Academic teachers' workplace learning and its role in the formation of their teaching practices

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I hereby declare that, except where explicit attribution is made, the work presented in this thesis is entirely my own.

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Abstract

Few studies have examined the character of academic teachers' workplace learning and its role in the formation of their teaching practices. There is also a lack of appropriate theoretical and conceptual frameworks, or 'analytical perspectives', in the literature. This thesis is based on a small-scale, ethnographic-style case-study of the workplace learning of seven lecturers who comprise the Pharmacy Practice subject-group (PPG) in a 'new' university in the UK. During a six month period, qualitative data were gathered through observation of working activities and individual interviews, complemented by document review. The concepts and principles of Engeström's Activity Theory were used to examine the character of the participants' workplace learning; its motives and its functions in relation to their teaching practices. The case study also evaluated this analytical perspective.

Learning was a pervasive constituent of the participants' normal collaborative working activities. It had complex historical, social, cultural and individual dimensions; diverse motives, and its functions included the maintenance; adaptation and radical transformation of teaching practices. A comprehensive, coherent, systematic understanding of these characteristics required the adoption of the work-group as the prime unit of analysis, rather than individual members, and an acknowledgment that learning was a communal process involving various forms of participation. Thus the case study provides further evidence that academic teachers' practices are highly complex, 'situated' and often collectively formed in small-scale work groups, especially disciplinary or specialist-subject groups.

These insights indicate that the technical-rational and interpretive-constructive analytical perspectives which are widely adopted to understand academic teachers' work and learning cannot provide an adequate account of their workplace learning or its functions. The thesis provides an alternative perspective, together with detailed insights, examples and findings, which can be used to inform measures intended to improve university teaching and support the professional development of academic teachers.

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PART 1 **Towards a conceptual and theoretical framework for understanding and researching academic teachers' workplace learning**

Chapter 1
Academic teachers' workplace learning: the need for research and new analytical perspectives

Introduction

It is increasingly acknowledged by governments, employers, trade unions and various others that workplaces and working activities are significant sites of learning (Costley et al, 2010; Guile, 2009; Harteis and Billet, 2008; Evans et al, 2006). Consequently, there is growing interest in understanding the nature of workplace learning and its role in the development of working practices (ibid). In this thesis I argue there are compelling reasons for taking serious account of university teachers' workplace learning and its role in the formation of their teaching practices, broadly conceived [1]. However, there are currently two closely-related difficulties in this regard. The first is a lack of evidence on which to draw, for there has been little research which directly investigates how academic teachers learn with and from one another in the course of their normal working activities (Lea and Stierer, 2008; Nicholls, 2001). The second difficulty is a lack of appropriate conceptual and theoretical frameworks, or analytical perspectives (Warhurst 2006; Trowler et al 2005; Trowler et al 2002; Hannan and Silver, 2000). As I shall explain, these empirical and theoretical gaps have a direct bearing on policy and strategies intended to improve university teaching and support academic teachers' professional development. My aim in this thesis is to contribute to their closure.

1 The case for taking full account of academic teachers' workplace learning

There are three main reasons for proposing that we need to take full account of academic teachers' workplace learning and the role it plays in the formation of their

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[1] The term 'teaching practices' refers to the broad range of activities performed by academic teachers, from curriculum design and admissions, to assessment and examination

teaching practices. They derive from different lines of argument but the lines converge at the conclusion that learning is a *constituent* of working activities.

The first reason comes from analyses of the economic, social and technological circumstances which have emerged in many countries since the 1970s. These include:

- rapid scientific and technological developments, especially in communication and information technology (C&IT)
- the advent of an increasingly global capitalist economy and, in some countries, of 'post-Fordist' modes of production and consumption
- epistemic changes: notably a proliferation of new sites and processes of knowledge creation; a shift in the relative value accorded to different forms of knowledge; rapid, widespread dissemination of knowledge by means of C&IT, and an increase in the pace at which knowledge becomes redundant and new knowledge is created
- concern that the direction of change is becoming increasingly difficult to predict and so to plan for (Costley et al, op. cit.; Casey, 2006; Evans et al, op. cit.; Friedman et al, 2000; O'Reilly et al, 1999; Gibbons et al, 1994).

In the UK, as in other countries, analyses of these circumstances generally propose we have seen the advent of *'The Learning Age'*, in which economic success and social stability depend upon the creation and application of knowledge, especially technological innovation (DBIS, 2009; DfEE, 1998a; Guile and Young, 1996). To achieve this, it is argued, people must engage in *lifelong learning*, or at least in learning throughout their *working* lives. Among other benefits, this will help them to adapt their working practices to rapidly changing conditions (Harteis and Billet, op. cit.; Evans et al, op. cit.). In particular, it is said to be increasingly necessary for workers to acquire knowledge in the course of their working activities and, often, to create it – or, as Engeström (2001) puts it, to learn "what is not yet there" (p.270). Learning, it is argued, has therefore become a *constituent* of work in many occupations, and workplaces have become key sites of knowledge creation and

transmission (Harteis and Billet, op. cit.; Evans et al, op. cit.; Freidman et al, op. cit.; Casey, 1995).

A concern with continuing learning for work is not new, of course. Further and higher education institutions; craft and professional bodies; companies and other organisations have long provided continuing vocational education or training. However, the emphasis in this traditional provision has been on work-*related* learning, i.e. the acquisition or production of knowledge through formal education or training, engaged in at a remove from the workplace and the activities of work. The new line of argument is that we need a significant shift in attention from work-*related* learning to work-*place* learning, i.e. the acquisition or production of knowledge through learning that arises in the workplace and *in the course of* working activities (Evans et al, op.cit,; Eraut, 1994; Eraut et al, 1998; Gibbons et al, op. cit.).

Since the 1990s, the work of academic teachers has exemplified the circumstances described in the policy analyses in three respects (Costley et al, op. cit.). Firstly, like many workers, they have had to learn how to incorporate new forms of C&IT into their working activities. Secondly, in many disciplines and associated professions there have been rapid, substantial advances in knowledge, which academic teachers have needed to quickly assimilate and incorporate in their curricula. Thirdly, since the late 1980s, the higher education policies of successive UK governments have been designed to make university curricula more relevant to the needs of a knowledge-based, market economy; reduce per capita public funding, and widen participation (Hativa and Goodyear, 2002; Taylor, 1994). As a consequence, UK universities have experienced rapid, widespread and complex changes in 'client' groups; 'stakeholder' needs; funding; course design, and modes of teaching, learning and assessment (Hativa and Goodyear, op. cit.; Nicholls, op. cit.). In responding to these changes, academic teachers have been required, for example, to develop new curricula; to find ways to teach much larger cohorts of students, and to accommodate the needs of groups previously under-represented in higher education, often in the context of reduced resources (Ferman 2002). Thus, in the last two decades, many academic teachers have

been required to make substantial and sometimes radical changes to their working practices in a sustained process of workplace learning.

In the recent policy document *Higher Ambitions: the future of universities in an age of knowledge* (DBIS, op. cit.), UK universities were advised by the national government to anticipate changes of a similar scale and pace in the next decade:

> *"Demography, advances in technology, the increasing importance of knowledge and intellectual property and the increasingly international nature of so many activities including education itself are all altering the nature and form of higher education"* (p2).

At the same time, the author(s) warned that, as a consequence of the 2008-9 banking crisis, "the constraints on public finances will make it impossible to sustain the growth in public spending on universities seen over the last decade" (ibid). If these circumstances occur it is likely that many academic teachers will be required to make further radical changes to their working practices. Consequently, workplace learning will continue to be a significant constituent of the working activities of many, if not all academic teachers during the next decade.

The second reason for taking full account of academic teachers' workplace learning derives from studies of workplace learning in diverse other occupations and from associated socio-cultural theories of learning. These will be considered in detail below. The point of interest here is the general conclusion drawn in both strands of the literature that learning is an almost ubiquitous *constituent* of work because of the dynamic historical, social and cultural nature of working activities (for example, Harteis and Billet, op. cit.; Billet, 2001; Engeström, 2001; Hanks, 1991; Hart-Landsberg et al, 1992; Lave and Wenger, 1991; Marsick, 1987).

The third reason is a longstanding, general acceptance in education that teachers, like people in many other occupations, learn a great deal while engaging in normal working activities, especially when dealing with the challenges, problems and puzzles they encounter in their work (for example: Mortimer 1999; Brown and McIntyre 1993;

Pollard and Tann, 1993; Calderhead, 1988; Schon 1987; 1983; Jackson, 1968). In the particular case of academic teachers, it has long been assumed that they acquire and develop their pedagogic knowledge and skills primarily through 'doing the job of teaching' (Nicholls, op. cit.; Shrives, 2000). More recently, the literature concerned with academic teaching (see, for example, Biggs, 2003; Ramsden, 2003; Trigwell et al, 2000) has tended to assert the need for lecturers to combine the 'personal craft knowledge' they gain from first-hand experience with codified, 'public' pedagogic knowledge derived from educational research (Roxå and Mårtensson, 2009). Nonetheless, it is still widely held that lecturers learn from their experience of teaching or, put another way, that learning is a *constituent* of an academic teacher's working activities (for example: Hativa and Goodyear, op. cit.; ILTHE, 2002; Nicholls, op, cit.; Rowland, 1999).

My professional experience in this latter regard was the original stimulus to the thesis. I have been a lecturer in adult, further and higher education for almost three decades. During that time, one of my responsibilities in successive posts at a Further Education college, a Higher Education Centre in a 'mixed economy' college, and two universities (one Russell group, one post-92) has been to support the professional development of academic teachers and the enhancement of teaching. My experience of working with many hundreds of lecturers has convinced me that workplace learning does indeed play a very significant role in the formation of academic teachers' practices, including my own. Therefore it is important to understand how and why this happens. However, for reasons I shall explain in the next section, I have become increasingly concerned about what I perceive to be the limitations of the two prevailing analytical perspectives on academic teachers' work and learning within the higher education pedagogic literature, and of the research associated with them

2 The scholarly context and theoretical considerations

*The limitations of the prevailing analytical perspectives on academic teachers'
workplace learning and of associated research*

In the literature concerned with university teaching in the UK, academic teachers'
workplace learning is primarily conceptualised and theorised in terms of two analytical
perspectives (Nicholls, op, cit.; Trowler and Knight, 2000), which are widely referred
to as the *technical-rational* and *constructive-interpretive* models (Fenwick, 2001;
Wardekker, 2000; Brockbank and McGill, 1998; Eraut, 1994; Schön, op. cit.;
Habermas, 1972; 1974). Both acknowledge that 'on-the-job' learning plays a
significant role in the formation of teaching practices, but they conceptualise and
theorise this in quite different ways.

The *technical-rational* perspective emphasises the need for academic teachers to
acquire a body of codified, public propositional knowledge derived from research in
education and associated disciplines (Wardekker, op. cit.; Eraut, 1994). Viewed from
this perspective, workplace learning is conceptualised and theorised as the process in
which teachers learn in the course of their work how to apply appropriate elements of
this generalised knowledge in the specific contexts they encounter. In contrast, the
constructive-interpretive perspective gives priority to the accumulation of practical
wisdom, or personal craft-knowledge derived from sustained first-hand experience of
teaching and, in particular, from individual reflection on first-hand experience (McNiff
et al, 2003; Wardekker, op. cit.; Jarvis, 1999; Beatty, 1997). Thus, within the
constructive-interpretative perspective workplace learning is understood as the process
in which teachers generate their personal craft knowledge.

My concern is that although these two perspectives on the work and learning of
academic teachers differ in many respects they are alike in being highly individualistic
(Trowler et al, 2005; Trowler and Knight, 2000). They both take the individual lecturer
as their primary analytical focus, or unit of analysis, and are preoccupied with
individual experience and mental processes. They locate learning almost entirely in the

mind of the individual teacher and they attribute changes in teaching practices primarily, if not exclusively, to changes in individual cognition. They also have a common tendency to treat teachers as separate or distinct from the context, or circumstances in which they work and learn. In other words, both perspectives assume that individual cognition and agency are much more significant and potent than the historical, social and cultural circumstances in which people think and act (Trowler et al 2005).

In contrast, my experience leads me to think that the ways in which academic teachers perform their various tasks are strongly influenced by the behaviour of the other lecturers with whom they work. Put another way, teaching practices have a significant social dimension because they are, in part at least, collectively 'constructed' by lecturers who work and learn together in particular university departments, subject groups, course teams and other 'workgroups', which have distinct histories, social relations and communal activities. Moreover, in my experience teaching practices are closely associated with the cultural practices and resources of specific disciplines and allied professions; therefore they also have a marked cultural dimension. In addition, they are influenced by organisational and societal circumstances.

However, neither of the two prevailing perspectives includes a formal or systematic acknowledgement of the relations between individual and communal teaching practices. Nor do they give detailed, coherent, systematic attention to the specific historical, social and cultural circumstances in which particular teachers work and change their practices, or to the relations between circumstance and learning (Warhurst, op. cit.; Trowler et al, 2005; Nicholls, op. cit.; Zukas and Malcolm, 2001; Trowler and Knight, 2000). This is a particular concern for two reasons. Firstly, since 1997 universities in England and Wales have experienced sustained pressure from national government, and from the funding and quality assurance agencies to improve academic teaching and support the professional development of academic teachers (Clegg, 2008; Blackmore and Blackwell, 2006; Prebble et al, 2004). Currently, policies and strategies in this regard are typically focussed at the level of the institution or the

individual lecturer (Harteis and Billet, op. cit.; Trowler et al, 2005; Trowler and Knight, 2000), whereas my experience suggests there is a need also for attention at the intermediate level of the workgroup. Moreover, recent research supports this impression, as I shall explain below.

Secondly, I noted above that lecturers are increasingly required to learn how to change their teaching in response to frequent, rapid and complex changes in societal and organisational circumstances. It is important therefore to understand how and why this happens. At present, however, the "methodological individualism" (Trowler et al, 2005) of the two dominant perspectives exerts a strong influence on research into academic teachers' workplace learning, with the result that the research often has very similar characteristics and limitations (for examples, see McAlpine et al, 2006; McNiff et al, op. cit.; Kuit et al, 2001; Beatty, op. cit.). Thus the shortcomings of the research and analytical perspectives tend to perpetuate one another.

In considering how to move beyond these limitations, I have found it helpful to begin by acknowledging that universities are academic *workplaces*; the teaching practices of academic teachers are *working* practices and the learning that occurs in the course of their everyday working activities is *workplace learning*. While this acknowledgement may seem to state the obvious, it helps to bring about a beneficial shift in perception. For it provides the stimulus to move beyond the traditional conceptualisations and theorisations described above, and refer instead to the extensive body of research and scholarship concerned with work and learning in other occupations, which is generally ignored in discussions of academic and pedagogic development (Lea and Stierer, op. cit.). As I explain in the next section, reference to this workplace learning literature is particularly helpful because it confirms that working practices and workplace learning in many occupations have historical, social and cultural dimensions. It therefore supports the proposal that we need to explore those aspects of academic teachers' experience and learning, which have been neglected in the traditional accounts. Furthermore, it helps to identify the general elements of those dimensions which alternative kinds of research and analytical perspective must consider.

The common characteristics of workplace learning identified in the literature: a
guide to alternative kinds of research and analytical perspective

The workplace learning literature comprises numerous studies conducted in diverse
occupations, including school teaching. These generally conclude that learning at work
is 'situated' in the particular circumstances and practices of the specific workplaces in
which it occurs (Harteis and Billet, op. cit.; Evans et al, op, cit.; Hodkinson and
Hodkinson, 2005; Billet, 2001, 2004; Fuller and Unwin, 2004.; Eraut et al, 1998;
Engeström, 1994; Lave and Wenger, op. cit.). [2] Moreover, many researchers report
that when the relations between learning and circumstance are closely examined the
locus of workplace learning appears to shift from the minds of individuals to the
communal activities in which they participate, and to the interactions, relations and
cultural resources those activities involve (Harteis and Billet, op. cit.; Hanks, op. cit.).
For example, Marsick (1987) notes that people's "shared organisational lives" are
"central to the way (they) construct meaning" in their experience at work (p4, brackets
added) [3]. Gray (2001) similarly describes the "creation of knowledge" in the course of
working activities as "a shared and collective activity" (p.5), while Hanks (op. cit)
observes that learning is a process that is situated in particular forms of social
participation and is "distributed amongst co-participants, not a one-person act" (p15).

Clearly, learning is a process engaged in by people with active minds. Nonetheless,
these observations suggest that studies of, and analytical perspectives on workplace
learning will be severely limited if they focus solely or primarily on individual
practice, learning and change. A comprehensive investigation and understanding must
also take account of the collective formation of practice; the communal construction of
knowledge and meaning, and the historical, social and cultural characteristics of the

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[2] I am making a general point here. However, different studies take different analytical perspectives on
workplace learning and vary in the extent to which they situate learning in its historical, social and
cultural context, as is illustrated by a comparion of the studies by Lave and Wenger, and by Eraut et al,
1998 referred to here. For a discussion of these variations, see Lave (1993).

[3] Throughout the thesis, brackets and emphases in quotations are original unless otherwise indicated.

distinctive 'settings', activities and 'communities' in which these processes occur. In short, the literature indicates that workplace learning has historical, social, cultural and individual dimensions, and a comprehensive understanding must take full account of *all four* dimensions. Moreover, despite the variety of occupations to which the studies refer, there is general agreement in the literature that the significant elements of workplace learning include:

- the history of working activities
- the goals pursued in those activities
- the social relations, division of labour, cultural values and cultural resources they entail
- the biographies and dispositions of the individuals involved.

These conclusions are complemented by the findings from two other strands of literature. Firstly, studies of large organisational cultures report that they typically comprise a complex and dynamic set of distinctive socio-cultural groups (Trowler and Knight, 2000, and references therein). These groups are constituted, formally or informally, at a *local* level, *intermediate* between the individual and the organisation, and they provide the primary contexts – the workgroups (Eraut et al, 1998) and similar 'communities of practice' - in which people's working activities are situated.

Secondly, nascent unease with the limitations of the investigations and analytical perspectives referred to above has stimulated a small, emergent body of research and scholarship which explores the historical, social and cultural dimensions of academic workers' practices, identities and learning (for examples see, Jawitz, 2009a, 2009b; Lea and Stierer, op. cit; Warhurst, op. cit.; Fenwick, op. cit., and the work of Trowler, Knight and their collaborators cited elsewhere in this chapter). Within this literature it is generally reported that universities play a significant role in establishing the *structural* context for academic work. They set out some of the rules; provide resources; establish guidelines for the division of labour and set the task (Trowler and Knight 2000, p.30). However, academics' working practices seem to be primarily formed and enacted in workgroups at a *local* level, *intermediate* between the

individual and the university. Moreover, these local communities often perceive themselves to be distinct, and at a distance from 'the university' (Jawitz, 2009b; Trowler et al, 2005; Trowler and Knight, 2000). This suggests that to understand academic teachers' workplace learning and its role in the formation of their teaching practices it is necessary to adopt a super-individual unit of investigation and analysis, located at the level of the workgroup - although, as I shall explain in subsequent chapters, what constitutes a workgroup is uncertain.

Reference to the workplace learning literature and the emergent 'academic practices' literature therefore provides considerable guidance with regard to the development of alternative kinds of research and analytical perspective. It suggests that the local workgroup is the appropriate unit of study and analysis. It also indicates the common elements of workplace learning in a broad variety of occupations and so identifies a set of detailed themes for investigation. The historical, social and cultural nature of these themes suggests that an appropriate investigation needs to have an ethnographic or anthropologic character, and therefore to include observations of the workgroup as its members go about their normal working activities, as well as opportunities for them to discuss their experience in interviews. This combination of methods is likely to facilitate insights into the relations between the individual and the collective, and between agency and social structure. Thus the literature assists in the selection of an appropriate methodology and suitable methods for investigating academic teachers' workplace learning. In designing and conducting the empirical investigation of workplace learning that is the focus of discussion in the second part of this thesis I drew directly on this guidance, as I shall explain below.

Activity Theory: an alternative analytical perspective
The workplace learning literature also suggests that an alternative, more comprehensive analytical perspective on workplace learning must include explicit reference to all the common elements described above; offer a coherent, systematic account of the relations between them and enable us to understand their role in learning. For these reasons, in conducting an empirical investigation of academic

teachers' workplace learning, I have chosen to draw on cultural-historical activity theory (Activity Theory) as it is represented in the work of Yrjö Engeström and his collaborators (for example, Engeström, 1987; 1994; 2000a; 2001; Cole and Engeström, 1993) to provide a 'lens' through which to analyse and interpret the data. (However, as I explain in Chapter 5, I did not adopt the methodology of *Developmental Work Research*, which Engeström uses in much of his research.)

In summary, Activity Theory holds that learning occurs in the context of artefact-mediated, historically-evolving practical activities, carried on in a network of inter-related Activity Systems. The "basic elements" of an Activity System comprise:

> "a *given practitioner or <u>subject</u>*, the object *or motive of the activity, its <u>mediating artefacts</u> (e.g. tools, signs or symbols), the <u>rules</u> generally followed in carrying out the activity, the <u>community</u> of co-workers and colleagues involved in the activity and the <u>division of labour</u> within the activity"* (Hart-Landsberg et al, op. cit., p7, emphasis added).

In the chapters that follow I shall argue Activity Theory has the potential to provide the basis for a comprehensive, systematic , coherent analytical perspective on the workplace learning of academic teachers, because it:

- draws directly on Vygotsky's conceptualisation and theorisation of learning as a process with cultural-historical, social, and individual aspects
- makes explicit reference to all the common elements of workplace learning identified in the literature and summarised above
- encourages methodical attention to each of these elements
- theorises the relations between them.

Nonetheless, it is important to briefly note two caveats here which will be developed in later chapters. Firstly, Engeström generally seems to assume that Activity Systems are large entities, typically correspondent or synonymous with the organisation (1999b). In contrast, I shall suggest below that Activity Systems in universities may be much smaller and that the subject-group of seven academic teachers which was the focus of investigation was an Activity System.

Secondly, as I noted above, my concern is that the individualistic character of the two prevailing perspectives leads them to neglect the historical, social and cultural dimensions of workplace learning. In contrast, Activity Theory and other socio-cultural theories of learning are sometimes said to neglect the individual aspect. Therefore an important consideration in the case-study is the extent to which Activity Theory helps to analyse and understand the relations between *all four* dimensions.

3 An empirical investigation of academic teachers' workplace learning

The empirical investigation took the form of a small-scale, qualitative, ethnographic-style case-study and had two main aims:

- to examine the workplace learning of a workgroup of academic teachers and its role in the formation of their teaching practices
- to evaluate Activity Theory as the basis of a comprehensive, systematic and coherent analytical perspective on the data.

