivity would not necessarily indicate a less sophisticated understanding of the phenomenon. In fact, it might simply indicate a *different* way of understanding it, focused on the relationships between its elements.

Two other codes were developed through the process of checking for points of comparison and contrast outlined earlier:

6. *National Curriculum Attainment Targets (NCats)*

I checked whether the participants' maps referred to the three attainment targets of the pupils' National Curriculum for English: speaking and listening, reading and writing. I did not double-count references to the attainment targets so there was a maximum score of three. Given that the participants were learning to teach English as framed within a statutory order, I was interested to see whether references to the NCats figured in their representations of the subject.

7. *Areas of Subject Knowledge (ASK)*

I counted the number of different areas of English subject knowledge referred to in each of the maps. I did not double-count references to the same element so, for example, if literature was mentioned three times, I counted this as the same element. The emphasis provided by the repetition was to be addressed in the qualitative description. I included in this number, any references to areas of subject knowledge usually associated with English as a school subject in England (including, for example, drama and media). I did not count references to other subject areas (e.g. history) nor did I count references to policy initiatives such as the Key Stage 3 English Framework (although, obviously, the Framework's emphasis on grammar might be reflected in the

elements of subject knowledge mentioned) nor to examination arrangements (e.g. SATs).

The qualitative and numerical description of each participants' maps is presented in the relevant case study. The discourse in which the production of the maps was embedded was analysed as part of the interview data and then combined in the relevant subsection of each case study. Changes in the maps within and between the three participants are analysed in Chapter 8.

### Timeline of data generation

Table 4.2 provides a timeline of the data generation, noting the type of data generated at each stage:

Time	Data collected
September Year 1 <i>(near to start of PGCE course)</i>	<ul style="list-style-type: none"> <li>• Preliminary conversations in groups at university base: simple biographical information</li> <li>• Subject knowledge audit and other course documents</li> </ul>
January/February Year 1 <i>(near to start of first, five-day-a-week block of teaching experience)</i>	<ul style="list-style-type: none"> <li>• Long interviews (75–90 minutes)</li> <li>• Completion of first mapping task</li> <li>• Lesson observations at PGCE school</li> </ul>
February–June Year 1	<ul style="list-style-type: none"> <li>• Beginning teachers wrote narratives about teaching episodes in which their subject knowledge was, in some way, a feature</li> </ul>
June Year 1 <i>(near to end of PGCE course during five-day-a week block teaching experience in second school)</i>	<ul style="list-style-type: none"> <li>• Long interviews (75–90 minutes), including discussion of narratives previously sent</li> <li>• Completion of second mapping task</li> </ul>
July Year 2 <i>(near to end of Induction year in first appointment school)</i>	<ul style="list-style-type: none"> <li>• Long interviews (75–90 minutes)</li> <li>• Completion of third mapping task</li> </ul>
August–September Year 2	<ul style="list-style-type: none"> <li>• Attempt to collect responses to and reflections on interview transcripts</li> </ul>

Table 4.2: Timeline of data generation and type of data

### Cases as prototypes: an argument for significance and theoretical generalizability

There are many definitions of 'case study' within the qualitative research literature. Bassey (1999) and Merriam (1988) discuss this range in their methodological reviews and many of the definitions seem to be complementary, suggesting that there is a 'bounded' focus on individuals, institutions or events. Stark and Torrance assert that it is 'an "approach" to research' (rather than a single method) that stresses the 'social interaction and social construction of meaning *in situ*' and that 'what is common to all approaches is the emphasis on study-in-depth' (Stark and Torrance 2005: 33).

However, according to Brown and Dowling, 'there is ... no such thing as the "case study approach"' (Brown and Dowling 1998: 167). Instead, they see the use of the term as an effect of the 'mythologisation' of research and a 'fetishising' of method. Whilst their argument might at least in part be interpreted as resistance to methodological orthodoxies, they do make a point highly relevant to my own research: the analytic focus on a 'single actor, a single institution, a single enterprise' under 'natural conditions' as a 'bounded system' is an illusion. Actors, institutions and enterprises are not, as they point out, 'mutually independent (bounded) systems' that are 'transparently knowable' to the researcher (*ibid.*: 166).