[As I shall explain in detail in Chapter 5, I have described the case-study as *ethnographic-style* because it adopted an ethnographic perspective – i.e. it comprised an investigation of everyday working life and cultural practices, which used a socio-anthropological theory of culture and associated enquiry practices (Green and Bloome, 1997)].

Following a scoping stage (described in Chapter 5), the workgroup that was studied comprises seven Pharmacy lecturers who form the Professional Practice subject-group (PPG), which is based in the School of Bio-medical Sciences (SBS) at 'Anon' University, a post-1992 institution with particular expertise in professional education. The members of the group have complex working identities in that they are all registered pharmacists as well as academic teachers. Three are full-time lecturers; four have part-time appointments and also work outside the university as pharmacists. They teach mainly on two courses, both of which prepare students to become licensed pharmacists.

The fieldwork was carried out over a period of six months and conducted primarily by means of participant observation and individual interview, complemented by document review, as follows.

Observation of formally and informally convened 'meetings'

I observed two formally convened PPG meetings, which lasted a total of 4.5 hours. I also observed three informal lunchtime and four coffee-break 'meetings'. These also lasted for a total of approximately 4.5 hours.

Observation of the work environment

I spent a morning (3 hours) studying the eight floors of the building in which the PPG work in order to 'map' the physical, social and institutional circumstances of their working activities. I spent a further day (6.5 hours) observing the specific physical-social spaces the group members normally inhabit in the course of their work. Throughout this observation, members of the group moved in and out of sight as they went about their work.

Observation by shadowing

I shadowed three members for a full working day in each case and another, who has only a fractional appointment, for half a day. On each of these occasions the person being shadowed worked for much of the time with other members. Therefore, during the shadowing, I closely observed various permutations of the members working together for a total of approximately 35 hours.

Thus the study involved close observation of the local environment for 9.5 hours; group meetings for 9 hours and other group working activities for 35 hours, making a total of approximately 55 hours of observation. These observations were guided by the common elements of workplace learning referred to above.

Individual interviews

Four members were each interviewed twice, the others once. The head of the Division in which the PPG is located was also interviewed once. Thus I conducted twelve individual interviews in all, each one lasting approximately 60 minutes. The interviews also explored the common elements of workplace learning referred to above and the factors that stimulated changes in teaching practices.

It is important to note here that I am currently employed at Anon University, where I am a member of the academic staff of the *Teaching and Learning Enhancement Unit* (TLEU). Located within the Faculty of Education, the Unit's role is to support the enhancement of pedagogic practice across the University. To this end, my colleagues and I provide initial teacher education and continuing development courses for academic teachers; undertake and support pedagogic research, and lead or participate in various projects concerned with the enhancement of teaching within the University. My work sometimes involves quite close links with the SBS and the Faculty in which it is located. The investigation therefore was a case of 'insider research' and I was able to use the local knowledge gained in my work to inform the study. As an employee, I was also able to gain ready access to University and School documents, and to move freely around the building in which the members work. Moreover, because I had previously met some members in various School or Faculty activities I think my presence during the observations was probably less remarkable and intrusive than if I had been a stranger. It is also possible that the members were a little more at ease and open during the interviews because they knew I was an academic and a colleague (Costley et al, op. cit.). However, I have no way of knowing if this was the case, and it is equally possible that this knowledge and their awareness of my role within the university made them more reticent.

It is also important to acknowledge that the PPG's participation in the research was opportunistic and purposive, and the group is not assumed to be representative of other workgroups of academic teachers, even within the School. Indeed, given the increasingly varied nature of universities in England and Wales, the lecturers

employed by them and the work they do (Silver, 2003; Becher and Trowler, 2001 and references therein), there is likely to be little typicality amongst workgroups of lecturers. Furthermore, as I noted above, the workplace learning literature suggests that the historical, social, cultural and individual details of each group's work and workplace learning will be distinct. Personal experience suggests that the members are like lecturers in many other workgroups in some respects, and different in other regards, as the following three examples illustrate.

Firstly, professional expertise and experience gained outside the university is a central aspect of their work. Many academic teachers in 'old' and 'new' universities have similarly complex working identities in that they are both lecturers and registered or chartered professionals, for example: engineers, architects, medical and healthcare practitioners, accountants, social workers, psychologists and lawyers; or they are expert practitioners, such as dancers, graphic designers and authors.

Secondly, the most senior PPG member is an experienced, successful researcher, engaged in externally-funded projects and doctoral supervision. The most recent member is an experienced pharmacist who has returned to the university to undertake full-time study for a PhD. The other five members were appointed primarily for their professional expertise, but two had begun to incorporate a research element in their academic work at the time of the case-study. Personal experience suggests that in these respects the members are fairly typical of the many university lecturers who comprise vocational subject-groups in 'old' and 'new' universities.

Thirdly, with one exception, the members were a close-knit group during the case-study. They spent a good deal of time together; talked a lot about their work, often in a very candid manner; had close personal relations (for work colleagues) and appeared to have a strong commitment to the group as a professional and social entity, and to teaching. In my experience, many other groups of academic teachers differ from the PPG in at least some of these respects.

As I noted earlier, the first purpose of the case-study was to examine the historical, social, cultural and individual characteristics of the members' workplace learning. It was therefore designed to investigate a "telling case" of workplace learning, rather than a "typical case" (Mitchell, 1984, p238-41). This examination required a 'close-up' or fine-grained focus on their experience and the detailed findings are highly specific to the PPG members. Nonetheless, two *provisional* general conclusions can be inferred from the findings of the case-study. These have wide potential significance, although clearly further research is required to examine their validity.

Firstly, learning was a pervasive constituent of the members' 'everyday' collaborative working activities. This workplace learning had historical, social, cultural and individual dimensions, and each dimension was rich in significant detail. Moreover, it had various motives and performed diverse functions in relation to their teaching practices. Thus the case-study provides further evidence that academic teachers' workplace learning is highly situated and complex. It seems likely that the workplace learning of other workgroups of academic teachers will have the same dimensions, and play a similarly significant and complex role in the formation of their practices. However, the *specific* details of each dimension; their influence on learning and hence the role they perform will differ in the case of each workgroup.

Secondly, in the members' work as academic teachers, the PPG was their principal workplace, the primary site where their teaching practices were formed and the main locus of their workplace learning. Consequently, to understand their workplace learning and its influence on their practices in a comprehensive, coherent manner it was necessary to take the workgroup as the prime unit of analysis, rather than the individual members, and to acknowledge that their learning was a participatory, collaborative process. Their experience suggests that academic teachers' teaching practices are frequently constructed at the level of small-scale sub-departmental workgroups, especially disciplinary or specialist-subject groups.

The case-study therefore clearly indicates that neither of the traditional, highly individualistic analytical perspectives on workplace learning can provide a comprehensive, coherent account of its character, or its role in relation to teaching practices. These shortcomings are a significant concern because, as I noted above, the two perspectives are currently the dominant frameworks adopted in the UK to understand the formation of academic teachers' practices. Consequently, they, and especially the notions of *reflective practice* that are closely associated with them, are a potent influence on measures intended to improve university teaching and support the professional development of academic teachers. I noted above that, as a result, these schemes are typically focused at the level of the institution or the individual lecturer. In contrast, the case-study provides further confirmation that the formation of teaching practices frequently occurs at an intermediate level. This suggests there would be benefits in reviewing the orientation of such schemes to ensure they take account of the formation of teaching practices at the level of the workgroup and the role that workplace learning plays in this process. It also suggests there would value in reappraising their reliance on models of reflective practice.

Furthermore, if universities are affected during the next decade by the changes predicted by the UK government (DBIS, op. cit.), it is probable that many academic teachers will be required to make substantial and sometimes radical changes to their working practices. Measures to support them in making those changes are likely to be more effective if they are informed by a better understanding of workplace learning and its role in the formation of teaching practices, in general, and the ways in which economic, social and cultural circumstances can motivate changes in teaching practices, in particular.

In both these respects, the case-study provides an alternative analytical perspective, together with detailed insights, examples and findings, which those who have an interest in the improvement of university teaching and the professional development of academic teachers could use in their work.

In addition, the case-study raises the possibility that lecturers from various adjacent workgroups who teach the same students may pursue quite different outcomes in their teaching and go about their work with those students in quite different ways – these differences being shaped by the distinct sets of disciplinary and professional cultural artefacts which are implicated in their work, and constitute their expertise. It seems likely that there would be benefits in further research to examine whether differences of this kind are common and, if they are, what effects they have on students' learning.

4 The distinctive features of the case-study

A small number of writers have recently begun to consider the insights to be gained when aspects of Activity Theory are incorporated in analyses of university lecturers' work and learning, notably Trowler, Knight and their collaborators (see, for example, Trowler and Knight, 1999; Knight and Trowler, 2001; Trowler and Turner, 2002; Trowler and Cooper, 2003; Trowler et al, 2002; Trowler et al, 2005; and also Mathieson, undated). However, I believe the case-study differs from the studies to which these writers refer, and is currently unusual, if not unique in the following respects.

Firstly, it was specifically conceived and designed to investigate the workplace learning of a small, locally distinct workgroup of university lecturers, and to examine the strengths and limitations of Activity Theory as an analytical perspective on their learning. In contrast, few, if any, of the other investigations have involved the study of workgroups. Instead, most have examined the experience of individual lecturers, often those participating in training courses for new academic teachers in isolation from their usual working colleagues. Or they have re-analysed data originally gathered in research projects designed to address other, rather different questions.

Secondly, the case-study is based on a thorough analysis of the workplace learning literature, and a detailed review of the concepts and principles of Activity Theory.

Thirdly, in taking the form of a small-scale, qualitative ethnographic-style case-study involving multiple modes of data generation, it adopts a research strategy that is consistent with the complex multi-dimensional nature of workplace learning as it is described in the literature.

Fourthly, in the thesis I have not automatically assumed that Activity Systems are synonymous with large sub-units of the university such as departments or schools. Rather I have considered the difficulty of discerning in practice the level at which Activity Systems are constituted, and thus their scale and relation to organisational structures. I have concluded it is valid to regard the PPG as an Activity System, small though it is, although I acknowledge that others may question this conclusion. The case-study therefore suggests we may need a more elaborated understanding of the scale of Activity Systems, and of their relations to organisational structures, particularly in complex organisations like universities. Nonetheless, I have also concluded that adopting Activity Theory as an analytical perspective generated significant insights into the workplace learning of the group's members.

5 The structure of the thesis

The thesis is divided into three Parts. In Part One my aim is to develop a conceptual and theoretical framework for understanding and researching academic teachers' workplace learning. In Chapter 2 I shall begin to elaborate the argument summarised above through a critical analysis of the two dominant analytical perspectives on academic teachers' workplace learning. In Chapter 3 I will review studies of workplace learning in other occupations, including school teaching, and also draw on the emerging literature related to higher education. This will enable me to identify those aspects of learning and development which a more adequate and appropriate analytical perspective must encompass. In Chapter 4 I shall analyse the concepts and principles of Activity Theory, as it is represented in the work of Yrjö Engeström. I shall argue Activity Theory appears to provide a sound basis for an alternative perspective that takes comprehensive, systematic and coherent account of the aspects raised in Chapter 3.

The focus in the Part Two of the thesis is the case-study. In Chapter 5 I will describe and justify its design. In Chapters 6-10 I shall analyse and interpret the data.

In Part Three my focus is on evaluation, discussion and conclusions. To this end I shall synthesise the conceptual, theoretical and methodological 'ideas' considered in Part One with the findings from Part Two. In Chapter 11 I shall evaluate Activity Theory as the basis of the analytical perspective. In Chapter 12 I shall evaluate the case-study; explain the main conclusions; identify the potential for further research and summarise the contributions to knowledge the thesis makes.

Chapter 2
An analysis of the prevailing technical-rational and interpretive-constructive perspectives on academic teachers' workplace learning

Introduction

In this chapter, I shall analyse how the dominant *technical-rational* and *interpretive-constructive* perspectives conceptualise and theorise academic teachers' workplace learning and its role in the formation of their teaching practices. These conceptualisations and theorisations are shaped by the kinds of knowledge the two perspectives value; how they regard teaching as an activity, and how they view teachers' professional learning in general. Therefore, it is also necessary to briefly analyse these aspects. In Chapter 1 I noted that most studies of workplace learning conclude a comprehensive, coherent consideration must take full account of the historical, social and cultural character of the communal activities and organisational contexts in which learning occurs at work, and of the relation between activity, context and learning. Therefore it is also necessary to consider the different ways in which the two perspectives conceptualise context, and theorise the relations between context, practice and learning.

There are significant differences between the two perspectives on all of these matters. Nonetheless, I suggested in Chapter 1 that they share a fundamentally individualistic character, which prevents them from taking comprehensive account of workplace learning and its role in teaching practices. In this chapter I will develop this argument and elaborate their shortcomings.

First, however, I need to briefly explain the sources I have drawn on in this chapter, especially in analysing the interpretive-constructive perspective. There is an extensive literature concerned with the nature of teachers' work and thinking (knowledge, beliefs, values, judgments and decisions) in schools and, to a lesser extent, in colleges. Many of the studies referred to in this literature were conducted in the UK and USA between the mid-1980s and mid-1990s, when there was increasing dissatisfaction with the technical-rational perspective on teaching. Although these studies are diverse in

many respects, there is considerable consistency in the general representations of teachers' work and thinking that they offer. Taken together, these representations form a coherent alternative to the technical-rational perspective. Thus, this literature provides a detailed articulation of the conceptualisations, theorisations and preoccupations that comprise the interpretive-constructive perspective. In contrast, in the higher education teaching literature, the tenets of the interpretive-constructive perspective are often taken-for-granted and thus pass largely unexamined [4]. In analysing the differences and similarities between the two perspectives, I shall draw wherever possible on the literature that deals specifically with teaching in higher education, but I shall also refer to the literature concerned with teaching in colleges and schools, because this will permit a more detailed consideration of the general assumptions, conceptualisations and theorisations that form the basis of the two perspectives.

1 The technical-rational perspective

the technical-rational perspective on the nature of teaching

The technical-rational perspective is underpinned by the following axioms (Wardekker, op. cit.) [5]:

- people want, or should want to act in a rational manner
- to act rationally we must use our knowledge of the 'natural' laws of cause and effect to identify the most effective way of achieving given aims in a specific situation. Acting rationally and effectively means manipulating the conditions

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[4] See for example, the brief references by Biggs (op. cit.; pp5-6) to "personal theories of teaching" derived from reflection on practice. Also the report of the Accreditation of Teaching in Higher Education Planning Group (1998) which, in devising the procedures to be followed by the Institute for Learning and Teaching in Higher Education, adopted 'reflective practice' as a defining characteristic of competent academic teaching without offering any explanation of why it had done so.

[5] Wardekker describes two different paradigms of social research, which he terms the nomological and interpretive, and discusses with particular reference to educational research and practice. Implicit in these paradigms are different views of human activity, learning, knowledge and 'mind'. What I have called the technical-rational perspective on pedagogic practice corresponds closely to Wardekker's nomological paradigm and the interpretive-constructive perspective to his interpretive paradigm. Because my selective quotation of Wardekker may be misleading, it should be noted he espouses neither paradigm.

of a given situation so that natural laws are able to produce the effects we desire

- the rationality and effectiveness of our actions therefore depends on "the adequacy of our knowledge of two things: first, of the natural laws that can be put to work for us so we may obtain our goals, and second, of the actual conditions in a specific situation that need to be manipulated"

- empirical research delivers "the most adequate knowledge possible". Therefore, in the case of teaching, what emerges from the research process is a "rational way of conducting educational practice" (pp. 262-263).

As defined by these axioms, the teacher's task is to manipulate the educational environment in a manner that ensures students are able to achieve prescribed learning goals with maximum efficiency and effect (Schuell, 1986). Teachers are expected to accomplish this task by applying either a body of 'scientifically' produced, codified public, propositional knowledge (Eraut, 1994) or techniques derived from that body of knowledge (Rowland, op. cit.). Thus the practices of individual teachers should be determined by 'accepted theories of teaching' derived from 'formally conducted research' (Biggs, 1999).

Although it is acknowledged within the technical-rational perspective that teachers can produce public propositional knowledge by engaging in research, it is usually assumed that the researchers who produce knowledge will be distinct from the teachers who use it (Rowland, op. cit.; Kemmis, 1995). Hence Trigwell (2001), for example, maintains that the primary professional obligation on university teachers is to ensure that the knowledge produced by 'researchers' informs their practice. Within this perspective teachers are therefore viewed principally as skilled technicians who apply received knowledge or techniques to manipulate educational environments in pursuit of ends which are generally determined by others (Zukas and Malcolm, op. cit.; Rowland, op. cit.; Zuber-Skerritt, 1992). This view is reflected and reinforced (perhaps unintentionally) in the higher education pedagogic literature by the use of industrial-mechanical metaphors to refer to teaching and learning. Race and Brown (1998), for

example, have entitled their book of advice to lecturers: '*The Lecturer's Toolkit*', and included a section headed: '*A toolkit of assessment techniques*'; while Ramsden (Foreword in Biggs, op. cit.) refers to the process of "engineering better learning outcomes".

the technical-rational perspective on teachers' professional learning and changes in teaching practices

In this perspective, professional learning is viewed as a relatively simple, linear process in which individual teachers acquire public propositional knowledge through a process of transmission and internalisation (Lave and Wenger, op. cit.), then learn how apply it in the context of their work. In this 'transmission-application' model, learning is chiefly conceptualised as a private, individual, cognitive process that is cumulative and permanent – i.e. individuals accrue a knowledge-base or body of knowledge (Trowler and Knight, 2000, p36). Therefore, changes in teaching practices are held to be primarily motivated by changes in a teacher's knowledge base or ability to apply knowledge in working activities. The two stages of the transmission-application process are usually assumed to occur separately: transmission happening at a remove from normal working activities – for example, as part of formal training events or courses, or in periods of private study; application subsequently taking place in the workplace and in the course of working activities. The actual process whereby teachers interpret and apply knowledge in particular circumstances is generally taken for granted (Eraut, (1994; Eraut et al, 1998), or else is characterised (often in a rather cursory manner) as a form of action research or reflective practice (see, for example, Biggs, op. cit., p. 6).

the technical-rational perspective on context

The technical-rational perspective incorporates a restricted notion of context and a simple, linear view of the relation between context, knowledge and action. To apply generalised public propositional knowledge in the particular settings of their work, it is held that teachers need to identify the features of a given educational environment that must be manipulated; enact appropriate techniques for accomplishing this and evaluate

the outcomes (Eraut, 1994; 1995). Context is therefore narrowly conceptualised as the immediate set of environmental conditions a teacher must 'read' and control. Consequently, less immediate disciplinary, institutional and societal characteristics of the environment in which teachers act are frequently ignored (Malcolm and Zukas, 2001, p.40). Thus context is viewed as a 'given world of data or facts', which is acted upon by teachers and influences their learning, but remains essentially separate from them (Fenwick, op. cit.; Clancy, 1997).

the technical-rational perspective on workplace learning and its role in the formation of teaching practices

It is acknowledged within this perspective that learning is often a constituent of teachers' working activities and that workplace learning plays an important role in the formation of teaching practices However, it is narrowly conceived as the process in which individuals learn in the course of their working activities to apply, in a logical, deductive manner, generalised public propositional knowledge, or derived techniques they have acquired in other contexts to the particular circumstances they encounter (Eraut et al, 1998). Changes in teaching practices therefore are assumed to be primarily motivated by changes in the knowledge teachers possess, or in the way they apply it.

Summary of the technical-rational perspective

This analysis indicates that the individual teacher is the main analytical focus, or unit of analysis in the technical-rational perspective. Teaching is primarily conceptualised and theorised as a skilled, technical process enacted by individual lecturers. Priority is given to public propositional knowledge derived chiefly from educational research and research in the social sciences. Lecturers are held to teach in a rational, skilful manner when they apply public propositional knowledge, or techniques derived from it, to manipulate the conditions of the educational environment so that students achieve prescribed learning goals with maximum efficiency and effect. Professional learning therefore is regarded as a process in which individual teachers acquire more public propositional knowledge or become more adept at applying knowledge. Changes in

teaching practices are attributed primarily to changes in the cognition of the individual teacher. Context is narrowly regarded as the immediate set of 'educational' circumstances that must be correctly 'read' and controlled by the lecturer. It is therefore separate and distinct from the individual teacher. On the basis of these conceptions and assumptions, workplace learning is primarily regarded as an aspect of the transmission-application learning process. In their working activities, individual lecturers are assumed to learn to relate generalised, public propositional knowledge or techniques they have acquired in other settings to the particular educational environments they encounter in their work. Although this process of application is largely taken for granted, it is sometimes characterised as involving a form of action research or reflective practice.

*   *   *

As I noted earlier, from the mid-1980s the validity of the technical-rational perspective was increasingly challenged (Friedman et al, op. cit.; O'Reilly et al, op. cit.; Schön, op. cit.). This challenge drew much of its impetus from studies which concluded that work in a range of professions involves situations characterised by complexity, contingency, ambiguity, uniqueness and competing or contending values (for example, Eraut, 1994 and references therein). In such circumstances, it was argued, people cannot determine how to act appropriately and effectively simply by deductively applying received public propositional knowledge or derived techniques (for example, Eraut, 1994; Eraut et al, 1998; Schön, op. cit.). Instead, in deciding how to act, people must interpret situations and exercise personal judgment. Moreover, the development of professional practice and expertise cannot be accounted for solely in terms of an individual's increased acquisition and more adept application of public propositional knowledge. Account must also be taken of the role played by experience of practice; association with professional colleagues and the acquisition of practical wisdom (Bassey, 1995), or personal craft knowledge. The technical-rational perspective therefore was said to misrepresent the general nature of professional action,

knowledge and learning, and how professional practices are actually formed (Nicholls, op. cit.).

Numerous studies have concluded that the experience of school and college teachers is broadly consistent with this general description (see, for example, Fullan, 2002; Mortimer, op. cit.; Bassey, op. cit.; Pollard and Tann, op. cit.; Calderhead, 1987). Consequently, it is inappropriate to view teaching or teachers' learning as a primarily technical-rational process (Carter and Doyle, 1987; Clark and Yinger, 1987; Reynolds and Saunders, 1987). In the development of an alternative perspective, attention focussed on the role that experience; personal identity and values; interpretation and judgment play in shaping teaching practices (Brown and McIntyre, op. cit.).

2 The interpretive-constructive perspective

the interpretive-constructive perspective on the nature of teaching
The interpretive-constructive perspective is founded on the belief that people are interpreters and constructors of a meaningful world, and is underpinned by the following axioms (Wardekker, op. cit):

- "humans . . . attach meaning to everything they encounter. These meanings guide their practices (and) are essentially individual constructions"
- the process of construction is not wholly idiosyncratic. It is constrained by "the physical properties of the world" and the meanings constructed by others "in the same cultural group". It also has a historical aspect that includes personal experience and previously constructed meanings
- nonetheless, meaning is essentially subjective. Individuals may incorporate elements of "super-individual culturally and historically formed narratives" into their personal constructions but this is a matter of choice
- particular interpretations influence behaviour if individuals feel they contribute to their " practical wisdom", not because they are objective or true. Thus the relevance of a particular interpretation depends "on the person's life

history." Learning is therefore viewed as being "directly connected to the development of personal identity" (pp 265-266).

Defined by these axioms, teaching is a highly subjective activity. The actions of individual teachers are assumed to be generated primarily by their personal interpretations of particular situations; the goals they choose to pursue in those situations; their practical wisdom, or *personal craft knowledge*, and the judgements this knowledge leads them to make. Moreover, each of these 'elements' is held to be closely related to their individual life histories and, in particular, to the personal identities and values shaped by those life histories (Brown and McIntyre, op. cit; Pollard and Tann, op. cit; McNiff, 1988; Clark and Yinger, op. cit.).

Typically characterised as a practical, action-oriented form of knowledge, personal craft knowledge is widely described as tacit, implicit and inaccessible to others (Eraut, 1994; Brown and McIntyre, op. cit.; Anning, 1988; McIntyre, 1988; Walsh, 1987). Its meaning is assumed to be closely tied to, or 'situated in' the specific circumstances experienced by the individual who produces and uses it (Eraut, 1994; Calderhead, 1990). Its validity is judged subjectively, the main criterion being that it helps the teacher who possesses it to formulate actions that achieve goals, solve problems and 'navigate' quandaries in a manner consistent with her or his beliefs and values (McNiff, 1988.; Brown and McIntyre, op. cit.; Calderhead, 1988).

the interpretive-constructive perspective on teachers' professional learning and changes in teaching practices
Within this perspective the notion of '*reflection*' or '*reflective practice*' is widely adopted to conceptualise and theorise how teachers learn, produce their personal craft knowledge and construct their practices (Trowler et al, 2005; Ecclestone 1996). Indeed, it is difficult to overstate the fundamental importance of *reflection* in this perspective and more generally in current discussions about the development of teachers (Edwards and Thomas, 2010). In the higher education pedagogic literature, reflection is widely assumed to mediate the relationship between the individual

teacher's experience, knowledge, values, goals and action, and is generally viewed as the main impetus to change in teaching practices (Hativa and Goodyear, op. cit.; McAlpine and Weston, 2002; Gosling, 2001; Nicholls, op. cit.; Jarvis, op. cit; Moon, 1999, 2001; Beaty, op. cit; Ecclestone, op. cit.; Brew 1995). Models of 'the reflective practitioner' are a common element of initial and continuing professional development courses for academic teachers (Trowler et al, 2005; Malcolm and Zukas, op. cit.). Moreover, the idea of reflective practice has been adopted as a defining characteristic of competence as an academic teacher by three influential national accreditation bodies: the Staff and Education Development Association (SEDA), the Institute for Learning and Teaching in Higher Education (ILTHE) and, for the first three years after it was established, by the ILTHE's successor, the Higher Education Academy (Trowler et al, 2005; Ecclestone, op. cit.). Thus the notion has become a "hegemonic" theory (Trowler et al, 2005).

The ideas of Dewey (1933; 1974), Kolb (1984) and Schön (1983; 1987) provide the explicit or implicit foundations for most models of reflection or the reflective practitioner within the interpretive-constructive perspective (McArdle and Coutts, 2003; Bleakley, 1999; Moon, 1999). However, since the mid-1980s, these original conceptualisations and theorisations have been synthesised, elaborated on and applied to a broad range of contexts by numerous writers (see for example, McAlpine and Weston, op. cit.; Cowan, 1998; Brockbank and McGill, op. cit.; Van Mannen, 1995; Atkins and Murphy; 1993; Zuber Skerritt, op. cit.; Boud et al, 1985). Consequently, an extensive theoretical and practical literature has accumulated and the term is now associated with a "chaotic catalogue of meanings" (Moon, 1999, p1). Nonetheless, most of the numerous nuanced versions of reflective practice in the literature have five characteristics in common:

1   they take the individual reflector-learner as their principal analytical focus. Moreover, it is the individual's cognition and feelings that are the main preoccupation. Consequently, much less attention is given to the historical, cultural and social aspects of experience and identity

2   they view action individualistically. Reflective practice is said to involve a combination of interior monologue and action, conceived and evaluated by the individual mind. Therefore, it is the actions of the individual, or their effects, which are the primary focus of attention

3   they regard learning as a process that is principally located in the minds of individual teachers, and the result of individual reflection on and evaluation of action. They also assume that knowledge is the cumulative, retrospective product of individual reflection and experience

4   they have a tendency to regard context as something separate and distinct from the individual who acts and learns within it

5   they assume changes in practice are principally the consequence of individual refection (Clegg, 2000, 2003; Fenwick, op. cit.; Mietten, 2000; Trowler and Knight, 1999).

The following observations by Scott et al (2001) are fairly typical and succinctly illustrate these characteristics. The authors begin by proposing that "we construct our knowledge on the basis of who we are and what we experience, and how we make meaning of our experiences". They then assert that "reflection" is the "meaning-making" mechanism through which individuals generate "personal practical knowledge". They define the latter as "the experiential knowledge accumulated throughout a life of *reflective practice*" and they continue as follows:

> *"Our personal practical knowledge is unique to our self, and it is accessed and articulated through reflection on action (Schön, 1983). The self also contains our world-view, which is the combination of those beliefs, values and assumptions we have formed through acting in the world. The social context is the outer world where public information is available to us to inform our practice. It is also the space in which we perform our professional practice."* (pp. 231-2).

the interpretive-constructive perspective on context

This perspective incorporates a broad and rather indistinct notion of context. It is assumed that individual teachers attach meaning to the circumstances they encounter in their working activities on the basis of their experience, broadly conceived, and that these meanings guide their judgments, decisions and choices of action. However, it is

acknowledged that, to account for the social and cultural 'world', individual constructions and interpretations cannot be entirely idiosyncratic. They must be constrained or influenced in some way by the physical properties of the situation and the constructions of others in the same cultural group(s). Thus, it is recognised in principle that circumstances must have an inter-subjective, or social aspect and a cultural aspect. Nonetheless, as the preceding analysis indicates, the experience of the individual is the primary preoccupation in this perspective. Moreover, context and the individual actor-reflector are regarded as essentially separate and distinct (Fenwick, op. cit).

the interpretive-constructive perspective on workplace learning and its role in the formation of teaching practices

In this perspective, teachers' actions are held to be determined principally by their personal craft knowledge and the theories of teaching they have constructed from first-hand experience. Observing and reviewing the effects of their actions leads to the confirmation or modification of their established patterns of understanding and behaviour. *Reflection* or *reflective practice* is the dominant model adopted to conceptualise and theorise this process. Learning is therefore held to be a frequent (or ubiquitous) constituent of teachers' work, and on-the-job or workplace learning is regarded as playing a central role in the formation of teaching practices. It is the main source of personal craft knowledge and the process in which personal theories of teaching are formed (Mortimer, op. cit.; Brown and McIntyre, op. cit.; Calderhead, op. cit.; Jackson, op. cit.).

Summary of the interpretive-constructive perspective

The individual teacher is the primary unit of analysis in the interpretive-constructive perspective. Within this perspective, teaching is principally viewed as a subjective, practical activity, and highest value is accorded to personal craft knowledge, a form of practical, contextualised, action-oriented knowledge that is chiefly derived from personal experience. Teaching practices are assumed to be constructed by individual teachers who construe situations, and make judgments and decisions regarding goals

and means, chiefly by drawing on their personal craft knowledge and theories of teaching. Context is taken to refer to a combination of the interpretation an individual teacher places on a given situation, the meanings others attach to it and the physical circumstances. The circumstances in which teachers work are therefore assumed, in principle, to have a significant social and cultural aspect. However, the individual's constructions, judgments, decisions, actions and reflection are the primary focus of attention. Moreover, the context and the individual actor-reflector are regarded as essentially separate and distinct. Learning is held to be a frequent or ubiquitous constituent of teachers' working activities, and workplace learning is regarded as the main source of professional knowledge and changes in teaching practices. It is conceptualised and theorised as the process in which individual teachers generate their personal craft knowledge; theories of teaching and teaching practices through reflection in and on first-hand experience.

3 The common features of the two perspectives and their shortcomings with regard to workplace learning

The preceding analysis indicates there are marked ontological, epistemological, conceptual and theoretical differences between the two dominant perspectives, which lead them to take quite different views of professional learning generally, and workplace learning in particular. Nonetheless, the analysis also reveals that they are alike in being fundamentally individualistic. In particular, they have seven features in common:

1 they take the individual lecturer as their primary unit of analysis

2 they adopt an individualistic view of teaching as an activity or practice. In each case, it is the actions of individuals, or their effects, that are the principal focus of analytical attention

3 they are preoccupied with individual experience and mental processes

4 they take a predominately individualistic, mental view of professional learning, locating it primarily in the individual mind

5 they attribute changes in teaching practices principally, if not exclusively, to changes in individual cognition

6   they have a common tendency to regard context as something separate and distinct from the individual who acts and learns within it

7   they assume that individual cognition and agency are much more significant and potent than the historical, social and cultural circumstances in which people think and act (Trowler et al 2005).

Even within the literature associated with the interpretive-constructive perspective there are indications that such highly individualistic perspectives cannot take comprehensive, coherent account of workplace learning and its role in the formation of teaching practices. Wardekker (op. cit) succinctly summarises the general concern as follows:

> "... both (perspectives) are at best incomplete because they imply an abstract view of human beings, . . . in both . . . humans are seen as individuals unrelated to actual human activities and the communities in which these activities are practised" (p.268, brackets and emphasis added).

More specifically, studies in the associated literature conclude that the institutional environments in which teachers work and their life histories are potent influences on their thinking and teaching practices. They also emphasise that teaching practices have a marked inter-subjective or social aspect.

the influence of institutional environments

Schoolteachers' educational views and practices are reported to be strongly influenced by the culture of the schools and, in particular, the sub-school groups in which they work: the departments, subject or year groups and course teams (Fullan, op. cit.; Calderhead, op. cit). Influential factors include authority relations; organisational sanctions, and collegial attitudes and practices. In addition, students are reported to play an important role in maintaining or reproducing local pedagogic cultures. However, the most pervasive and powerful influence is said to be exerted by what are often described as the 'technical' features of the institutional culture. These include the way time is organised; the architecture and internal spatial arrangements; student-teacher ratios; the specific curriculum models and curricular materials adopted, and the resources that are made available (Zeichner et al, 1987). Some of these circumstances

are determined by the particular educational institution, but in many cases they, and the constraints, opportunities and quandaries to which they give rise, are direct consequences of wider societal and state influences (Pollard, 1982).

In the higher education pedagogic literature, examinations of the relations between institutional teaching cultures, and the perspectives and practices of individual lecturers are sparse in comparison with the schools-based literature (Nicholls, op. cit.). However, a number of studies do report differences between academic teachers with regard to:

- how they define the purpose of university work
- their understandings of the context of their work
- how they conceive the goals of teaching
- their expectations of students
- how they approach teaching and the methods they adopt
- their relations and interactions with their students (Lecouter and Delfabbro, 2001; Trigwell and Prosser, 1996a,1996b; Prosser et al 1994; Gow and Kember,1993; Samuelowicz and Bain, 1992).

Moreover, lecturers who work in the same general locality sometimes take quite different perspectives on these matters (Trowler and Knight, 2000; Trigwell and Prosser, 1997).

However, in the higher education pedagogic literature, discussions of these variations are generally preoccupied with classification and categorisation, and typically culminate in idealised descriptions of different 'conceptions of teaching' (see, for example, Prosser and Trigwell, 1999). In contrast, little attention is given to the social and cultural origins of the differences to which these taxonomies refer, with the result that many analyses have been criticised for their "descriptive reductionism" (Lecouter and Delfabbro, op. cit., p. 205). [6] Nonetheless, there is some evidence in the literature to support the supposition that the practices of academic teachers, like those of

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[6] For a collection of papers which do include some references to the social and cultural influences on the pedagogic thinking of university teachers, see Hativa and Goodyear (2002).

schoolteachers, are shaped by the culture of the institutions and sub-institutional groups in which they work. For example, one study of the ways in which lecturers conceived and planned their teaching (Stark, 2002) reported that these aspects of their work were influenced by "enduring assumptions, seen as embedded in the disciplines and educational beliefs to which teachers have been socialised" (p6). The same study also noted that the educational literature, institutional missions and people outside the department or immediate teaching unit rarely exerted influence.

More generally, Trowler and Knight (2000) draw attention to the influence of local (sub-university) cultures and social relations on the ways in which lecturers think and go about their work as academics (see also Becher and Trowler, op. cit.; Becher, 1989). As I noted in Chapter 1, they conclude that universities, as large organisations, play a significant role in establishing the *structural* context for academic work. However, the working practices of academics are primarily situated in the activities of workgroups constituted at a *local* level, *intermediate* between the individual and the university. These communities often perceive themselves to be distinct, and at a distance from 'the university'. Furthermore, they comprise particular cultures in which diverse goals are pursued and diverse social practices, norms, values, predispositions and taken-for-granted knowledge are enacted. Moreover, there are indications that lecturers' professional and gender socialisation; social class; ethnicity, and political or religious affiliation have a potent effect on the development of their personal perspectives and practices (Jawitz, 2009b; Trowler et al, 2005; Trowler and Knight, 2000).

Many of the studies that inform the interpretive-constructive perspective also draw particular attention to the presence in teaching of competing or conflicting goals (for example, Clark and Yinger, op. cit.; Reynolds and Saunders, op. cit.; Calderhead, 1987). Differences are frequently reported in the way the goals of teaching are conceptualised by teachers, students, educational institutions and various other parties. Such influence is exerted through, for example, the allocation of financial and technical resources; stipulations with regard to curricula, or teaching or assessment

practices, and the terms and conditions of teachers' employment (Calderhead, op. cit. and studies therein). Thus it is possible for goal conflict to occur on a number of levels within and without the institution, and on various 'ideological', technical and economic grounds. In this regard it is notable that university teaching (like work in schools, colleges and diverse other public services) is increasingly subject to internal and external monitoring, direction and control (Webb, 1999).

It seems, therefore, that a comprehensive, coherent analytical perspective on the workplace learning of academic teachers must give formal, systematic attention to the historical, social and cultural features of the institutional environments in which teachers' workplace learning occurs, and to the relation between those environmental features; learning and the formation of teaching practices. However, the preceding analysis indicates that neither of the two prevailing perspectives provides the conceptual and theoretical basis for an analysis of this kind.

the influence of life history

The research reports in the literature associated with the interpretive-constructive perspective also conclude that the practices of individual teachers are shaped by their biographies, especially by the personal identities; values and goals derived from their life histories. Novice teachers are found to enter teaching already possessing diverse educational beliefs, values and principles to which they often have a strong emotional commitment. Although chiefly tacit, these are generally described as being well formed, wide ranging, complex and practical in character (Entwistle et al, 2000; Brown and McIntyre, op. cit.; Pollard and Tann, op. cit.; Busher et al, 1988; Zeichner et al, op. cit.; Clark and Peterson, 1986a, 1986b). In the case of academic teachers, these preconceptions and pre-dispositions include ideas about the nature and purpose of higher education; the goals of university teaching; the way it should be approached, and what constitutes 'good' teaching (Entwistle et al, op. cit.). Although such preconceptions and pre-dispositions are reported to be elaborated during courses of initial professional training, they are rarely observed to be radically altered or discarded (Radloff, 2002; Zeichner et al, op. cit.).

It appears therefore that academic teachers' workplace learning has a significant biographical aspect, and a comprehensive understanding must take account of the role this aspect plays in learning and the formation of teaching practices. However, the technical-rational perspective takes little or no account of biography. In contrast, it is a major preoccupation in the interpretive-constructive perspective, but the individualistic character of this perspective results in a lack of attention to the relations between biography and other historical, social or cultural influences on practice. [7]

the inter-subjective aspect of teaching

Finally, it is important to emphasise that many of the studies referred to above report that teaching involves complex social processes and interactions, including the setting of goals, mutual negotiation of action and joint construction of meaning. Thus it has a marked inter-subjective aspect. It therefore seems reasonable to expect that academic teachers' work and learning has a similar dimension. The axioms of the interpretive-constructive perspective do acknowledge this dimension in principle. Nonetheless, because both of the dominant perspectives are so persistently individualistic, neither provides a systematic, coherent account of the relations between the practices of individual teachers and those of their colleagues. Moreover, they both view the teaching practices of workgroups simply as *aggregates* of individual practices. Neither allows the possibility of a super-individual, communally constructed set of practices.

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[7] There is a growing literature concerned with teachers' biographies and identities. Van Huizen et al (2005), for example, observe that:

> "recognition of the interconnections of teachers' professional and personal lives has led to an interest in teacher biographies (Goodson 1992, Knowles 1992, Huberman et al. 1993, Kelchtermans and Ballet 2002). And the related concept of the teacher's identity or 'self'— although recognized as an as yet poorly defined category—has been examined from many perspectives, some of which focus on the professional, others on the personal identity of the teacher (Nias 1989, Cooper and Olson 1996, Tickle 1999, Beijaard et al. 2000, Korthagen 2001b)" (p. 269).

However, to date, this literature has had very little influence on the higher education pedagogic literature. Moreover, its existence does not invalidate the claim made in this chapter that there is a lack of formal, systematic analytical attention in both perspectives to cultural and social biography, and to the relation between biography, practice and learning.

Within the literature associated with the interpretive-constructive perspective, then, there are indications that the two prevailing analytical perspectives on the workplace learning of academic teachers have substantial shortcomings. The studies referred to above suggest a more comprehensive, coherent understanding requires us to expand the focus of attention to take account of teachers' participation in collaborative activities pursued in specific societal, institutional and local contexts or circumstances, with distinct historical, cultural and social characteristics. We must also include an account of the relations between biography, circumstance, practice and learning.

Summary and conclusions

In this chapter, I have analysed how the technical-rational and interpretive-constructive perspectives conceptualise and theorise workplace learning, and its role in the formation of teaching practices. I concluded there are ontological, epistemological, conceptual and theoretical differences between the two perspectives, which lead them to take quite different views of professional learning generally, and workplace learning in particular. In the *technical-rational* perspective workplace learning is principally conceptualised as the process in which individual teachers learn, in the course of their working activities, to apply generalised, public knowledge and derived techniques to the particular educational environments they encounter. This process is largely taken for granted, but is sometimes characterised as involving a form of action research or reflective practice. Changes in teaching practices are held to be primarily motivated by changes in the teacher's knowledge base or their ability to apply knowledge in working activities. In contrast, in the *interpretive-constructive perspective* workplace learning is conceptualised and theorised as a process in which individual teachers generate their personal craft knowledge, 'theories of teaching' and teaching practices through reflection in and on first-hand experience.

Despite these differences, I argued that the two perspectives are alike in being fundamentally individualistic and there are findings in the literature associated with the interpretive-constructive perspective which indicate that, as a result, they fail to account for several important aspects of workplace learning. Firstly, many studies

report that the thinking, practices and learning of school and college teachers are shaped by diverse features of the institutional environments in which they work. Multiple, contending goals and other tensions are often identified as a particular feature of these environments. Comparable evidence relating to university teachers is sparse, but a small number of studies provide grounds for assuming that they are similarly influenced. However, neither of the two prevailing perspectives gives systematic, coherent analytical attention to the historical, social and cultural features of the institutional environment, or to the relations between these features, teachers' workplace learning and the formation of their teaching practices. In this respect, I noted that university teaching is increasingly subject to internal and external monitoring, direction and control. But, because they attribute changes in practice primarily to changes in the individual, there is little or no acknowledgement in either perspective that teaching practices change in response to the expectations or requirements of institutions or external agencies.

Secondly, the ways in which teachers think, go about their work and learn are also reported to be shaped by their life-histories. However, the rational-technical perspective takes little or no account of biography, while the constructive-interpretive perspective gives little formal, systematic attention to the relations between biography and other historical, social or cultural influences on practice.

Thirdly, teachers' thinking, practices and learning are observed to be strongly influenced by the people with whom they work. Moreover teaching is reported to involve complex social processes and interactions, including the setting of goals, mutual negotiation of action and joint construction of meaning. Teaching therefore seems to have a significant inter-subjective or collaborative aspect, and this suggests that academic teachers' workplace learning has a similar social dimension. However, neither of the two perspectives analysed above relates the actions and practices of individual teachers in any formal, systematic way to those of their colleagues or to super-individual, communal practices.

the need for alternative analytical perspectives on workplace learning

The literature associated with the interpretive-constructive perspective therefore provides support for the contention that we need more comprehensive, coherent analytical perspectives on academic teachers' workplace learning and its role in the formation of their teaching practices. The research reports suggest such perspectives must acknowledge that teaching has significant historical, social and cultural aspects. They also indicate that alternative perspectives must give particular attention to the ways in which teaching practices are formed in the working activities of groups which function at a local level, intermediate between the individual and the institution.

As I noted in Chapter 1, to date research into academic teachers' work and learning has generally been informed by the two perspectives analysed above. Consequently, it has been similarly individualistic and exhibits similar shortcomings. Therefore, as Trowler and Knight (2000) observe, the development of alternative analytical perspectives must proceed in concert with alternative, congruent forms of research:

> *"the theoretical and conceptual approach to understanding professional development and life within universities has important implications for research approaches. To date, most research in higher education institutions – including our own – has adopted approaches based mainly on methodological individualism. They have relied largely on interviews with, or questionnaires completed by individual academics. In addition to them, we need fine-grained ethnographic studies at the local level to illuminate and exemplify the important social processes at work within communities of practice in higher education settings"* (p.40).