This view of the situatedness and ecological character of the object of research is consistent with the epistemological position I have developed thus far. An important dimension of the research presented here is that the development of the beginning teachers' thinking can only be traced with reference to their participation in communities and settings rather than asserting that either their thinking or their development is somehow contained within the head of the single actor. My use of the terms 'case study' and 'case study approach', therefore, builds on this epistemological position and is consistent with the methodological definition provided by Stark and Torrance:

... case study seeks to engage with and report the complexity of social activity in order to represent the meanings that individual social actors bring to those settings and manufacture in them. Case study assumes that 'social reality' is created through social interaction, albeit situated in particular contexts and histories, and seeks to identify and describe before trying to analyse and theorise. (2005: 33)

The case studies that follow in Chapters 5, 6 and 7 seek to understand the complexity of the beginning English teachers' thinking by tracing development over a two-year period as they learn to teach. Another important 'social reality' in this research is the research setting itself and the beginning teachers' social interactions with me as a researcher. In other words, I became part of my participants' social realities and therefore part of the research. This is not presented as a problem for

which some sort of methodological adjustments can be made but to acknowledge, as I discussed earlier, that my analysis of their thinking and its development is underpinned by the Vygotskian understanding that there is a reciprocal relationship between thinking and language and that the data under study here is principally their spoken language generated in the research setting rather than everything that they ever thought everywhere. Although I do not accept Stark and Torrance's apparently clear distinction between description and analysis, Chapters 5, 6 and 7 identify and describe what the beginning teachers think about the subject knowledge of English before Chapter 8 explicitly theorizes the process of development.

I have said that I chose to adopt the case study approach in designing the research as I wanted to understand and represent the richness and particularity of beginning teachers' thinking about subject knowledge, something I had come to feel from my own work as a teacher educator was much more complex and affective than the simple accumulation of fragments in a linear progression or the transformation of something from one box into another. However, even though I did not intend to make empirical generalizations to the population of beginning teachers in England (something that would have necessitated first and foremost a fundamentally different epistemological position), it was still necessary to be clear about the potential significance of my research to the field.

My principal argument with reference to the significance and generalizability of my research is concerned with *prototypicality*. The case studies may be regarded as *prototypical* (rather than typical) and the individual cases as *prototypes* (rather than as a sample) (Langemeyer and Nissen 2005). This view arises out of the sociocultural understanding that an examination of 'higher mental functions' (Vygotsky 1986) is made possible by creating them in the research situation. A prototype is, therefore, 'different from a sample in that it is something new' (Langemeyer and Nissen 2005: 189) that has been co-created in the research setting. The case studies might also be regarded as prototypical in that they act as a valid pattern for other cases that might be co-created by other researchers in other settings. And, as I have already stated, this might provide the grounds for a claim to theoretical generalizability in terms of my conceptualization of the development of beginning teachers' thinking about subject knowledge. Although this involves a consideration of common dimensions to development across the case studies and the generation of new concepts, there is no attempt to identify variables in the way that the term 'cross-case analysis' might imply. Given the epistemological position informing this research, it would be rather odd if I wanted both to capture the particularity, richness and complexity of each case and then obliterate it in pursuit of empirical generalizations.

#### Writing the analysis/writing as analysis

The moves from guiding questions to interviews to transcriptions to networks of codes and quotations to the construction of three extended case studies is consti-

tuted by another level of interpretation intrinsic to the process of writing. In referring to systematic, analytic procedures in educational research, a scientific aura can sometimes be created. This is why I think it is also necessary to draw attention to the textual status of the case studies and the way in which judgements and choices made in the course of writing are also interpretive moves. Britzman refers to this as the way the research text 'intends to translate, even as it is meant to stand in for, social life' (Britzman 2004: 244). The challenge for the researcher is to resist the 'desire to construct good stories filled with the stuff of rising and falling action, plots, themes and denouement' and to 'abandon the impossible desire to portray the study's subjects as they would portray themselves' (*ibid.*: 248). Doecke *et al.* (2000) and others propose that there must be resistance to 'narrative unity' and a commitment to drawing out contradictions and silences. The alternative is the sentimentalization of both researcher and participants.

In writing these case studies, I used the results of systematic analytic procedures – the lists of codes and quotations and frequencies, and so on – to build an argument that had to embrace contradictions in the data. The organization of each case study was directly informed by subdivisions of my guiding questions. This is apparent in the use of subheadings: *Settings for learning to teach*, *English biography*, *Auditing subject knowledge*, *Constituting the subject*, *The purposes of English teaching*, *Epistemological stance* and *Reflections on development*. But I also made aesthetic choices about how to choose a representative quotation, how to edit it, how to situate it within a paragraph of description and, fundamentally, how to tell the story – not as a simple story, but as a rather complex one with neither a beginning nor an end. I deliberately foregrounded inconsistencies and contradictions and my own role in jointly constructing the research in order to, as Britzman put it, 'narrate development as a creepy detour' (Britzman 2000: 248).