In the context of my thesis these observations are particularly significant for two reasons. Firstly, they support my argument that in the literature concerned with university teaching there is currently a lack of both relevant research and appropriate analytical perspectives relating to academic teachers' workplace learning. Therefore, in considering how these gaps might be addressed, it is necessary to look beyond that literature to other sources. As I previously noted, in this regard I have found it helpful to begin by acknowledging that universities are academic *workplaces*; the teaching practices of academic teachers are *working* practices and the learning that occurs in the course of their everyday working activities is *workplace learning*. This encourages

reference to the literature concerned with workplace learning in other occupations, which is generally ignored in discussions of academic and pedagogic development. In the next chapter I shall analyse this literature to identify in more detail the features of workplace learning which must be considered in alternative kinds of research and analytical perspective. In Chapter 4, I shall propose that Activity Theory appears to provide a robust conceptual and theoretical basis for an appropriate analytical perspective. This will again involve examining a theoretical framework that to date has been given very little attention in the literature concerned with university teaching.

Secondly, Trowler and Knight's observations provide useful general guidance with regard to an investigation of academic teachers' workplace learning. In Chapter 5 I shall explain how their conclusions and advice informed the design of the case-study that is the focus of attention in Part Two of the thesis.

Chapter 3
The common characteristics of workplace learning in diverse occupations: an analysis of the workplace learning literature

Introduction

In Chapter 2 I analysed the *technical-rational* and *interpretive-constructive* perspectives on academic teachers' workplace learning. I argued that despite their differences both are highly individualistic and I noted that even within the literature associated with the interpretive- constructive perspective there are findings which indicate this leads them to neglect historical, social and cultural aspects of teachers' professional learning. I concluded, therefore, that neither perspective is able to provide a comprehensive, systematic, coherent account of workplace learning and its role in the formation of teaching practices. Moreover, because most studies of academic teaching in the higher education literature are informed by these perspectives they have the same limitations. Consequently, there is a lack of both relevant research and appropriate analytical perspectives. To begin to address these deficiencies, I proposed it is necessary to look beyond the higher education pedagogic literature to the literature concerned with workplace learning in other occupations.

Since the mid-1980s there has been increasing interest in studying learning in the workplace. In part, this has been directly associated with the growing emphasis on workplace learning in the socio-economic analyses and policies discussed in Chapter 1. But it has also been motivated, at least in part, by dissatisfaction with the influence on Anglo-American educational discourses and practices exerted by individualistic theorisations of learning, as is exemplified in the analytical perspectives discussed in Chapter 2. This dissatisfaction derives from the neglect of the historical, social and cultural aspects of learning referred to above (Fuller et al, 2005; Wertsch, 1991; Rogoff, 1990). Notably, its emergence coincided with the first publication outside Russia of Vygotsky's work, which will be discussed in Chapter 4. Research motivated by this concern commonly studies learning in settings where the influence of traditional pedagogic ideas and practices is relatively slight, and one of the most

widely favoured has been has been 'the workplace'. [8] Prompted by these two interests, an extensive workplace learning literature has accumulated during the last two decades (for example, Evans et al, op. cit.; Rainbird et al, 2004; Engeström, 1987; 1990; 1992; 1993; 1999a, 1999b; 2001; Boud and Garrick, 1999; Eraut et al, 1998; Chaiklin and Lave, 1993; Lave and Wenger, op. cit; Lave 1988, 1990; Marsick, op. cit.).

This literature comprises studies of learning in a broad range of occupations and locations. Examples include: engineering, business and healthcare in the UK (Eraut et al, 1998); coal mining in Australia (Billet, 1995); healthcare workers in the USA (Hart-Landsberg et al, op. cit.); tailoring in Monrovia and naval quarter-mastery in the USA (Lave and Wenger, op. cit.). However, despite these variations the characterisations of workplace learning provided in the literature are notably consistent in two respects. Firstly, learning at work is widely reported to be a highly complex, relational process (Hodkinson and Hodkinson, 2005). That is, it has a large number of significant contextual or situational factors which are reciprocally related: each factor influences the others and is, in turn, influenced by them (ibid, p.122). Thus, specific instances of workplace learning are variously described as being 'embedded in', or constituted by the local historical, cultural and social circumstances

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[8] The studies motivated by this second interest in particular have made a major contribution to the development of socio-cultural learning theory. Cultural-historical activity theory, which will be discussed in Chapter 4, provides one strand of socio-cultural learning theory. Other strands include the notions of 'learning through legitimate peripheral participation' (Lave and Wenger, op. cit.), 'cognitive apprenticeship' (Collins, et al. 1990; Lave, 1988) and 'situated cognition' (Brown et al, 1989).

in which they occur. [9] The 'substance' of learning therefore varies from one local workplace to another even within the same occupation, so that the learning of two hairdressers working in different salons, for example, is observed to be significantly different (Billet, 2001). Secondly, although workplace learning is commonly characterised as highly singular or relational, there is considerable agreement in the literature with regard to its significant general factors. In summary, these include the history; goals; activities; social roles, relations and interactions; cultural values and cultural resources of the local workplace and work process, together with the biographies and dispositions of the individuals involved (for example, Evans et al, op. cit.; Hodkinson and Hodkinson, 2005; Billet, 2001; 2004; Engeström and Middleton, 1996; Suchman, 1996).

This chapter is divided into three main sections. In the first, I shall draw on the workplace learning literature to analyse these general factors in more detail. This will serve two purposes. It will further substantiate and elaborate the argument that the two perspectives analysed in Chapter 2 are unable to take serious account of workplace learning because they neglect the historical and socio-cultural nature of learning. It will also identify the general characteristics of workplace learning which must be accounted for in a more comprehensive, coherent analytical perspective.

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[9] While there is widespread acknowledgement of the close relations between learning, and the historical and socio-cultural 'circumstances' of the workplace, conceptualisations and theorisations of this relationship vary (compare, for example, Eraut et al 1998; Cole and Engeström, op. cit.; and Lave and Wenger, op. cit.). Although these variations are sometimes subtle, a broad general distinction can be made between two perspectives. In the first, learning is regarded primarily as a process located in the minds of individuals, but contextualised or 'embedded' in specific circumstances. Analyses of workplace learning which adopt a perspective of this kind therefore typically give priority to the individual mental experience and accord a subsidiary role to the social context (for example, Reeders, 2000; Eraut, et al 1995). Thus, in this perspective, learning is viewed as being 'situated' in the workplace in the sense that some of people's learning, thoughts and activities are located in space and time, or that they involve other people, or their meaning is linked to the social settings that occasion them (Lave and Wenger, op. cit., p32-35). In the second perspective, the locus of learning shifts from the minds of individuals to the communal activities in which they participate, and to the social relations and cultural resources these activities involve (for example, Cole and Engeström, op. cit.; Hanks, op. cit.). In this case, historical and socio-cultural 'circumstances' are regarded as constituents of learning. The first perspective frequently draws on cognitive-constructivist or certain social-constructivist psychological understandings of learning, while the second is often specifically informed by Vygotsky's (1978) observation that learning involves two 'planes': the *inter*-subjective (historical and socio-cultural) followed by the *intra*-subjective.

In the second section I shall review the main findings of a recent study of teachers' workplace learning in UK secondary-schools (Hodkinson and Hodkinson, 2002a,b,c,d; 2003a,b,c,d, 2004; 2005). Clearly there is a need for caution in relating the experience of school-teachers to the work and learning of academic teachers. Nonetheless, I think it is valid and helpful to take account of the study in the context of this thesis for the following reasons. As I have previously noted, very few studies have investigated the workplace learning of academic teachers. However, in the terms of the general workplace learning literature it can be provisionally assumed that school and university teachers engage in broadly similar working practices. The assumed points of similarity include the cultural needs school and university teaching serve and thus the cultural goals towards which they are oriented; the cultural 'resources' and values they incorporate; the activities they involve and their divisions of labour. Because they apparently engage in similar working practices, it is reasonable to provisionally assume there will also be similarities between the workplace learning of school and university teachers. The analysis of school teachers' learning in the Hodkinsons' study indicates it is very similar in character to learning in other occupations, although some distinctive features are also identified , which help to refine the general analysis compiled in the first part of the chapter. The study therefore supports a provisional assumption that the workplace learning of academic teachers will be broadly similar to learning in other occupations.

In the third section, I shall briefly analyse three research reports (Silver, op. cit.; Trowler and Knight, 2000; Knight and Trowler, 2000) which provide insights into the nature of lecturers' working practices and of universities as workplaces. I shall argue in this section that these reports also support the assumptions referred to above.

However, before I begin I should note that in the workplace learning literature there are significant variations in the range of phenomena different authors include under the term 'culture'. Some, like Eraut et al (1998), use it in a fairly narrow or restricted sense to mean values, attitudes and beliefs. Hodkinson and Hodkinson (2005) and Trowler and Knight (2000) are among those who include social relations and

interactions under the heading. Others, for example, Cole and Engeström (op. cit.), work with a more extended concept, which also includes what in this chapter I have referred to as *cultural resources* – for example, knowledge, tools and artefacts. In this chapter, I have generally used the terms and definitions adopted by the authors whose work is under review.

1 The general character and significant factors of workplace learning
the goals of work

Workplace learning primarily occurs when people are engaged in working practices which have evolved as the means to achieve work goals. Learning at work therefore is widely described as deriving its purpose and direction from the goals of work (Northampton 2003a; Billet, 2001; Eraut et al, 1998). [10] The goals of the distinctive working practices performed in particular occupations derive in turn from specific cultural needs and practices (Billet, op. cit. and references therein). Goals are therefore often formulated in general terms at the level of the large-scale cultural group or of the occupation as a whole. But in each workplace the goals are given particular definition, according to local circumstance and need, and the individuals involved. Thus, they become locally specific (ibid). Local workplace goals, in turn, influence the actual workplace tasks and activities to be performed; who engages in particular activities and the forms of their engagement. Hence the goals shape both the opportunities individuals have to learn and the direction of their learning (ibid, p5). The goals of work therefore are a highly significant factor in the negotiation of particular local working practices and in the workplace learning that occurs when people enact those practices.

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[10] The paper cited here as 'Northampton 2003a' is anonymous. It refers to the findings of five workplace learning research projects, collectively identified as 'The Network' and funded under the ESRC Teaching and Learning Research Programme. In June 2008, the paper was available on The Network web site at www.northampton.ac.uk.ncr.esrc-resnet.. In December 2010 the papers were available on the TLRP website: http://www.tlrp.org/.

circumstances and interactions that occasion workplace learning

Workplace learning is particularly associated with the demands, challenges, problems and puzzles people encounter in their pursuit of work goals (Hodkinson and Hodkinson, 2005; Eraut et al, 1998). Although learning is often related to the development and refinement of existing practice, it also occurs when there is a need to find ways to do what has not been done before (Engeström, 2000a; 2001).The organisation and allocation of work - the division of labour – is therefore a potent factor in workplace learning. For it facilitates or constrains the opportunities people are afforded to participate in circumstances and activities which are likely to occasion learning (Northampton, 2003a; Billet, 2001; Eraut et al, 1998; Lave and Wenger, op. cit.).

Typically, people learn how to respond effectively to problems, puzzles and challenges by a combination of thinking, talking to other people and trying things out (Eraut et al, 1998). In particular, consultation and collaboration with others – especially colleagues, clients and customers – is reported to be an "accustomed and integral part of work-based problem solving" (ibid, p21). Eraut et al (1998) observed that learning with and from colleagues occurred primarily in three types of circumstance: collaborative teamwork; on-going mutual consultation and support, and observing others in action. Such collaborative learning most often involved colleagues within the immediate work-group or local 'unit', but sometimes included people located elsewhere in the organisation, or in wider professional networks beyond it. These interactions frequently involved requests for advice or another perspective on a problem, assistance with a technical procedure or information about to whom to turn for help. Through engaging in these interactions, peoples' understanding of tasks and situations was extended (ibid. p. 23-5). Hence, as I noted earlier, Gray (op. cit.) observes that the "creation of knowledge" in the course of working activities is "a shared and collective activity" (p5) and Marsick (op. cit.) concludes that people's "shared organisational lives" are "central to the way (they) construct meaning" in their experience at work (p4, brackets added).

Although learning frequently occurs in the course of engaging with the challenges, demands and problems of work, people are also reported to learn from occasions when working practice is routine; that is, when the pursuit of work goals goes as planned or expected. On these occasions, their knowledge is reconfirmed or is refined in subtle ways, rather than being substantially extended or changed (Billet, 2001). It seems, therefore, that learning is integral to the reproduction of extant practices, as well as to changes in practice. Hence, it is widely concluded that "learning is an integral part of everyday working practices, though it is richer in some workplaces than others, and richer for some workers than others" (Hodkinson and Hodkinson, 2005, p. 113).

planned and unplanned learning

A great deal of learning at work is reported to occur incidentally or serendipitously, but on some occasions people form a conscious intention to learn and to seek out relevant learning opportunities (Eraut et al, 1998). These may include formally organised training or education, or private 'study', but they most often take the form of consultations with other people at work or deliberate engagement in specific working activities (ibid).

learning to participate

Although people may frequently perceive their learning at work to be unplanned and incidental, some studies (for example, Lave and Wenger, op. cit) conclude that working activities "are often intentionally organised to structure workers' access to the knowledge they need to learn to sustain the practice" (Billet, 2001, p. 5), and thus ensure continuing achievement of the work-goals. Drawing on Lave's (1990) notion of the workplace 'learning curriculum', Billet (2001) concludes that, although concerned with continuity of practice rather than individual learning and not intentionally stated in a syllabus, the structure of working activities is often inherently "pedagogic" (pp. 5-7). Eraut et al (1998) draw attention to three workplace processes which appear to support this conclusion:

    1 *induction and integration*: a process of socialisation intended to enable people to become effective members of the work unit and the organisation by

ensuring they share a common understanding of the purposes and goals of work; the various work roles and the expectations of those who perform them, and "the interpersonal nexus in which their work is embedded"

2   *exposure and osmosis*: opportunities for people to learn through observation of and listening to others

3   *structured personal support for learning*: provided by supervisors, mentors or other delegated colleagues. This provision may be organised formally or, as is more common, informally (p. 23).

Eraut et al's description of *induction and integration* makes no reference to the acquisition or development of 'occupational' knowledge or skills. It therefore appears to be primarily concerned with the integration of relatively experienced, proficient people who have moved from another workplace. However, others, most notably Lave and Wenger (op. cit.), report that the induction of novices often involves a very similar process. Novices are observed to follow paths of increasing involvement in the activities of the workplace, in the course of which they learn the social organisation and cultural values of the workplace as an integral part of learning the occupational knowledge, skills and habits. Thus learning to fully enact or *'participate in'* working practices involves learning all of these elements in combination. Both of these processes of induction indicate that newcomers to the workplace encounter locally specific socio-cultural norms and practices which are historical: they have been negotiated and enacted by those who preceded them (Barab & Duffy, 2000; Cole and Engeström, op. cit.; Lave and Wenger, op. cit.). However, it is also widely emphasised that these norms and practices are dynamic. They are reformed as changes occur in the goals, participants, social relations, cultural values and cultural resources that constitute working practices. The process of change often takes the form of subtle negotiation, but sometimes involves contestation or radical transformation.

participation in social and cultural practices
The studies referred to above indicate that the *social relations and interactions* of working activities are key factors in workplace learning, as are the *cultural values and*

resources implicated in those activities. I noted previously that the organisation and allocation of work has a potent influence on workplace learning, determining the extent to which individuals are able to participate in novel, varied or challenging activities which are likely to lead to learning. Moreover, when learning does occur new knowledge and skills "can flow from person to person in several directions at once" (Eraut et al, 1998, p24). The organisation and allocation of work again dictates who participates in this flow and who does not. In part, the division of labour is determined by the 'technological' nature of working practices. But the social relations that prevail in the workplace, especially the relations of power (Lave and Wenger, op. cit.), and the cultural values that help to shape those relations, are also reported to play a central role in structuring and distributing the opportunities people are afforded to:

- engage in collaborative activities and dialogues
- cooperate in attempts to solve problems
- exchange ideas
- encounter different perspectives
- gain access to the experience and expertise of others
- share tacit understandings
- negotiate new meanings and create knowledge (Billet, 2001; Brown, op. cit; Lave and Wenger, op. cit.; Lave 1988).

Social relations, and the interactions they facilitate or inhibit, also determine the extent and nature of the support and guidance afforded to individuals. More experienced and proficient colleagues are reported to play a particularly significant role in supporting and guiding learning, often modelling unfamiliar procedures or solutions to problems (Billet, 1994; 1993). Other distinctive forms of support observed in a variety of occupations include induction, mentoring, coaching, rotation, and shadowing. These arrangements appear to be generally established on an informal basis and at a local level by middle managers, colleagues or the learners themselves. However, access to such arrangements varies according to the prevailing social relations and norms of interaction (Evans et al, op. cit.; Eraut et al, 1998).

Social relations and norms in specific workplaces are shaped by numerous and varied factors. In addition to the biographies and dispositions of the work-group members, they include: seniority; work demarcations; cliques; affiliations; gender; ethnicity; and employment standing and status (Billet, 2001, and references therein). Competition between factions, or *contestation,* is reported to be a prevalent feature of social relations in many workplaces, and appears to have a strong influence on the distribution of opportunities to participate in particular activities, and to receive support and guidance (ibid).

Learning is also reported to be facilitated or constrained by attitudes towards learning that prevail in the workplace and the values inherent in those attitudes (Evans et al, 2006; Northampton, 2003a; Eraut et al, 1998)

Social and cultural norms can only function, of course, if people apprehend them. Therefore, in addition to influencing the opportunities people have to learn at work, such norms are also often the substance of learning. In interacting with colleagues in working activities and in collaborating to engage with the problems, puzzles and challenges of work, people 'acquire' or create occupational knowledge (for example, knowledge of engineering, healthcare or financial services). But they also learn what colleagues think about the goals of work; the ways in which colleagues think others should behave and perform their roles; what values inform the work of colleagues; what counts as valuable learning and knowledge in their particular workplace; how competence and expertise are defined; who possesses particular kinds of expertise, and how colleagues draw on the resources of the workplace to learn. In short, through engaging in the activities and social interactions of work, people learn the social and cultural norms of the workplace, and how to act and learn within those norms (Billet, 2001; Eraut et al, 1998.; Lave and Wenger, op. cit.). However, this process of learning is generally observed to be reciprocal or dialectical, rather than unidirectional and deterministic. For, as I noted above, socio-cultural norms, values and practices are reported to be formed and reformed in a continuing process, which often takes the form of subtle negotiation but sometimes involves contestation or radical

transformation (Billet, 2001; Engeström 2000a, 2001; Lave and Wenger, op. cit.)
Therefore, in the activities and interactions of work, people also learn the scope for
changes in the socio-cultural norms and practices of the workplace, and how to effect
these changes. Thus learning again appears to be an inherent consequence or
constituent of participation in goal-directed working activities (Billet, 2001; Cole and
Engeström, op. cit.; Lave and Wenger, op. cit.).

The *cultural resources* implicated in working practices are also a very significant
factor in workplace learning. They include explicit, codified propositional knowledge,
which is often the focus of workplace activities specifically identified as having an
educational or training function (Eraut et al, 1998). But it is generally emphasised in
the literature that the cultural resources of the workplace also comprise the practices of
work and the artefacts involved in those practices – processes, procedures and
systems, for example, and 'tools' of very diverse kinds, together with values and
attitudes. Much of the extant knowledge in the workplace and much of the knowledge
created through workplace learning is widely reported to be inscribed or embodied in
these practices and artefacts (Schön, 1999; Gibbons et al, op. cit.; Blackler, 1993; Cole
and Engeström, op. cit.; Lave and Wenger, op. cit.).

A good deal of the knowledge implicated in workplace learning is tacit and implicit
(Eraut et al, 1998; Blackler, op. cit.). In part, this is because overcoming problems,
meeting challenges and solving puzzles generally leads to the creation of knowledge
which is initially explicit and the focus of conscious attention. Subsequently, however,
this knowledge often becomes distributed amongst the work-group, and consolidated
into practices and artefacts, so that it eventually becomes taken-for-granted and tacit -
an implicit part of routine working activity (Eraut et al, 1998; Engeström, 2000a,
2001). This bi-modal process of organisational learning through 'externalisation and
internalisation' will be discussed in more detail in Chapter 4, and examples are
analysed in the case-study.

In the studies referred to above, then, workplace learning is characterised as being situated in the historical, social and cultural practices of particular workplaces and work-groups. It is also widely described as being typically collaborative or communal, for several reasons. Firstly, it occurs in the course of working practices that are collectively devised. Secondly, it generally occurs in the course of interactions between workers. Thirdly, its meaning and significance are negotiated amongst the individuals involved, and in the context of the activities in which they are engaged (Billet, 2001; Cole and Engeström, op. cit; Salomon, 1993). Fourthly, as was noted above, with time, learning generally becomes distributed across and inscribed in local working practices and artefacts. Put another way, it becomes a constituent of the local communal cultural resources.

In the two traditional perspectives on teaching analysed in Chapter 2, teachers' workplace learning is conceptualised in highly individualistic terms. In contrast, the studies referred to above indicate that workplace learning in diverse occupations is oriented to the locally negotiated goals of work and primarily occurs in the course of activities intended to realise those goals. It is situated in the specific history; social relations and interactions; cultural values and cultural resources of the particular workplaces and work activities in which it occurs – or in what Lave and Wenger (op. cit.) refer to as 'communities of practice'. Thus, the goal-oriented communal practices of the local workplace are the stimulus to learning, the locus of learning and, often, the substance of learning. For these reasons, in the workplace learning literature, learning is typically represented as a process of *participation and collaboration* in social and cultural practices (Evans et al, op. cit.; Hodkinson and Hodkinson, 2005; Northampton, 2003a; Billet, 2001; Engeström, 1994; Hart-Landsberg et al, op. cit.; Lave and Wenger, op. cit). Hanks (op. cit.) therefore represents a widespread view in his conclusion that,

> "*learning is a process that takes place in a participation framework, not in an individual mind. This means that, among other things, it is mediated by the differences of perspective among the co-participants. It is the community, or at least those participating in the learning context, who 'learn' under this definition. Learning is, as it were, distributed amongst co-participants, not a one-person act*" (p15).

This characterisation of learning as a collaborative, dialogic, participatory process stands in marked contrast to the traditional perspectives analysed in Chapter 2. It shifts the locus of learning from the individual mind to the historical, social and cultural practices of the workplaces and 'communities of practice' in which individual participate. In so doing, it indicates that analytical perspectives on professional learning which take the individual as their basic unit of analysis are unable to take serious account of workplace learning.

individual biographies and dispositions

Although they typically characterise workplace learning as a process of participation in social and cultural practices, most studies in the literature emphasise that it is not a deterministic process of enculturation or socialisation (Billet, 2001; Eraut et al, 1998). Rather, it involves a reciprocal or dialectical relationship between the individual and the communal. Individuals bring to workplaces and workgroups prior knowledge, attitudes, values, abilities and experiences derived from participation in diverse other socio-cultural practices (Evans et al, op. cit.; Northampton, 2003a; Billet, 2001). Individuals have different interests and views, including views of the goals of work, and they make diverse contributions to working activities (Lave and Wenger, op. cit. p.98). They approach work activities in different ways; they respond differently to opportunities to receive support or guidance; they differ in their motives for learning and in the degree of confidence with which they approach opportunities to learn (Northampton, 2003a.; Billet, 2001. and references therein; Billet 2004). Consequently, individual biographies and dispositions are a significant factor in workplace learning. They influence the ways in which individuals participate in work and in learning. They are a constituent of the communal practices in which others work and learn, and they are reciprocally developed and changed in the course of work and learning. Thus there is a complex reciprocal relationship between individual dispositions to learn and the socio-cultural practices of the workplace.

2 The character and significant factors of school teachers' workplace learning

introduction

In this section, my main purpose is to analyse the findings of a recent study of teachers' professional learning in UK secondary-schools (Hodkinson and Hodkinson, 2002a,b,c,d; 2003a,b,c,d, 2005). This comprised longitudinal case-studies of teachers in four small subject-departments (I.T.; Art; History and Music) in two English secondary schools. The research data comprised documents, observations of working activities and semi-structured interviews with individual teachers (Hodkinson and Hodkinson, 2005). As I noted previously, the researchers conclude that "teacher learning, like other workplace learning, is complex and relational" (2005, p.122), and the factors they describe as being significant in these complex relations are broadly those discussed above. For example, they identify two particularly potent influences on the nature and extent of the participating teachers' workplace learning:

- the socio-cultural practices of the subject departments (the local workplaces) in which those teachers worked and learned
- their individual biographies and dispositions (2005, p. 109).

However, they also identify some distinctive features of teachers' workplace learning which help to refine the general analysis compiled in the preceding section. To avoid unnecessary repetition, in the analysis that follows I shall draw attention only to these distinctive features.

the goals of teachers' work

Hodkinson and Hodkinson (2005) report that teachers' workplace learning was frequently occasioned by the need to respond to changes in the policies and requirements of the school or central government. The researchers note such changes were often at odds with local or individual "agendas for development", but they were nonetheless made through compulsion or a belief that failure to change would disadvantage students (2003b, p.8). Consequently, they conclude that school and national policies, regulatory frameworks and interventions were a third important influence on workplace learning.

Aside from these observations, the researchers give little attention to the goals of teachers' work in what is otherwise a very detailed study. However, I noted in the preceding chapter that this is a prominent theme in many of the studies which inform the constructive-interpretive perspective. Given the lacuna, I think it is appropriate to repeat that these latter studies conclude the presence of competing or conflicting goals is a common characteristic of teachers' work, because teachers themselves, students, educational institutions, and various other parties frequently conceptualise the goals of education and teaching in different, often conflicting ways.

circumstances and interactions that occasion workplace learning

Hodkinson and Hodkinson's general conclusion is that teachers are constantly learning (2003b) and that most teacher learning occurs through the everyday activities involved in doing the job (2002c). Although learning differed in different departmental cultures, the circumstances and experiences that occasioned learning were broadly similar across all four departments involved in the study (2003b) and for analytical purposes these can be divided into four categories.

Firstly, learning occurred in the course of dealing with the problems, puzzles and challenges that arose in the classroom, including when team-teaching (2005). Secondly, learning was occasioned by participating in various collaborative or communal activities other than 'classroom teaching' which constitute the normal work of teachers. Learning in these circumstances typically involved conversation; observing and taking an interest in what others do; joint activities; sharing ideas and requesting or giving advice (2005). Thirdly, as was noted above, learning was frequently occasioned by the need to respond to changes imposed by the school or national government. Some of these changes involved refinements to existing practices, but others required teachers to collaboratively learn to do "something new where there is no established expert" (2003b, p.8). Fourthly, teachers incorporated into their working practices ideas encountered in diverse circumstances in the workplace, the home and other non-work settings (2003b).

participation in distinctive social and cultural practices

Hodkinson and Hodkinson identify the social and cultural practices of secondary school *subject departments* as one of the most significant factors in the workplace learning of the teachers who participated in their study (2005). They attribute this significance to "the importance of academic subjects in the English secondary school curriculum and in teachers' sense of professional identity . . ." (2005, p.119). The effect of these two factors and the related division of labour within secondary schools was that the *subject department*, rather than the school, functioned as the teachers' primary workplace – or primary 'community of practice' (2005, p.119). The workplace learning of the schoolteachers who participated in this study arose from and was shaped by their participation in the social and cultural practices of these local workplaces; that is, cultural practices which had a marked disciplinary aspect

It is difficult to discern from the research reports if there were significant differences in how teachers' work was *formally* organised and allocated in the four departments. Nonetheless, significant differences were observed in the social relations and interactions, and cultural values which prevailed in each department. For example, some teachers worked in what is described as a "collaborative departmental culture", others in one which was "loosely integrated". Similarly, departmental leadership is characterised as being "subtle" in one department and "more forceful" in another (2005). The researchers report that these socio-cultural differences between departments "strongly influenced" teachers' learning (2005). They conclude, for example, that the most "effective" learning took place in departments where there was a strong "collaborative culture", and where continual sharing, exchanging and mutual learning were integral parts of everyday practice (2005).

individual biographies and dispositions

As I noted above, in addition to the socio-cultural practices of subject departments, Hodkinson and Hodkinson identify teachers' individual dispositions as being a particularly significant factor in workplace learning. Indeed, they propose that the "complex interrelationships" between these two factors are "arguably the most

significant determinant of teacher learning" (2003b, p7). All of the teachers who participated in this study are described as having "learned in effective ways" (2005, p116). However, their life histories, and the identities, knowledge, abilities and dispositions derived from those histories influenced the ways in which individuals perceived or constructed, and took advantage of opportunities to learn at work (2005, pp118-9). The significant factors that shaped teachers' dispositions are reported to be numerous, diverse and complex. They included "the status, career ambitions, identity and self-perception of the teacher" (2005, p.126). Individual biographies and dispositions are also reported to have played a significant role in shaping departmental social relations and cultures (2005).

In the introduction to this chapter, I proposed that Hodkinson and Hodkinson's study has special significance in the context of this thesis because, in the terms of the workplace learning literature, it can be provisionally assumed that school and university teaching involve very similar *working practices*. I further argued that, because they apparently engage in similar working practices, it is reasonable to provisionally assume there will be close similarities between the workplace learning of school and university teachers. In the next section of this chapter, I shall analyse findings from three research reports which support these assumptions.

3 The work and 'workplaces' of university teachers

The studies considered above clearly indicate that workplace learning is embedded in the distinctive socio-cultural practices of specific workplaces. Therefore, in considering the learning of people who work in large organisations or institutions, a key task is to identify the workplace. In the case of university teachers, it might be assumed that this is the university. But the workplace learning literature, especially Hodkinson and Hodkinson's study, suggests that this assumption may confuse the employing organisation with the place of work. For in the case of secondary-school teachers the *subject* department is their primary workplace, not the school. In this section I shall briefly analyse three research reports (Silver, op. cit.; Trowler and Knight, 2000; Knight and Trowler, 2000) which conclude much the same is true of

university lecturers. Taken together, these reports also indicate a number of close similarities between the significant socio-cultural features of lecturers' local workplaces and working practices, and those of secondary-school teachers.

Drawing on interviews with academics holding diverse posts in fifteen U.K. universities and on other studies of the ways in which academics experience their work, Silver (op. cit) concludes that universities are complex, heterogeneous institutions in which local, sub-institutional environments and 'cultural' groups – departments, research groups and the like – are the primary location of lecturers' work (p. 160-5). Each of these groups has "their own touchstones of academic and professional behaviour, scholarly values and critical endeavour" (p.166). Silver also notes that change, uncertainty and conflict deriving from institutional or national policies are often constituents of lecturers' work (p. 162).

These conclusions are corroborated by Trowler and Knight (2000), who studied the experience of newly appointed academics in Canadian and English universities as they underwent "the process of socialisation into academic life" (p.27). Like Silver, they conclude that, so far as lecturers' work is concerned, learning and 'cultural change' within the university occur at the local level, intermediate between the organisation and the individual (p. 40). While acknowledging that the university "may set the structural context for academic work", they insist that "day-to-day practices" are formed in local 'communities of practice'. That is, in subunits of the university, which often perceive themselves to be distinct from the university (pp.30-31). The authors describe these local sub-units as "the cultural powerhouses of university life, places where culture is both enacted and constructed and where personal identity coalesces, is shaped and reshaped." (p. 30). In common with Silver, Trowler and Knight also emphasise that dissent and conflict are a common characteristic of lecturers' local workplaces, and are "the roots of cultural construction" (p. 32). They conclude that power relations are a central feature of this process of construction, as are the professional and personal identities, values and abilities of the individuals involved (p. 32-33).

The comments noted above are concerned with academic work in general. However, in a second paper (Knight and Trowler, 2000), which draws on broadly the same data, Trowler and Knight rehearse and elaborate some of these observations with specific reference to the development of lecturers' teaching practices. They note that "in educational contexts, people may be members of several activity systems", but they again conclude that,

> *"in a higher education institution the academic department or subunit of it is usually the main activity system for most academic staff. This is the central locus of cultural enactment and, importantly, construction in universities"* (p. 69). [11]

More specifically, they observe that "activity systems at the local, departmental level (are) the central loci of changes in approaches to and recurrent *practices in teaching*" (ibid, brackets and emphasis added).

Trowler and Knight report that the distinctive socio-cultural practices of these local workplaces are shaped by, amongst other things:

- the personal histories of the lecturers involved
- the ways in which power is exercised
- the extent to which lecturers experience isolation or collegiality
- roles, goals and expectations
- the allocation and amount of work
- similarities and differences in personal and professional experience
- perceptions of the subject or discipline – including how it is defined, the part it plays in identity, and the importance attached to research/scholarship
- the quality of local management
- the architecture and allocation of working spaces. (ibid, pp. 73-76)

There is a close correspondence between the factors listed here and those described as influencing the work and learning of school teachers in the literature associated with

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[11]. Knight and Trowler use the term "activity system" in this paper solely according to the following definition which, from my reading, is their own: "An activity system is a functional sub-system (or holon) of a larger system in which people work together on the tasks which the system was created to manage" (2000, p69).

the interpretative-constructive perspective. This correspondence provides further grounds for provisionally assuming that the working practices and workplace learning of university and school teachers have a number of similarities.

The three reports considered in this section conclude that academic teachers' work is primarily situated in distinct university departments and similar sub-units, and it is in these local workplaces that the socio-cultural practices of work are communally developed and workplace learning occurs. Consequently, to better understand academic teachers' workplace learning and its role in the formation of their teaching practices, we need to develop accounts of the working lives of these sub-units. However, as I have argued above, in this regard there is currently a lack of research and appropriate analytical perspectives in the higher education pedagogic literature,

4 Summary and conclusions

The studies in the workplace learning literature refer to learning in diverse occupations and locations. Nonetheless, their conclusions, which I analysed in the first section of this chapter, are broadly consistent. In summary, workplace learning is generally characterised as a complex, multi-dimensional process of participation and collaboration in the working practices of particular workplaces and work-groups. The principal common factors in this process are the history; goals; social relations and interactions; division of labour; and cultural artefacts of the local workplace and work activities, together with the biographies and dispositions of the individuals involved. These factors are reciprocally related. As I shall explain below, they are also key considerations in the identification of an appropriate alternative analytical perspective and prominent themes in the case-study. Therefore they play a central role in the remainder of the thesis. One important consequence of this characterisation is that the primary locus of workplace learning shifts from the minds of individuals to the historical, social and cultural practices in which they participate.

Two conclusions in particular can be drawn from this analysis. Firstly, a comprehensive, coherent analytical perspective on workplace learning must be

founded on an acknowledgement that workplace learning is a complex process, which has historical, cultural, social and individual dimensions. It must incorporate all the significant factors identified above and offer a coherent, systematic account of the complex, reciprocal relations between them. It must also locate individual practices and learning within the larger collective practice of the local workplace and workgroups, in which individuals participate, collaborate, negotiate and contest. Therefore, it must adopt as its primary unit of analysis a super-individual, communal practice which is more than a simple aggregate of individual practices, and it must account for the ways in which this communal practice is reproduced and changed. In the following chapter I shall argue that cultural-historical activity theory satisfies all these criteria.

Secondly, analytical perspectives on professional learning which take the individual as their primary unit of analysis and are preoccupied with mental states will be unable to provide a comprehensive, systematic and coherent account of workplace learning. Therefore, the analysis in the first section of this chapter further substantiates and elaborates the argument developed in Chapter 2 that the two dominant perspectives on professional learning are unable to take serious account of workplace learning.

In the second section of the chapter, I analysed the findings of a study which indicates that school teachers' workplace learning in four UK secondary-school departments was very similar in character to learning in other occupations, and the significant factors were broadly the same in both cases. Four of these factors were identified as being particularly potent influences on the nature and extent of teachers' workplace learning:

- the socio-cultural practices of the *subject* departments that constitute the primary workplaces in which teachers work and learn
- the biographies and dispositions of the individual teacher.
- the policies and requirements of the school or central government
- competing or conflicting views of the goals teachers should pursue in their work.

I have previously noted there are few comparable investigations of university teachers' workplace learning in the literature. I therefore proposed that it is valid and helpful to refer to Hodkinson and Hodkinson's study because, in the terms of the workplace learning literature a strong case can be made for provisionally assuming that school and university teaching are very similar *working practices*. I further argued that, because they apparently engage in similar working practices, it is reasonable to provisionally assume there will be close similarities between the workplace learning of school and university teachers. In the third section of this chapter I briefly analysed three research reports which support these assumptions.

Those reports conclude the departments and other similar sub-units of the university are the primary workplaces of academics generally and academic teachers in particular. Each of these local workplaces is described as having distinctive, complex, dynamic socio-cultural practices which are co-constructed by the academics who participate in them The factors observed to influence the particular character of these practices are very similar to those identified in the study of schoolteachers analysed above. Thus these reports indicate some close similarities between the working practices of university and school teachers. I think it is reasonable, therefore, to provisionally assume that workplace learning will also be similar in the two occupations. Furthermore, since the workplace learning of school teachers is generally very similar to that of people in other occupations, it is also reasonable to provisionally assume the same will be true in the case of academic teachers. It follows that an analytical perspective which satisfies the general criteria identified above is likely to prove valid in the case of university teaching. As I have previously indicated, in Chapter 4 I shall argue that cultural-historical activity theory does satisfy these conditions. Therefore it has the potential to provide the basis of a comprehensive, systematic and coherent analytical perspective on academic teachers' workplace learning.

Finally, Hodkinson and Hodkinson's research also offers useful guidance with regard to the general character of the case-study that is discussed in subsequent chapters. For it indicates that small-scale, qualitative, ethnographic-style case-studies comprising data derived from documents, observations and interviews (2005) can provide the basis for a fruitful investigation of teachers' workplace learning.

Chapter 4
The concepts and principles of cultural-historical activity theory, as it is represented in the work of Engeström and his co-authors

Introduction

In Chapter 2 I argued that the prevailing *rational-technical* and *constructive-interpretive* perspectives cannot provide a comprehensive, coherent analytical account of academic teachers' workplace learning; therefore, it is necessary to seek alternative perspectives. In Chapter 3 I drew on an analysis of the workplace learning literature, including a study of secondary-school teachers, and on research into the work of university academics and academic teachers, to identify a small set of criteria which I proposed a more appropriate perspective must satisfy. I argued it must take full account of the historical, social, cultural and individual dimensions of workplace learning. Therefore it must incorporate all the significant factors of working activities identified in Chapter 3: their history; goals; social relations; division of labour; cultural values and cultural resources, together with the biographies and dispositions of the individuals involved. Moreover, it must offer a coherent, systematic account of the complex, reciprocal relations between those factors. It must also locate individual practices and learning within the larger communal practice of the workgroup in which individuals participate, collaborate, negotiate and contest. Hence, it must adopt as its primary unit of analysis a super-individual, communal practice which is more than a simple aggregate of individual practices, and it must account for the ways in which this communal practice is reproduced and changed.

Currently, two analytical perspectives in particular are widely adopted in the literature concerned with workplace learning and with socio-cultural accounts of learning more generally (Edwards, 2005; Fuller et al, 2005). The first is cultural-historical activity theory (Activity Theory) which has been developed in particular by Engeström and his collaborators (Engeström, 1987; 1990; 1992; 1993; 1994; 1999a, 1999b; 2000a; 2000b; 2001; Engeström et al; 1995; Engeström and Middleton, op. cit.; Engeström et al, 1999; Cole and Engeström, op. cit.). The second is the perspective on 'situated learning' developed by Lave and Wenger (op. cit.) in which the idea of learning

through 'legitimate peripheral participation' plays a central role. Both perspectives adopt a super-individual unit of analysis: *'the activity system'* and the *'community of practice'* respectively. Both also give attention to the significant factors of workplace learning identified above, and to their complex, reciprocal relations. Nonetheless, there are several related reasons for proposing that Activity Theory is more likely to provide the basis for a robust comprehensive perspective on university teachers' workplace learning. [12]

Firstly, although Lave and Wenger's underlying aim is to develop a comprehensive theoretical account of learning as a socio-cultural process, their main preoccupation is a detailed analysis of how novices learn to become full participants in the characteristic practices of particular occupational (and other) 'communities' (p. 29). The communities they refer to are largely stable and coherent, and their practices appear to change primarily through a process of gradual adaptation as one 'generation' follows another (Fuller et al, op. cit, p.53). Put another way, Lave and Wenger's chief concerns are 'vertical' learning (that is, the process by which individual novices learn to carry out the 'higher functions' of proficient, experienced practitioners) and the nuanced reproduction of practice. [13]

In contrast, Lave and Wenger show relatively little interest in the learning of experienced practitioners, or the factors other than their interactions with novices which might motivate changes in their practices. In particular, they pay little attention to learning that occurs when experienced and proficient practitioners encounter problems, challenges and demands in their work which require them to change their practices, sometimes in radical or innovatory ways – introducing or creating new cultural resources in the process. I noted in previous chapters that coping with

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[12] My purpose here is to briefly indicate the reasons for preferring Activity Theory, not to provide a detailed, comprehensive critique of the ideas of 'legitimate peripheral participation' and 'community of practice'. For developed critiques, see Edwards (op. cit.) and Fuller et al, (op. cit.).

[13] Because the term 'reproduction of practice' is potentially misleading, I should perhaps emphasise here that Lave and Wenger (op. cit.) do not propose socio-cultural practices are reproduced in a deterministic manner. Rather, they view the relation between individual and communal as dialectical.

frequent, rapid change is an inherent feature of work in contemporary universities. However, Lave and Wenger seem to attach only secondary importance to this aspect of workplace learning, for they observe that "Learning only partly – and often incidentally – implies being able to be involved in new activities, to perform new tasks, to master new understandings" (ibid, p.53). Their concern lies less with the goals, activities and cultural resources of working practices than with the social structures and relations in which they have meaning; hence they define learning primarily in social terms, as "an evolving form of membership" (ibid). Moreover, because their chief concern is the process by which novices become full "social members" of the community (ibid), their attention is primarily given to relations between apprentices and masters, or 'newcomers' and 'old timers'.

Secondly, with the possible exception of U.S. Navy quartermasters, the communities of practice to which Lave and Wenger refer are not located within large, complex organisations of a kind similar to universities. Nor are they subject to the direct influence of organisational and governmental policies and regulations, as the work of university lecturers is reported to be. Consequently, Lave and Wenger give little attention to the role played in workplace learning by institutional social structures and relations, or by organisational and governmental requirements. The potential importance of these factors generally and in relation to teachers in particular was established in previous chapters and is further emphasised by Fuller et al (op. cit.). Referring to five studies of workplace learning in complex contemporary organisations, they report that "organisational structures and the working of power relations within the organisation were of central significance in determining the existence of communities of practice, their nature and their boundaries" (p. 63). Moreover, they add that "many of the forces responsible for the on-going development of the communities we studied came from external pressures, in the wider organisations where they were located, and from national and even global systems" (ibid, p. 64). The role of such forces in workplace learning is a prominent theme in the case-study discussed in Part Two of the thesis.

Compared with Lave and Wenger's analysis, Activity Theory provides a more coherent, systematic account of all the significant factors of workplace learning referred to in Chapter 3 and the complex, dynamic relations between them. Consequently, it is able to offer a correspondingly more systematic account of how changes in practices occur, including the role played by influences external to the activity system, In this regard it is notable that in Engeström's work Activity Theory has been largely developed and evaluated in the context of contemporary western European healthcare services. That is, in the context of complex organisations where working practices are subject to institutional and governmental influence. Moreover, Engeström's research has often studied how experienced workers develop new practices and adapt or create new cultural resources in response to complex changes in their working circumstances (see, for example, Engeström, 1993; 2000a; 2000b; 2001; Cole and Engeström, op. cit.). Activity Theory also takes a more formally differentiated view of social structures and relations, identifying the 'community of practice', 'division of labour' and socio-cultural 'rules' which regulate social relations and interactions as distinct constituents of working activities. This provides the potential to account for the exercise of power in contemporary organisations like universities where, as Fuller et al (op. cit.) indicate, it may be exercised in ways that are more complex and involve greater social 'distances' than those which are characteristic of apprentice-master relations. Moreover, third generation Activity Theory specifically draws attention to relations between multiple, intersecting activity systems. Thus it encourages recognition that, in complex organisations, the work of individuals is likely to involve contact between, or participation in several closely-related activity systems and communities.

Thirdly, it is sometimes argued that the definition of the 'community of practice' offered by Lave and Wenger (op. cit.) is rather uncertain or imprecise (for example, Hodkinson and Hodkinson, 2003e). In Activity Theory the notion of 'community' can be similarly criticised, but community is one element of the activity system, whereas in Lave and Wenger's account of situated learning it is the central concept and primary unit of analysis.

For these reasons, I concluded that Activity Theory was more likely to provide the basis of a comprehensive, systematic, coherent analytical perspective on university teachers' workplace learning. Activity Theory constitutes a descriptive and explanatory framework of concepts and principles (Bannon, 1997; Nardi, 1996) which has evolved through three generations of conceptualisation and research (Engeström, 2001). My main purpose in this chapter is to analyse these concepts and principles. Engeström has been the most influential exponent of Activity Theory during the last two decades. So, in my analysis, I shall draw primarily on his account of the historical development of Activity Theory. Engeström frequently provides very concise and precise definitions and explanations of key ideas in Activity Theory. It is difficult to further summarise these, while re-presenting them serves little purpose and risks losing some of the precision. Therefore, at certain points in the analysis, it will be necessary to quote Engeström's definitions and explanations quite extensively.

The chapter comprises four main sections. In the first three I set out the development of the main concepts and principles of Activity Theory through three generations. In the final section I briefly consider how we might identify activity systems in the context of academic teaching and the level at which they might be constituted.

Before I begin, however, I should explain that in the first section I shall briefly analyse the concepts and principles developed by Vygotsky (1962; 1978); Leont'ev (1978) and Il'enkov (1977; 1982) during what Engeström (2001) describes as the first generation of Activity Theory. The conceptual and theoretical similarities and differences between the work of Vygotsky and Leont'ev are both complex and a matter of dispute. My analysis is based on Engeström's account of their contributions to the development of Activity Theory (Engeström 1999a; 2000a; 2001; Cole and Engeström, op. cit.). While I believe this analysis provides a clear summary of these contributions, it is not intended to offer a comprehensive, critical account of the work of either author. Accounts of this kind, including discussions of the similarities and differences referred to above, are provided by Daniels (2001) and Kozulin (1999).

1 First-generation Activity Theory

First-generation Activity Theory derives in particular from the work of Vygotsky and Leont'ev. Drawing inter alia on Hegel and Marx, their joint thesis is that "the structure and development of human psychological processes emerge through culturally mediated, historically developing, practical activity" (Cole, 1996, p108).

Vygotsky: culturally-mediated, object-oriented activity

Vygotsky's (op. cit.) concept of cultural mediation is a keystone of Activity Theory (Engeström, 2001). People, Vygotsky asserted, interact with an environment that has been endowed with cultural and social meaning through the history of human activity. Consequently, their interactions with the environment are not immediate, but *culturally and socially mediated*, and their actions are not oriented to natural stimuli but to culturally and socially constructed '*objects*' (Daniels, op. cit; Kozulin, op. cit.).

Acts of thought, Vygotsky proposed, are a function of people's participation in particular culturally-mediated activities, and in the social interactions that are constituents of those activities. He identified three main means or agents of mediation: *symbolic tools*; *material* or *technical tools*, and *other people*, who provide access to and model the use of such tools (Kozulin, pp.3 and 62-4). Material and symbolic tools derive from and have meaning in the activities of cultural groups. Thus they are cultural and social in character. They are also historical. As the products of past socio-cultural activity, they embody the inherited learning and practices of previous generations.

Vygotsky assumed that individuals learn to modify and control their acts of thought and behaviour primarily by means of symbolic tools; hence, he referred to these as 'psychological tools'. They include:

> "*language, various systems for counting; . . . writing; schemas; diagrams, maps and mechanical drawings; all sorts of conventional signs*" (Vygotsky, 1960, pp136-7; cited in Daniels, op. cit. p.15).

The primary purpose of material tools is to bring about changes in other objects, but they have an indirect influence on acts of thought because they presuppose collective use, interpersonal communication and symbolic representation (Kozulin, op. cit., p62).

Vygotsky observed that the process of learning to regulate one's thoughts and behaviour through the internalisation of cultural tools begins externally, "on the social level" with the individual's participation in purposeful, or object-oriented social activities, and in the use of the specific tools, or artefacts that are constituents of those activities. Thus thinking, or "all the higher (psychological) functions", originates "as actual relations between human individuals" (Vygotsky, 1978, p. 57).

Their participation in collaborative activities creates zones of proximal development for individuals, which Vygotsky defines as:

> *"The distance between actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers"* (1978, p. 86).

Learning is therefore regarded by Vygotsky as a fundamentally socio-cultural process, the course of which is directed by the particular activities and cultural tools available to historically specific individuals. However, the internalisation of cultural tools, as Vygotsky conceives it, is not a deterministic or unidirectional process. He emphasises that internalisation enables individuals to become the active agents of their development, gaining self-control of thought and action (1962; 1978). Moreover, cultural tools are 'bi-directional' (Cole and Engeström, op. cit.): they are the means by which the individual acts on and is acted upon by the historical, cultural and social environment. Furthermore, while tools enable people to adapt and direct their thoughts and actions, people also often adapt tools in the course of their use, or invent new ones. In part because the everyday meanings attached to the term 'tools' may be distracting, Cole and Engeström (op. cit.) suggest the phrase 'cultural artefacts' be used instead. In the previous chapter I used the term 'cultural resources' with much the same meaning. To avoid confusion, I shall henceforth follow Cole and Engeström.

To summarise, Vygotsky proposed that activity brings individuals (subjects) into relation with purposes, tasks and problems in the environment (objects). This relation is mediated by artefacts that have a cultural, social and historical nature. Object-oriented, artefact-mediated activity has a bi-directional or dialectical character: it occasions changes in the environment and in the subject. Thus, object-oriented, artefact-mediated activity is the locus of learning.

Vygotsky was largely preoccupied with individual culturally-mediated actions, the objects of those actions and their outcomes. This was his primary unit of analysis. His consideration of social relations between 'the subject' and other people was largely confined to their 'inter-psychological' character; that is, to the function of other people in providing access to and modelling cultural tools, albeit in the context of joint activities. Leont'ev's particular contribution to Activity Theory was to expand the primary unit of analysis, subsuming individual actions within the unit of joint, collective activity; elaborating the notions of object and goal, and incorporating an account of social relations in the 'activity system'.

Leont'ev: collective, object-oriented activity

The concepts and principles Leont'ev contributed to first generation Activity Theory are, in the main, succinctly introduced and summarised in his frequently quoted example of tribal hunting (op. cit. pp.62-3). Tribal hunting is a joint, collective activity. Individual members and sub-groups of the hunt have diverse responsibilities and carry out diverse actions; thus there is a division of labour. These diverse actions each have their particular goals. But the specific forms which actions and goals take are likely to change as the hunt progresses, and certainly will change from one episode of hunting to another. We might say there is also a collective goal, which is the kill. However, the socio-cultural need that gives tribal hunting its ultimate motive is the need for food and clothing in order to survive. The hunters' quarry is the object towards which the activity is oriented. The activity system of hunting 'generates' the actions of the participants and it is realised by means of their actions (Helsinki, 2005,

section 2, p.4) [14] but it is more than the simple aggregate of these actions. Or, as Helsinki puts it,

> "*activity is not reducible to actions. Actions are relatively short lived and have a temporally clear cut beginning and end. Activity systems evolve over lengthy periods of socio-historical time; often taking the form of institutions or organisations*" (ibid).

Although it is not explicit in Leont'ev's description, the joint, collective activity of hunting is mediated by a variety of material and symbolic *cultural artefacts*, and also by communal conventions or *'rules'* concerning the behaviour of those who participate. These rules, together with the division of labour, function to organise and regulate the actions of the participants.

In summary, then, Leont'ev follows Vygotsky in proposing that joint, collective activity is the basis of human cultural and social life, and that consciousness and meaning are formed in joint, collective activity. Specific activities are motivated by particular cultural and social needs, and are oriented towards particular objects:

> "*(t)he main thing that distinguishes one activity from another . . . is the difference between their objects.* (Leont'ev, op. cit., p. 62)

In addition to distinctive *objects* and *motives*, activities have correspondingly distinctive *divisions of labour, social rules; cultural artefacts* and *communities of actors or agents*. Each of these has a mediating function. Thus each activity is "a collective systemic formation that has a complex mediated structure" (Helsinki, op. cit., pp3-4) and is organised or coordinated by its object and motive.

Drawing on his analysis of the hunt, Leont'ev (op. cit.) proposed a hierarchical structure of activity that brings into a systematic relation *activity, actions* and *operations*. A*ctivity* is oriented or "directed" towards *a collective object* and *motive*. In contrast, *individual or group actions* are "aroused" by the motive of the activity, but

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[14] Helsinki (2005) refers to an anonymous document on the website of the Center for Activity Theory and Developmental Work Research at the University of Helsinki. The style and content of the document indicate that the author is almost certainly Engeström, who is Director of the Center (c.f., Engeström, 2000a; 2001). However, because this cannot be verified, quotations from the document are attributed to Helsinki (2005).

are directed towards "*conscious goals*" (ibid, p.64). *Operations* "are the means by which action is carried out" (Leont'ev, 1972/1981, p.63, cited by Daniels, op. cit. p.87). With time and familiarity, many operations lose their conscious, goal-oriented character and are incorporated into other larger actions; thus they become routine or "automatic". Moreover, some operations become literally mechanical, the function of a machine (Leont'ev, 1978, p.66).

Il'enkov: contradictions and continuous development

Il'enkov (op. cit.) proposed that internal contradictions were the engine of change and development in activity systems. Detailed descriptions of the derivation and functions of contradictions are provided by Helsinki (op. cit.) and Engeström (2001), and these are summarised below.

2 Second-generation Activity Theory

Engeström (1987) synthesised these various contributions to provide a systematic account of the activity system which expands Vygotsky's original analytical unit, bringing individuals, their actions and learning into relation with the practices of the social community. With this expansion, the activity system becomes the primary unit of analysis and comprises seven main elements: the subject; object; mediating cultural artefacts; rules; community; division of labour, and outcome (Engeström, 1987, p.78; 2001, p.135). (Because it can be difficult to appreciate the very broad variety of phenomena held to function as mediating cultural artefacts in Activity Theory, *Appendix 1: A note on the concept of mediating cultural artefacts* summarises Ratner's (2000) helpful attempt to construct a comprehensive typology of cultural phenomena.)

Elaborating on these terms, Helsinki (op. cit.) explains that:

> "... *the subject refers to the individual or sub-group whose agency is chosen as the point of view in the analysis. The object refers to the 'raw material' or 'problem space' at which the activity is directed and which is moulded and transformed into outcomes with the help of physical and symbolic, external and internal mediating (artefacts . . . The community comprises multiple individuals and/or sub-groups who share the same general object and who construct themselves as distinct from other communities. The division of*

labour refers to both the horizontal division of tasks between the members of the community and to the vertical division of power and status. Finally the rules refer to the explicit and implicit regulations, norms and conventions that constrain actions and interactions within the activity system" (section 2, p. 2, brackets added).

Engeström (2001) further explains that "object-orientated actions are always, explicitly or implicitly, characterised by ambiguity, surprise, interpretation, sense making and potential for change" (p. 135)

Helsinki (op. cit) offers a helpful concrete example of an activity system:

" Consider the work activity of a physician working at a primary care clinic. The object of his work is the patients with their health problems and illnesses. The outcomes include intended recoveries and improvements in health, as well as unintended outcomes such as possible dissatisfaction, non-compliance and low continuity of care. The (artefacts) include such powerful tools as X-rays, laboratory, and medical records - as well as partially internalized diagnostic and treatment-related concepts and methods. The community consists of the staff of the clinic, distinguished from other competing or collaborating clinics and hospitals. The division of labour determines the tasks and decision-making powers of the physician, the nurse, the nurse's aide, and other employee categories. Finally, the rules regulate the use of time, the measurement of outcomes, and the criteria for rewards" (section 2, p.3, brackets added).

In this example the activity system of the primary care clinic is described from the viewpoint of a subject/agent who is a physician. However, "the community consists of the staff of the clinic" and Helsinki (op. cit.) emphasises that this community (and thus the activity system) comprises multiple points of view, histories, interests and voices:

"The same primary health care activity will look quite different if we take the point of view of another subject in the community, for instance a nurse. Yet both subjects share the overall object - the patients and their health problems. An activity system is always heterogeneous and multi-voiced. Different subjects, due to their different histories and positions in the division of labour, construct the object and the other components of the activity in different, partially overlapping and partially conflicting ways" (ibid).

Because they have a complex, heterogeneous, multi-voiced nature, activity systems are restless, dynamic formations, characterised by "constant construction and renegotiation" (ibid). Helsinki observes there is,

> " incessant movement between the nodes of the activity. What initially appears as object may soon be transformed into an outcome, then turned into an (artefact), and perhaps later into a rule . . .. On the other hand, rules may be questioned, reinterpreted and turned into new tools and object" (ibid).

In the first and second generations of Activity Theory, communal socio-cultural development was viewed primarily as a 'vertical' process of scientific and technical evolution or advancement from primitive to modern. Individual development was regarded as a corresponding process of movement from lower to higher psychological functions through increasing engagement with and appropriation of available cultural artefacts. Cole (1988), amongst others, argued that these assumptions revealed "deep seated insensitivity" towards "cultural diversity" (cited in Engeström, 2001, p.135). Third generation Activity Theory therefore was developed in response to "questions of diversity and dialogue between different traditions or perspectives", and its aim is to describe and explain "dialogue, multiple perspectives, and networks of interacting activity systems" (ibid).

3 Third-generation Activity Theory

the expanded model: interacting activity systems

In third-generation Activity Theory, Engeström's earlier model is expanded to include a minimum of two interacting activity systems (Engeström, 2001). In his explanation of this third model Engeström (2001) observes that two such interacting systems may share or jointly construct the object of their activity (p. 136), adding that "The object of activity is a moving target, not reducible to conscious short-term goals" (ibid). In the previous section, I noted Helsinki's comment that "what initially appears as object may soon be transformed into an outcome, then turned into an (artefact), and perhaps later into a rule". Helsinki (op. cit) also asserts that individual subjects are often not conscious of the object and motive of collective activity (section 2, p.3). Taken

together, these comments appear to invest the object of activity with a rather elusive quality. It is important, therefore, to note that Engeström (2000a) provides a helpful 'definitive' description of the *object and motive* of healthcare practice, and of the relation between the general object and specific patients, which I shall quote in detail below when considering the object of university teaching and the identification of activity systems in universities.

the underpinning principles of third-generation Activity Theory

Engeström (2001) proposes that current, third-generation Activity Theory can be summarised with "the help of five principles" (p. 136): The first four are summarised below; the fifth in the section that follows.

1   the *prime unit of analysis* is a historically evolving, collective, artefact-mediated and object-orientated activity system, although each system must be seen in its network relations to other activity systems (2000a, p964; 2001, p136).

Activity systems realise and reproduce themselves by generating *operations*, and individual or group goal-directed *actions*. These are relatively independent but subordinate units of analysis, which we only fully understand when we interpret them "against the background of entire activity systems" (2001, p.136).

2   "An activity system is always **a community of multiple points of view, traditions and interests**" and thus is always "multi-voiced". This multiplicity of voices is a source of dynamism:

> "The division of labour in an activity system creates different positions for the participants, the participants carry their own diverse histories, and the activity system itself carries multiple layers and strands of history engraved in its artefacts, rules and conventions."

The multiple voices in activity systems are "a source of trouble and a source of innovation, demanding actions of translation and negotiation" (2001, p. 136).

3 *Activity systems are historical formations.*

"Activity systems take shape and get transformed over lengthy periods of time. Their problems and potentials can only be understood against their own history." We need, therefore, to study the "local" history of the activity and its objects, and also the history of the theoretical ideas and tools that shape (are "employed and accumulated in") the local activity (2001, pp. 136-7).

4 *Contradictions* are the principal source of changes and development in activity systems.

"Contradictions are historically accumulating structural tensions within and between activity systems", which Engeström describes as being different from problems. Although contradictions generate disturbances and conflicts, they also lead to innovative attempts to change the activity (2001, p.137).

Helsinki (op. cit.) elaborates and illustrates the principle of contradictions as follows:

> "An activity system . . . interacts with a network of other activity systems. For example, it receives rules and instruments from certain activity systems (e.g., management), and produces outcomes for certain other activity systems (e.g., clients). . . However, such external forces are not a sufficient explanation for surprising events and changes in the activity. The outside influences are first appropriated by the activity system, turned and modified into internal factors. Actual causation occurs as the alien element becomes internal to the activity. This happens in the form of imbalance. The activity system is constantly working through contradictions within and between its elements. In this sense, an activity system is a virtual disturbance- and innovation-producing machine" (p.4-5).

Drawing on Il'enkov (1977), Helsinki (op. cit.) observes that the inner contradictions of an activity system are the source of both its dynamism and the forms of its development: "new qualitative forms of activity emerge as solutions to the contradictions of the preceding form. Engeström refers to the process whereby these innovations and new forms of activity emerge as '*expansive learning*'.

expansive learning and transformation

Within Activity Theory, individual and communal learning are assumed to be analogous processes understood primarily according to the ideas established by Vygotsky, and discussed above, especially the principle of *externalisation-internalisation*. However, Engeström's consideration of communal learning extends Vygotsky's original account by the addition of the principles of *contradictions* and *expansive transformation*. Engeström (1994) offers the following description of learning as a collaborative, cultural and historical process:

> *"Learning is meaningful construction and creative use of intelligent cognitive tools, both internal mental models and external instruments. Learning is also participation, collaboration and dialogue in communities of practice. Finally, learning is also criticism of the given, as well as innovation and creation of new ideas, artefacts and forms of practice"* (p.1)

Drawing on Bateson (1972), Engeström has elaborated this general definition to identify three "types" (also "levels" and "orders") of learning, which are differentiated by process; relationship between learner(s) and context, and outcome(s). His description and naming of these varies in numerous iterations over two decades. The schematic summary below synthesises the descriptions in Engeström 1987, 1994, 1999b, 2001, 2004 and Daniels et al, 2005, and refers to *adaptive, investigative and expansive* learning. The first term seems to have been devised by Young and Lucas (1999); the others by Engeström (1994).

Type of learning	Process	Relation between learner and context(including object/outcome)	Outcome
adaptive	gradual acquisition and internalisation of extant knowledge and skills embedded in an established activity/ given context (2001/2004)	extant context and practices taken as given	participation through reproduction of the given "copying of readily available correct behaviours" (1994, p16)
investigative	insightful solution of discrete, given problems in stable contexts, through "trial and error" or "invention" and "experimentation." (1987, Ch3, pages not numbered)	development of artefacts or forms of participation which can be assimilated without radical change in extant context or practices	discovery and change within the confines of 'the given' "The creation of new instruments . . . is potentially expansive - but only potentially" (1987, Ch3, pages not numbered)
expansive	critique and innovation "the problem or the task itself must be created" (1987, Ch3, pages not numbered) "criticism of the given, as well as innovation and creation of new ideas, artefacts and forms of practice" (1994, p1) "learning what is not yet there" (2001, p270) "essentially a collective endeavour" (2001, p9)	The sense and meaning of the extant context and practices are radically challenged and transformed (2001, p9)	resolution of conflicts not achievable within the confines of the given a radical expansion of the object of activity for all parties" (2001, p20) "new forms of work activity" (2001, p9)

Figure 1: The characteristics of adaptive, investigative and expansive learning

It is important to note that Engeström views "Learning III . . . or learning by expanding" as an inevitable constituent of human experience, i.e. as naturally occurring. He describes it as the "bread and butter of human development . . . gradual in form but profound in substantial effects" and the means by which "the objects and structures of the life-world (themselves understood as activity systems) have been and are created by human beings..." (1987, Ch3, online, no page numbers). He also appears to insist that expansive learning follows what he describes in various papers as 'an ideal-typical sequence of epistemic-actions in an expansive cycle' (e.g. 2001), which he takes to "define . . . the basic unit of expansive learning" (1987, Ch3). The sequence of actions is:

1   questioning

2   analysing the situation – tracing the origin and evolution of the problematic situation and constructing a picture of its inner systemic relations, including inner contradictions

3   modelling the newly found solution

4   examining the new model – to grasp its dynamics, potentials, limitations

5   implementing the new model

6   reflecting on the process

7   consolidating the new practice (1999b, p383-4)

This sequence, Engeström argues, depicts "the dialectics of ascending from the abstract to the concrete". Following the phases of *questioning* and *analysing*:

> "*A new theoretical idea or concept is initially produced in the form of an abstract, simple explanatory relationship, a 'germ cell'. This initial abstraction is step-by-step enriched and transformed into a concrete system of multiple, constantly developing manifestations. In an expansive learning cycle, the initial simple idea i transformed into a complex object, into a new form of practice. At the same time, the cycle produces new theoretical concepts - theoretically grasped practice - concrete in systemic richness and multiplicity of manifestations*" (1999c, p5 online).

In his development of third generation Activity Theory, Engeström has tended to focus on communal *expansive* learning, arguing it is the form of learning increasingly required in contemporary workplaces (1994) but least understood by "standard learning

theories" (2001, p138). These theories, he asserts, tend to focus on processes of learning where what is to be learned already exists in a stable, reasonably defined form, and where there is a 'competent teacher' (ibid). But learning in work organisations is often of a different kind:

> "People and organisations are all the time learning something that is not stable, not even defined or understood ahead of time. In important transformations of our personal lives and organisational practices, we must learn new forms of activity which are not there yet. They are literally learned as they are being created. There is no competent teacher. Standard learning theories have little to offer if one wants to understand these processes" (ibid, p.137-8). [15]

In Chapter 1, I noted that academic teachers, like workers in other occupations, are increasingly required to develop new working practices in response to rapid, complex, economic, scientific, technological and social changes in their working circumstances. It seems reasonable to provisionally assume, therefore, that this focus on *collaborative* innovative learning will prove apt in the case of academic teachers. Moreover, it is this form of learning which I have previously argued is most neglected by the traditional analytical perspectives on academic teachers' learning and the development of their practices.

The fifth underpinning principle of third generation Activity Theory is as follows:

> 5 *An activity system may be expansively transformed.* The object of expansive learning activity is the entire activity system. Expansive learning at work produces new forms of work activity (Engeström, 2001, p.139).

Engeström (2001) concludes that qualitative transformations of activity systems occur over relatively long cycles:

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[15] It might be argued that Engeström's criticism here is aimed primarily at theories of learning which are broadly consistent with the technical-rational perspective on learning, and that theories based on a constructive-interpretive perspective do attempt to account for innovative learning. However, as I have argued in preceding chapters, the constructive-interpretive perspective is highly individualistic. Consequently, while it seeks to understand how individuals learn and change their practices, it does not offer a satisfactory account of the ways in which collective, jointly constructed and enacted working practices change. Therefore, Engeström's general criticism is valid.

"(a)s the contradictions of an activity system are aggravated, some individual participants begin to question and deviate from its established norms. In some cases, this escalates into collaborative envisioning and a deliberate collective change effort. An expansive transformation is accomplished when the object and motive of the activity are reconceptualised to embrace a radically wider horizon of possibilities than in the previous mode of the activity" (pp.136-7, brackets added).

Activities which become institutionalised, particularly working activities, often appear to have a robust and enduring character. However, close examination reveals that "transitions and reorganisations are constantly going on within and between activity systems as a fundamental part of the dynamics of human evolution." Consequently, "equilibrium is an exception and tensions, disturbances and local innovations are the rule and engine of change" (Cole and Engeström, op. cit., p.8-9). The process of *externalisation* occurs when the tensions and disturbances generated by contradictions within the activity system are fore-grounded and attempts are made to resolve them. When these tensions and disturbances cannot be resolved, or contained within the confines of the contexts and practices in which they have been generated, an *expansive transformation* of the activity system is required. Individual participants begin to question and deviate from the norms. This process spreads and escalates until there is a deliberate, collective effort to change. Expansive learning occurs when this effort leads to a transformation of the activity system, marked by a reconceptualisation of the object and the emergence of new working practices. Once resolutions are effected and consolidated, they become dispersed (distributed) across the activity system through the process of *internalisation*. It seems therefore that two conditions must be fulfilled for expansive transformation to occur. Firstly, the circumstances must permit expansive transformation, that is, it must be possible. Secondly, the community of participants must be able to either appropriate or create new forms of the main elements or constituents of the activity.

Thus learning within activity systems is analogous to individual learning in that it typically moves through a cycle of two alternating forms: externalisation and internalisation but, in the case of the activity system, this cycle generally occurs over relatively lengthy periods of time. Extending Vygotsky's notion of an ontogenic zone of

proximal development, Engeström (2001) proposes that "(a) full cycle of expansive transformation may be understood as a collective journey through the *zone of proximal development* of the activity", which is defined in this case as: "the distance between the present day actions of the individuals and the historically new form of the societal activity that can be collectively generated" (pp. 136-7). Engeström also proposes that expansive learning is best understood as a process of "horizontal or sideways learning and development" which is "complementary" to, but different from the process of 'vertical' learning that was the typical focus of Vygotsky's research and is also the main preoccupation of standard learning theories (ibid, p.153).

In concluding this brief analysis of expansive learning, it is important to note that, while it is a joint, collaborative process, Engeström (2001) emphasises it begins with individual exceptions or deviations from the norm. Subsequently, "the new form is . . . taken over by others, becoming in time a new universal norm. . . " (Il'enkov, 1982, pp83-84; cited in Helsinki 2005, section 2, p6).

4 Activity systems and university teaching

There is some uncertainty in Engeström's discussions regarding the scale of activity systems and their relations with organisational structures. So, before concluding this chapter, I need to briefly consider the level at which specific activity systems might be constituted within academic teaching, because this is an important consideration in subsequent chapters.

In Activity Theory, *activities* are held to be motivated by the transformation of an *object* into *outcomes* that satisfy a need or needs. Participants in the activity use internal and external tools (*mediating cultural artefacts*) to 'work on' the *object* and achieve the *outcome(s)*. The *object* "represents and 'explains' the collective *motive* of the activity" and the kind of *outcomes* that are collectively pursued (Toivianon, 2007, p2). Activity systems therefore are distinguished by their objects. As an example Engeström observes that:

"The object of medical work is the patient, with his or her health problem or illness. . . . Without patients the activity would cease (2000, p. 964).

He adds:

> *A collective activity system is driven by a deeply communal motive. The motive is embedded in the object of the activity. The patient as object of medical work is a generalized patient that carries the cultural motive of fighting illness and promoting health. At the same time, each specific patient brings the object to life and embodies the motive in a unique way. . . The object and motive give actions their ultimate continuity, coherence and meaning... "* (ibid).

One interpretation of these remarks is that medical work involves a single, very large-scale activity system constituted at a national, international or even global level. On other occasions, however, Engeström offers rather different views. For example, in one paper (Engeström, 1999b) he asserts that *organisational* or *corporate* transformation is the *function* of expansive learning, rather than its *incidental* outcome (pp385-6). Since he proposes that expansive learning transforms the *activity system*, this assertion appears to imply that he takes the activity system to be synonymous with the organisation or corporation, and it is notable that in some of his studies activity systems appear to coincide with quite large organisational or administrative entities within healthcare systems (2000b; 2001).

However, as I noted above, Helsinki (op, cit.) observes that "the *community* comprises multiple individuals and/or subgroups who share the same general object and who construct themselves as distinct from other communities". This seems to mean that it is possible for quite small groups of medical workers to constitute separate activity systems, if the members of each group 'construct' themselves as distinct from other communities' of medical workers, even though all of the groups share the object of the generalised patient. It is difficult, however, to locate a definitive account in Engeström's work of how groups 'construct' themselves as distinct from other communities, and thus as a separate activity system at a local level. Moreover, in at least one paper (2001) he refers to the "local history of the activity" and uses the terms "the local activity", "the

activity" and "activity system" without indicating whether we are to take these as synonyms, or references to different 'entities'(pp136-7).

The suggestion that activity systems may often be quite small would be consistent with the conclusion drawn in the studies of workplace learning analysed in the preceding chapter. For I noted that these argue strongly for a unit of analysis at the level of the *local* workplace and workgroup, or community of working practice, intermediate between the organisation and the individual – often at the level of the 'department'. In particular, Hodkinson and Hodkinson's (2005) study of secondary-school teachers identified the subject-department as the primary workplace. Their analysis indicates that each department comprised a small group of teachers who viewed themselves as a distinct *community*, and had a distinctive *division of labour* and *rules*. Considered in the light of the concepts and principles of Activity Theory, these distinctive elements suggest each subject department comprised a separate activity system constituted on a small scale at a local level within the secondary school. Moreover, there is further support for this assumption if we consider the object of the secondary-teachers' work.

Following Engeström's example of medical work, we can propose that the *object* of teaching work is the generalised student and her or his learning, for without students the activity would cease. What then is the "deeply communal" *motive* or need that the student embodies, and secondary-teaching satisfies? Following Vygotsky (op. cit.); Bordieu and Passeron (1977); Williams (1981) and Ratner (op. cit.), we can describe this as the communal need for the re-production of culture broadly conceived, or of cultural phenomena, to serve diverse specific socio-cultural ends. [16] Put another way, it is the need for children to 'acquire' and reproduce the accumulated culture of their social group.

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[16] Williams (op. cit.) uses reproduction in the sense of biological generation "where typically forms – species – are prolonged but in intrinsically variable individual examples" (p. 184). Like Bordieu and Passeron (op. cit.), Williams also acknowledges that the reproduction of culture involves the reproduction of social relations.

Like Engeström's definitions of the object and motive of medial work, these general characterisations initially suggest a very large-scale educational activity system, but it is particularly notable that Hodkinson and Hodkinson's study involved four small *subject* departments: History; I.T.; Art and Music. If we take the History department as an example, we can propose that the *object* of teaching work in that department is brought to life at a given moment by the learning of the specific students with whom the History teachers are working. The *outcome* collectively pursued by the History teachers is the acquisition by those students of (some of) the cultural phenomena (information, ideas, modes of enquiry, procedures, values, attitudes) that distinguish History from other fields of socio-cultural life and historians from people in other social groups. In other words, it is a particular version of the general outcome of cultural reproduction referred to earlier.

To achieve this outcome, the History teachers use a set of internal and external tools, or *mediating cultural artefacts*, to conceptualise and 'work on' the students. Some of these are pedagogic or educational artefacts common either to the work of secondary-school teaching generally or to the particular school in which the History teachers work - for example, curriculum models, assessment regimes, the organisation of time. Other artefacts, however, will be specific to the discipline of History and the work of teaching History. It is likely, therefore, that the working practices of the *communities* of teachers in each of the different subject departments involve the adoption of a distinctively conceptualised *object*, and a distinct *outcome*; set of *mediating cultural artefacts*; *community*; *division of labour* and set of *rules*. Given the presence of these elements, it seems reasonable to provisionally assume that each small subject-group comprises a separate activity system.

The example of the secondary-school subject departments therefore indicates ways in which quite small groups of teachers might 'construct themselves' as distinct from other communities of teachers, and thus as separate activity systems. It is notable in particular that disciplinary artefacts and associated disciplinary identities (History teacher or Historian; Music teacher or Musician) appear to play a significant role in this process.

Given the similarities between school and university teaching as forms of working activity which I referred to in Chapter 3, it seems reasonable to suppose that activity systems in academic teaching may often be constructed in a similar way, and by similarly small communities of academic teachers. It appears likely, then, that the distinctive sets of *cultural artefacts* which comprise the subject expertise of academic teachers will play a major role in the formation of particular activity systems within academic teaching.

Studies of disciplinary cultures and academic identities in universities appear to support this assumption, for they report that discipline or specialist field plays a very significant role in academic work, identity and association (see for example; Becher and Trowler, op. cit.; Henkel, 2000; Becher, 1989). It therefore seems probable that large university departments which comprise a number of disciplines or subjects, Bio-medical Sciences for example, will consist of multiple activity systems constituted at the level of the subject-group. But, given the complex nature of academic disciplines and sub-disciplinary specialisms (Becher, 1994), it is quite likely that a single-discipline department will also comprise numerous activity systems. For example, in a Geography department, different lecturers will teach social, physical or environmental geography. Each of these disciplinary divisions indicates at least one potential activity system. These speculations point to the possibility that the work of teaching in any given university will involve a complex network of numerous interacting activity systems at the level of the subject-group, many of which will be quite small – sometimes comprising as few as four or five people, as do the subject departments in Hodkinson and Hodkinson's study. Put another way, it may be most apt to understand a University as a constellation of activity systems, rather than as the prime analytical unit in its own right.

Summary and conclusions

Cultural-historical Activity Theory comprises a coherent framework of concepts and principles which has been developed, chiefly by Engeström, as a means to enhance our understanding of work, workplace learning and the development of working practices.

Based on Engeström's synthesis and elaboration of ideas drawn from Vygotsky (op. cit.), Leont'ev (op. cit.) and Il'enkov (op. cit.), the main concepts and principles of Activity Theory are as follows:

1   the prime unit of analysis is a historically evolving, collective, artefact-mediated and object-orientated activity system, the main elements of which are the subject; object; mediating cultural artefacts; rules; community and division of labour. (The goals and actions of individuals can only be fully understood in the context of the activity system).

2   an activity system is always a community of multiple points of view, traditions and interests, and this multiplicity is a source of dynamism

3   activity systems are historical formations. (This includes the 'local' history of the activity and its constituents, especially its objects, and the theoretical ideas and tools that shape the local activity, and the participants' own histories.)

4   contradictions are the principal source of changes and development in activity systems

5   an activity system may be expansively transformed. This involves:
- collective effort,
- reconceptualisation of the object
- changes in some or all of the other constituents of the activity system.

Engeström proposes that learning involves the process of externalisation-internalisation and takes three forms. *Adaptive* learning occurs when individuals adapt themselves to the norms of an activity system. It results in the reproduction of established knowledge and behaviour. *Investigative* learning leads to discovery and change which can be accommodated within the confines of the existing activity system. *Expansive* learning results in a radical transformation of the activity system and the emergence of new

working practices. Engeström argues that expansive learning is the form which is increasingly required in contemporary workplaces, for the reasons identified in Chapter 1, and it is least understood by 'standard' learning theories.

In Chapter 3 I identified a small set of criteria which I argued a comprehensive analytical perspective on workplace learning must satisfy. The analysis compiled in this chapter and summarised above indicates that Activity Theory satisfies these conditions. To be specific:

- it conceptualises workplace learning as a complex process that has historical, cultural, social and individual dimensions

- it provides a full account of the historical, cultural and social nature of work and learning, which incorporates all the significant factors of working activities identified in the preceding chapter: their history; goals; social relations; division of labour and cultural artefacts, together with the biographies and dispositions of the individuals involved

- it offers a coherent, systematic account of the complex, reciprocal relations between these factors

- it adopts as its primary unit of analysis a super-individual, communal practice, *the activity system*, which is more than a simple aggregate of individual practices (actions and goals)

- it locates individual practices and learning within the larger communal practice of the activity system in which individuals participate, and it accounts for the relations between the individual and the communal

- it accounts for how communal practice is reproduced and changed.

Therefore it can be provisionally concluded that Activity Theory will provide the basis for a comprehensive, systematic, coherent analytical perspective on academic teachers' workplace learning and its role in the formation of their practices.

In the final section of this chapter I briefly considered how we might identify activity systems in the context of academic teaching and the level at which they might be constituted, because these are important considerations in the case-study. Drawing on

Engeström's discussion of the object and motive of 'medical work', and on Hodkinson and Hodkinson's study of secondary-school teachers analysed in the previous chapter, I considered how small groups of academic teachers might 'construct' themselves as separate local, small-scale activity systems. I suggested this will involve the adoption of a distinctive *object, outcome* and set of *mediating cultural artefacts,* as well as a distinct *division of labour* and set of *rules.* I argued in particular that the distinctive sets of *cultural artefacts,* which distinguish academic disciplines or specialist subjects, and associated disciplinary identities will play a major role in the formation of these activity systems.

In the next chapter I shall describe and justify the design of a case-study, the purpose of which was to investigate the learning of a subject-group of academic teachers, and evaluate the strengths and weaknesses of Activity Theory as an analytical perspective on the data.

PART 2: The workplace learning of the PPG members and its role in the formation of their teaching practices: a case-study from the perspective of Activity Theory

Chapter 5
The design of the case-study: methodology and methods

Introduction

In Chapter 3 I analysed the workplace learning literature to identify a small set of criteria which a comprehensive, coherent analytical perspective on workplace learning must satisfy. In Chapter 4 I analysed the concepts and principles of Activity Theory. I concluded that it satisfies those criteria; therefore we can provisionally assume it will provide an appropriate basis for an alternative perspective on the workplace learning of academic teachers and its role in the formation of their teaching practices. In this chapter I shall describe and justify the design of a research project which had two purposes:

1 to investigate the workplace learning of a subject-group of academic teachers and its role in the formation of their teaching practices

2 to evaluate Activity Theory as the basis of a comprehensive, systematic, coherent analytical perspective on the data.

In summary, the enquiry took the form of a case-study comprising two main stages. The first was the investigation. The design of this stage was informed by the analysis of the workplace learning literature and complementary studies compiled in Chapter 3, particularly:

- the broad epistemological and ontological stances adopted in the study

- the choice of a small-scale, qualitative, ethnographic-style case-study as the research strategy

- the selection of the case of workplace learning to be investigated

- the themes and lines of enquiry that guided the generation of data.

In the second stage, I used the concepts and principles of Activity Theory discussed in Chapter 4 to analyse and interpret the data generated in the first stage. The analysis sought to address three main questions:

1 what are the historical, social, cultural and individual characteristics of the workplace learning of the academic teachers who participated in this study, and how are those characteristics related?

2 what role does workplace learning play in the formation of their teaching practices?

3 what are the strengths and weaknesses of Activity Theory as an analytical perspective on the workplace learning of the university teachers who participated in this study?

The specific principles and concepts of Activity Theory used and evaluated in the enquiry are reiterated below.

As I explained in Chapter 1, the case-study involved 'insider research'. This was a significant factor in the selection of the subject-group which was studied, as will be explained, and the reason why I shall use pseudonyms when referring to the participants and institutional circumstances in which the case-study is located.

1 Methodology

the research strategy: a small-scale, qualitative, ethnographic-style case-study

The research strategy adopted was that of a small-scale, ethnographic-style case-study in which qualitative data were generated by means of observation, interview and document review. In this section I shall explain and justify this strategy.

In Chapter 3, I noted four general conclusions in the workplace learning literature. Firstly, workplace learning is a highly complex, four-dimensional, relational process. Its

significant factors include the history; goals; activities; social roles, relations and interactions; cultural values and cultural resources of the local workplace and work process, together with the biographies and dispositions of the individuals involved. Secondly, workplace learning is historically, socially and culturally specific to particular workplaces and workgroups. Thirdly, working practices and workplace learning typically involve collaboration, dialogue, interpretation, negotiation and contestation. Fourthly, workplace learning is frequently dispersed or distributed across the activities of work; the cultural artefacts involved in those activities and the people who participate in them (the workgroup).

These conclusions indicated that an investigation of workplace learning should be informed by three methodological principles. Firstly, it is most appropriately conducted within what can be broadly described as a socio-cultural constructivist ontological and an interpretative epistemological paradigm (for detailed discussion of both paradigms, see Bryman, 2001; Mason, 1996).

Secondly, workplace learning is most appropriately investigated by means of qualitative data. Typically generated through observation, interview and document review (ibid), such data enable researchers to compile finely grained, richly detailed descriptions of people's experiences (Berg 1989; Geertz, 1973), which in turn facilitate analyses and interpretations of the social and cultural features of those experiences (Dyson and Genishi, 2005; Bryman, op. cit.). More specifically, Evans et al (op. cit) note that accounts of workplace learning are often difficult to elicit. Therefore, it is advisable to use multiple methods of data generation when investigating workplace learning.

Thirdly, the most appropriate unit of study, or unit of analysis, is the local workgroup, located at a level intermediate between the individual and the organisation. However, as I have previously noted, the identification of local workplaces and workgroups in complex organisations like universities is problematic and a significant consideration in this enquiry. This matter will be further discussed below.

Three studies of workplace learning referred to in Chapter 3 provide particular support

for the adoption of these general principles and further guidance regarding the design of

the enquiry. Firstly, Eraut et al (1998) interviewed individuals who worked in diverse

parts of various organisations. Subsequently, the researchers noted the limitations of this

approach and suggested two alternatives would provide greater insight:

1 "case-studies" of individuals that combined interviews with intensive

observation

2 "an ethnographic study of several participants on the same site" (pp. 11-12).

Secondly, the Hodkinsons' investigation of schoolteachers' workplace learning was

conducted by means of small-scale, qualitative, ethnographic-style case-studies, framed

within an interpretive paradigm and incorporating document analysis, observations and

interviews (see, for example, Hodkinson and Hodkinson, 2004; 2005). Their research

reports clearly demonstrate this was an appropriate and fruitful research strategy. I have

argued in previous chapters that schools and universities are generally similar research

contexts in that both are sites of educational work. Therefore, it was reasonable to

conclude that a similar research strategy would also be appropriate and effective in the

case of academic teachers' workplace learning.

This conclusion was further supported by Trowler and Knight (2000), who observed

that:

> "*To date most research (of lecturers' workplace learning) . . . has adopted
> approaches based mainly upon methodological individualism. . . we need
> fine-grained ethnographic studies at the local level to illuminate and
> exemplify the important social processes at work within communities of
> practice in higher education settings.* " (p 40, emphasis and brackets added)

Thus these three studies helped to identify appropriate general methodological

principles and indicated that a small-scale, ethnographic, or ethnographic-style case-

study would be an appropriate strategy for the intended investigation. (The distinctions

between an *ethnographic* and *ethnographic-style* case-study are discussed below.)

However, because my case-study addressed distinct research questions; was set in

distinct organisational circumstances and formed part of a doctoral thesis, the research strategy differed in detail, as is explained below.

In developing the research strategy, it was important distinguish between two types of case-study. In the first, a case is chosen for study on the grounds that it is representative of a particular category of cases, and one purpose of the investigation is to establish generalisations about the wider population which it represents (Bryman, op. cit.; Cohen and Mannion, 1994). In the second type, the case-study is adopted as the strategy for investigating a local *singularity* (Bassey, 1995); i.e. a case chosen for *particular* reasons, rather than its representative nature. In case-studies of this kind, inductive reasoning on the part of the researcher is frequently concerned with the development of theoretical insights rather than generalised claims about other, un-researched cases (Yin, 2003; Blaxter et al, 2001; Bryman, op. cit.). Hence, it is common practice to choose a specific case because it appears to fit with the theoretical or analytical interests that inform the research project (Bryman, op. cit.; Mitchell, op. cit.). Because this type of case-study is concerned with a detailed, intensive exploration of the particular nature and complexity of a specific small-scale case, or what Geertz (op. cit.) describes as "fine-combed study in confined contexts" (p23), it typically involves the generation of qualitative data by means of observation, interviews and document analysis (Bryman, op. it.; Blaxter et al, op. cit.; Bassey, op. cit.).

Yin (op. cit.) describes the case-study of a singularity as "an empirical enquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident" (pp.13-14). [17] One of its particular advantages, he argues, is that it "copes with (situations) in which there will be many more variables of interest than data points and as one result relies on multiple sources of evidence . . . and, as another result, benefits from the prior

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[17] Yin provides valuable advice concerning the design and conduct of case-studies, especially those devised to 'test' theory, which I have drawn on in this chapter. However, he takes a positivist stance in relation to matters like validity and reliability; whereas my strategy incorporates an alternative approach to verification, confirmability and so forth, as I will explain below.

development of theoretical propositions to guide data collection and analysis" (ibid, brackets added). As I have previously noted, while there is widespread agreement in the literature with regard to the common significant factors of workplace learning and the complex relational nature of the interactions between them, there is less agreement about the 'status' of these factors. Some researchers (for example, Eraut et al, 1998) view these factors as highly significant and influential features of the *context* in which workplace learning takes place. Others, however, regard them as *constituents* of workplace learning (for example, Billett, 1994; Cole and Engeström, op. cit.; Lave and Wenger, op. cit). Thus workplace learning involves numerous "variables of interest". Moreover, there is a lack of agreement with regard to the boundaries between the phenomenon of workplace learning and the contexts in which it occurs. Yin's observations therefore indicate two quite particular grounds for adopting a case-study approach to the investigation of workplace learning. Moreover, a theoretical framework to guide analysis of the data has been previously identified in Chapter 4, which Yin argues is also beneficial.

The adoption of a case-study of the second type as the basis of the intended research project was therefore generally consistent with the nature of workplace learning as it is characterised in the literature, and in particular with the three methodological principles derived from that literature, which were outlined above. It was also consistent with the strategies adopted or advocated by other researchers in the general field. It permitted the selection of a small-scale case, or local singularity on the grounds that it fitted with the main research questions. It was therefore consistent with the purposes of the two stages in the project, outlined above. Moreover, it was a feasible mode of enquiry for a research student to carry out. For, as Blaxter et al (op. cit.) observe, the case-study "allows, indeed endorses", a focus on a single case, and thus "is, in many ways, ideally suited to the needs and resources of the small-scale researcher" (p71).

In developing the research strategy, it was also necessary to consider the distinction between *ethnographic* and *ethnographic-style* studies. There is little consensus in the research literature about the defining characteristics of an *ethnographic study* (Green

and Bloome, 1997), or the distinctions between *ethnography* and various forms of *participant observation* (Bryman, op. cit), although it is generally agreed that both processes involve observation, interviews and document analysis, and share the aim of compiling rich descriptions. Bryman (op. cit.) argues that *participant observation* and *ethnography* are very similar, though not synonymous processes (contrast with Bassey, op. cit. p.13) because, in both cases, "the researcher is immersed in a social setting for some time in order to observe and listen with a view to gaining an appreciation of the culture of a social group" (p. 266). He identifies seven common features of ethnography or ethnographic studies. They are that the researcher:

1. makes regular observations of the behaviour of members of that setting
2. listens to and engages in conversations
3. interviews participants
4. collects documents about the group
5. develops an understanding of the culture of the group and people's behaviour within the context of that culture
6. is immersed in a social setting for an extended period of time
7. writes a detailed account of the setting - Bryman notes that 'ethnography' is variously used to refer to the process of research and/or the written account (p. 291).

As I have noted, the case-study incorporated features 1-5 in this list. It also included a detailed account of the institutional setting (feature 7), but perhaps not to the extent that would normally be expected of an ethnography or an ethnographic' study. The data generation process was carried out over a period of approximately six months and involved 55 hours of observation, in addition to the time devoted to interviews and document analysis. The terms "immersion" and "extended period" are imprecise but it is unlikely that this amount of observation would be generally viewed as "immersion in a social setting for an extended period of time". Therefore the case-study lacked what many would probably regard as a defining feature of an ethnographic study. However, this objection is offset to some extent by the fact that the research was carried out in the university where I had worked for more than two years at the time of the research

project. Therefore I had been "immersed" for "an extended period" in the broad institutional setting, although I was less familiar with the specific local setting of the case-study.

For these reasons it is probably more appropriate to describe the research strategy as an *ethnographic-style* case-study rather than an *ethnographic* case-study. Put another way, my intention was not to 'do ethnography', but to adopt what Green and Bloome (op. cit.) call 'an ethnographic perspective', which takes as its focus certain aspects of the everyday life and cultural practices of a social group, and uses theories of culture and enquiry practices derived from anthropology or sociology. Given this description, I should note that Yin (op. cit.) argues a defining characteristic of ethnography is that the researcher eschews theoretical propositions at the outset of the enquiry (p28). As I have explained, this was not my intention in the case-study.

Taken together, the preceding considerations indicated that the appropriate research strategy for the proposed investigation was that of a small-scale, ethnographic-style case-study of a local singularity, in which qualitative data were generated by means of observation, interview and document review.

As I have explained, I chose this research strategy because it is consistent with the characterisations of workplace learning in the literature I analysed in Chapter 3. Because I intend to use the concepts and principles of Activity Theory to analyse and interpret the data, I think it will be helpful to clarify two matters. Firstly, some researchers advocate the adoption of similar methods and themes because they believe that when Activity Theory is selected as the analytical perspective it should also inform the design of the research process. Roth and Breuer (2003), for example, argue that:

> *"The (Activity Theory) themes used for understanding observed*
> *phenomenon also account for the research. This framework does not allow*

researchers to split methodology from epistemology" (para. 16, brackets added). [18]

They also note that:

> *"Activity Theory focuses on practical actions and investigates their mediated nature and embeddedness in systems rather than the heads of people"* (para. 2).

The research process therefore should take as its unit of analysis the Activity Systems in which actions are "embedded" and include observation of the everyday activities in which "mediated practical actions" occur.

Roth and Lee (2007) observe that "uncovering" the influence of "the structural (societal) relations that energise the activity system . . . necessitates a thorough interpretive analysis of historical determinants that lie outside the immediate life world of individual social actors" (p210). Similarly, Roth and Breuer (op. cit.) reiterate that to "understand an Activity System as it is today, we also have to do a historical analysis that shows how the system came to where it is now" (para. 5).

These comments indicate that, in addition to observation, the research process must include interviews and document review as the means to construct historical accounts at the levels of:

- the organisation and 'society'
- the Activity System and its elements
- individual biography.

Further endorsement of these methods comes from Engeström (1999b) who reports that analysing videotapes of 'naturally–occurring' team meetings and other interactions at work, complemented by individual interviews and document analysis, enabled "very detailed data-driven analyses of the discursive processes, practical actions and mediating artefacts . . . employed in the step-by-step production of an innovative solution or idea" (p377).

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[18] Roth and Breuer, 2003 refers to a paper published online that has no page numbers but comprises 17 paragraphs.

Thus although they are selected for different reasons, there are a number of close similarities between the research strategy I have adopted and the modes of research others argue are consistent with the adoption of Activity Theory as an analytical perspective.

The second, related point to note is that Engeström and his collaborators have devised an "interventionist research methodology" for "applying Activity Theory, specifically the theory of expansive learning, in the world of work, technology and organisations" (1999b, p2 online). Called *Developmental Work Research* (DWR), this methodology "aims at pushing forward, mediating, recording and analyzing cycles of expansive learning in local activity systems" (ibid). In DWR, the researchers' role is to "(make) visible . . . the contradictions of the activity under scrutiny, challenging the actors to appropriate and use new conceptual tools to analyze and redesign their own practice" (1999b, p6 online, brackets added), The *Change Laboratory* and *Boundary Crossing Laboratory* (BCL) are two methods Engeström and his colleagues use to implement DWR. (Engeström, 1987, Ch 5, provides a comprehensive description of the procedures these involve; Engeström, 2001 an example of the BCL in action.) As I have explained, my purpose in the case-study is to examine the character of learning as it occurs in the course of 'normal' working activities, *not* to intervene in that learning or stimulate expansive learning, as DWR aims to do. Therefore, although I intend to use the concepts and principles of Activity Theory to analyse and interpret the data generated in the case-study, it would not be appropriate to adopt the DWR methodology.

The case of workplace learning to be studied

When designing case-studies, Yin (op. cit.) proposes it is helpful to define at an early stage "what the 'case' is" (p.22) and ensure that the subsequent collection, analysis and interpretation of the data are consistent with this definition (p.76). My purpose in this section therefore is to explain the selection of the specific case of workplace learning I investigated.

The analysis in previous chapters indicated that the appropriate focus for the case-study was a group of academic teachers who could be provisionally assumed to comprise a small-scale workgroup. In this regard, three studies analysed in Chapter 3 (Knight and Trowler, op. cit.; Silver, op. cit., and Trowler and Knight, 2000) reported that departments and other similar sub-units of the university are the primary workplaces of university lecturers. More specifically, Trowler and Knight (2000) concluded that teaching practices are primarily formed and reformed at the level of the department. However, the ways in which universities are organised and sub-divided vary widely and the three reports provide little indication as to the size or kind of unit the term 'department' refers to.

In Chapter 4 I proposed that common disciplinary or specialist subject interests may be as important as joint allocation to an administrative sub-division in defining teachers' work-groups. I also noted that support for this suggestion is provided by studies of disciplinary cultures and academic identities in universities, which conclude that discipline or specialist field plays a very significant role in academic work and association (Becher and Trowler, op. cit.; Henkel, op. cit.). Drawing on these considerations, the selection of the case of workplace learning studied in this investigation was made as follows.

The local context: the School of Bio-medical Sciences
In my work at *Anon University*, I have a liaison role with the *Faculty of Physical Sciences*. This primarily involves membership of the Faculty's Academic Board, Academic Standards Committee, and Degree Validation Panel, but I also work with colleagues in the Faculty on small projects concerned with the development of teaching, broadly conceived. Therefore I have some familiarity with the work and staff of the Faculty, and they with me, which potentially facilitated access with regard to the research project (Costley et al, op. cit.). The Faculty is sub-divided into three Schools, one of which I shall refer to as the *'School of Bio-medical Sciences'* (SBS). During the two and half years preceding the case-study, the lecturers who work in the SBS had experienced significant changes, which began with the appointment of a new Head of

School in the summer of 2004. This appointment coincided with several major curriculum-development projects in the School, which involved changes to some existing degree programmes, and the introduction of several new ones. During the same period (the academic year 2004-5), a new School structure was devised, in part to better support these curriculum developments. Previously, staff in the School had been organised into course teams. The new structure formally subdivided the School into three 'Divisions', each of which was intended to comprise three 'Subject-groups'. Three new Head of Division posts were created and six new, mainly young lecturers appointed.

Thus prior to the case-study there had been substantial changes in the way work within the School was organised and managed, and in the degree programmes on which staff members taught. As I noted in Chapter 1, organisational and curriculum changes like these are an increasingly common feature of many lecturers' working experience. In Chapter 4 I noted that one of the concerns expressed in relation to Lave and Wenger's (op. cit.) 'situated learning theory' is that the 'communities of practice' they refer to appear to be largely stable and coherent, and their practices seem to change primarily through a process of gradual adaptation as one generation follows another. The circumstances described here, however, suggest that at least some communities of practice in the SBS had been subject to radical reconfiguration when the School was reorganised. In addition, Lave and Wenger show relatively little interest in the learning of experienced practitioners, or in factors other than their interactions with novices that might motivate changes in their practices. In particular, they pay little attention to learning that occurs when experienced and proficient practitioners encounter problems, challenges and demands in their work which require them to change their practices, sometimes in radical or innovatory ways. The staff of the SBS, however, had recently been required to respond to substantial changes in the circumstances of their work, and it seemed likely this had involved significant changes in working practices and a good deal of workplace learning. The particular situation in the SBS therefore supported the general argument made in Chapter 4 that Activity Theory was more likely than 'situated

learning theory' to provide an appropriate basis for an analytical perspective on the workplace learning of academic teachers.

The SBS was therefore judged to be an appropriate general location for an investigation of workplace learning. The selection of the specific workgroup to be the focus of the case-study was made as follows.

The specific workgroup: the Professional Practice Group
At the time of the research project, the School consisted of three Divisions, sub-divided into seven subject-groups (SBS Academic Structure chart for 2005-6). Two of these subject-groups contained fifteen and twelve members respectively, and I decided it would not be feasible to conduct an intensive, 'up-close', detailed qualitative investigation involving either group, given the resources of a single research student. In making this decision, I thought it might be beneficial in the later phases of the research project to interview some members of one or more adjacent subject-groups in order to compare and contrast aspects of their experiences with those of the case-study group. However, the size of these two groups would exclude the possibility of subsequently expanding the scope of the enquiry. Two other subject-groups each comprised four members and I was concerned they would be too small to be the subject of a worthwhile, valid case-study. Moreover, if one member of a group of four decided to withdraw before the study was completed, this might undermine the project.

The three remaining subject-groups comprised the *Pharmaceutical Division* and consisted of lecturers who were experts in the general field of pharmacy. The *clinical-pharmacy practice* subject-group had nine members; *pharmaceutical science* seven members and *professional-pharmacy practice* six members. The members of each subject-group had cognate fields of individual expertise and closely related teaching duties. The Head of the Division had tried to arrange the groups so they would "work effectively as teams", which he hoped would, in turn, facilitate the "effective delivery" of modules, and enable group members to monitor, evaluate and, where necessary, adapt their teaching practices (exploratory conversation, 17/03/06),. The subject-groups

in this Division were therefore convened with the deliberate aim of creating the potential for collaborative change in teaching practices. Thus these groups had three features in common with the subject departments in Hodkinson and Hodkinson's study: they were formally designated sub-units of the institution, constituted on the basis that their members had cognate subject specialisms and closely related teaching duties.

Because of their sizes, it would be possible to take any one of the three groups as the focus of a case-study and retain the potential to expand the study if necessary (I shall explain in Chapter 11 why this expansion did not occur). So, during a period of four months I invited the *clinical-pharmacy practice* and *pharmaceutical science* groups in turn to participate in the research project. However, at least two members of each group declined to take part or ignored the invitation. Because the research would involve the observation of group meetings and group members working together, neither group could be taken as the focus of the study; so I sent invitations to the *professional-pharmacy practice* group (PPG). Five PPG members agreed to take part and the sixth indicated that although she did not wish to be interviewed or shadowed she had no objection to the study being conducted or to being indirectly involved. I therefore took the PPG as the focus of the case-study. A month before the investigation began, in January 2007, a seventh person joined the group.

In summary, the seven individuals who comprised the PPG were members of a formally constituted subject-group of academic teachers intended to function as a distinct workgroup and expected to effect collaborative changes in teaching practices. During the three or four years preceding the study there had been a number of significant changes to the group's work; its composition and the ways in which its members went about their work. There had also been significant changes in the organisation of the School in which the group was located. Moreover, the courses to which the group contributed were subject to changes in government policy, which were reflected in the changing expectations of the professional body, The Royal Pharmaceutical Society of Great Britain (RPSGB). Thus the work of the group was subject to significant influences from outside the University. The size of the group allowed for an intensive

investigation of its members' experience and would permit an expansion of the study if it became evident this would be beneficial. Two other, related features of the group are notable. Firstly, the members had complex professional identities, in that they were all either university lecturers who were also qualified pharmacists, or practising pharmacists who also taught at the University. Secondly, the PPG members regularly worked with colleagues from other disciplines, especially molecular biology and chemistry, and other professions, particularly medicine and nursing. Thus there was the potential to explore ways in which the learning of the PPG members was affected by influences from adjacent groups.

A 'trustworthy' study

In this section I shall explain and justify the principles adopted to ensure the case-study was rigorously conducted.

Yin (op. cit.) argues that the criteria of *construct validity, internal validity* and *reliability*, which are used to establish the quality of social research based on quantitative data should also be applied to case-studies because they are a mode of "empirical" enquiry (pp.19 and 33-39). [19] But this view is unusual among authors in the research literature. The more common position (Brymon, op. cit.) is exemplified by Lincoln and Guba (1985; Guba and Lincoln, 1994). They argue it is impossible to provide a single, authoritative account of social phenomena; therefore the traditional criteria are inappropriate for 'qualitative' research, at least in their original form. However, amongst those who share this view, there is no consensus about which alternative criteria should be adopted (Bryman, op. cit.). Because I acknowledged that the case-study would involve a high degree of subjectivity [for a detailed discussion of the subjective dimensions of qualitative research, see Bryman (op. cit)], I decided to follow Lincoln and Guba (op. cit.), who advocate an alternative criterion of

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[19] Yin omits the fourth traditional criterion of *external validity* because, as was noted above, he adopts the general view that the proper goal of inductive reasoning in case-studies is *analytic* rather than *statistical* generalisation.

"*trustworthiness*" (pp. 281-331). This has four aspects or principles, which are similar to the traditional criteria referred to above and are as follows:

1. *Credibility* (similar to *internal validity*) concerned, in particular, with the credibility of the findings, this principle is observed by following the norms of good research practice; by sustained engagement and persistent observation. Lincoln and Guba also argue it involves seeking a high level of congruence between the interpretations and findings of the researcher, and the views of the participants, through the process of 'respondent validation', which will be further discussed below.

2. *Transferability* (similar to *external validity*) it cannot be assumed that the findings of 'qualitative research' will "hold in some other context, or even in the same context at some other time" (ibid, p.316). However, the principle of transferability encourages researchers to provide rich, detailed – 'up close' and 'thick' – descriptions of the object of study which will enable others to form judgements about the potential to *relate* their findings to other situations.

3. *Dependability* (similar to *reliability*) to observe this principle, researchers should ensure their accounts of the enquiry enable peers to audit the research process. This will help others to judge whether the findings might apply in other situations or at other times. In this regard it is notable that, in discussing the reliability of case-studies, Yin (op. cit) emphasises the importance of establishing "a chain of evidence" which will allow external observers to follow the research process from initial research questions to conclusion in either direction (p. 108).

4. *Confirmability* – (similar to the traditional criterion of *objectivity*) this principle encourages researchers to identify the ways in which their values and beliefs influence the process of enquiry, and manage this influence in an appropriate manner. Researchers can observe this principle by acting in good faith and by ensuring their reports enable peer 'auditors' to confirm that they have done so.

These are the specific principles which informed the case-study. However, because the aim was to study the 'work-a-day' experience of the PPG members, Cicourel's (1982) general principle of ecological validity was also borne in mind throughout the enquiry. This requires researchers to consider the question: "Do our instruments capture the daily life, conditions, opinions, values, attitudes and knowledge bases of those we study as expressed in their natural habitats?" (p.15, cited in Brymon, op. cit. p.32). [These five principles emphasise the provision of a detailed, transparent account of the research, which is also consistent with the British Educational Research Association's *Ethical Guidelines for Educational Research* discussed below.]

In concluding this section, it is necessary to comment briefly on three procedures which are frequently advocated in the research literature to help ensure the quality and rigour of qualitative research.

Triangulation

The use of multiple modes of data generation is often advocated as a means to achieve a quality akin to internal validity in qualitative research (Yin, op. cit.; Bryman, op. cit; Mason, op. cit.; Miles and Huberman, 1994). Comparing and contrasting data generated by different means is assumed to facilitate the construction of accurate or definitive interpretations. In this enquiry, however, three modes of data generation have been adopted because they are widely held to be complementary means of compiling rich, fine-grained descriptions of complex social and cultural processes, not because they will enable a process of triangulation. (The specific benefits of each mode are summarised below.) The notion of an objective or accurate interpretation of data implied by the traditional concept of triangulation is inconsistent with the methodological principles on which this enquiry is based. Moreover, as Barbour (2001) observes, data generated using different methods come in different forms; provide partial views of complex social phenomena and "defy direct comparison" (on-line p.5).

Respondent evaluation

As was noted above, researchers are often advised in the research literature to ensure the credibility of qualitative research by adopting the process of respondent validation (Costley et al, op. cit.; Barbour, op. cit.; Bryman, op. cit.; Lincoln and Guba, op. cit.). However, there are both practical and methodological arguments against respondent validation. Firstly it can be time consuming for participants (Bryman, op. cit.). Secondly, participants may be reluctant to be critical because they have developed a regard for the researcher. Alternatively, reading the researcher's interpretations and conclusions may occasion defensive reactions on the part of participants or even censorship (ibid, p.273). Thirdly, "researchers seek to provide an overview, whereas respondents have individual concerns, and this can result in apparently discrepant accounts" (Barbour, op. cit. p.5). Moreover, as Bryman (op. cit.) observes, "it is unlikely that the social scientific analyses (developed by researchers) will be meaningful to research participants" (p273, brackets added). Fourthly, respondent validation can be viewed as according research participants an epistemologically privileged status (Mason, op. cit.), which is incompatible with the methodological principles on which this enquiry was based. For these reasons, it was inappropriate to incorporate a formal process of respondent validation in this study. Nonetheless, I was mindful that in the course of the enquiry it might become evident there would be benefits in reviewing some of the emergent findings with participants, or in seeking further elaboration of their experience through additional discussion and I was prepared to give this due consideration.

Multiple coding

Multiple coding is the process in which an independent researcher cross-checks data coding and interpretation carried out by the primary researcher(s) (Barbour, op. cit.), a process often recommended as a means to invest qualitative research with a degree of reliability or objectivity (ibid). However, the relevance of either concept to qualitative research framed within an interpretative epistemological perspective is widely contested, as was noted above. Notwithstanding this methodological objection, Barbour (op. cit.) suggests that it is often useful to researchers if another person, sometimes

referred to as a critical friend, reviews examples of their data coding and interpretation, because this can lead to refinements in coding frames, or alternative insights and interpretations. For this pragmatic reason, I was prepared to seek the assistance of a critical friend if it became evident that this would be beneficial.

Ethical principles and procedures

The ethical principles and procedures adopted in the case-study were particularly informed by the British Educational Research Association (BERA) Revised Ethical Guidelines for Educational Research (BERA, 2004, Preamble, para. 2, p.4), because I was bound to observe these as a BERA member. My main purpose in this section is to explain how the conduct of the case-study was informed by the guidance on responsibilities to participants (ibid, pp.5-10), and the principles which underpin that guidance. Some of the procedures referred to below also draw on Bassey (op. cit.), who was instrumental in the production of the BERA guidelines. (The full guidelines can be accessed at: http://www.bera.ac.uk/files/guidelines/ethical.pdf.)

Voluntary Informed Consent

Each PPG member was invited to participate in the research by means of a *Letter of Invitation,* sent by email, which explained:

1 the context and purposes of the research

2 the intended methods of data collection and their part in these

3 the approximate amount of time their participation would involve

4 their right to withdraw from some or all aspects of the research at any time, for any or no reason

5 the arrangements for protecting privacy

6 storage of and access to data

7 the arrangements envisaged for publication (BERA, op. cit., paras 10, 11, 13, 19, 23, 24, 25, 26).

Because the enquiry was a case of insider research, it was also necessary to explain that the research project formed part of a thesis and was not directly connected to my work within the University. Moreover, if the findings of the enquiry were subsequently

referred to in my work within the University, this would be done in a manner that respected the rights of participants to confidentiality and anonymity (Costley et al, op. cit.). These points were also emphasised in my first meeting with each participant. Each potential participant was offered the opportunity to receive further information before deciding whether or not to participate. Furthermore, each person could respond to the invitation via a third party without their individual decision being known to the researcher. Individuals who consented to participate were asked to do so in an email, which was archived. Prior to approaching the intended participants, consent was sought and gained from the Head of School and the Head of Division. However, this procedure was not brought to the notice of the intended participants until after they had decided whether or not to participate because to do so might be construed as coercion or undue influence.

Privacy (confidentiality and anonymity)

No individuals are referred to by their real name in the presentation of the study. For clarity, the titles of posts are used, for example Head of Division; otherwise pseudonyms are used throughout, including the names of the University and its sub-divisions. The key to pseudonyms was stored securely. Audio recordings of interviews and other conversations were coded numerically for the purposes of identification. The recordings and key to the code were stored securely. Except where they are publicly available, at least to staff and students of the University, all electronic documents and papers related to the enquiry, including transcripts and research notes, were stored in a password protected enquiry file. Paper documents were kept to a minimum and stored securely. Participants were advised that all recordings and documents relating to anyone who withdrew from the enquiry would be returned to them or securely disposed of, according to their wishes. (No participant did withdraw.) Notwithstanding these arrangements, participants were assured that the rights of individuals conferred by the Data Protection Act would be complied with (ibid, paras. 23, 24, 25).

The enquiry was conducted throughout in a manner that sought to put participants at their ease and to prevent any sense of intrusion arising (ibid, para. 18).

Detriment

Participants were advised there was no predictable detriment from participating in the enquiry and if any unexpected detriment arose in the course of the enquiry this would be brought to their attention immediately (ibid, para. 21).

Ethical scrutiny

The proposal to conduct the case-study was reviewed and approved via the Institute of Education procedures relating to research students. Because the PPG members and I are employees of Anon University, it was also scrutinised and approved via the University's own Research Ethics and Governance procedures.

Archiving

When examination of the thesis has been completed, participants' consent will be sought to archive the materials relating to the enquiry for subsequent research purposes. Where consent is given, all materials will be archived securely as described in the section headed *Privacy* above. Where consent is withheld, all relevant materials will be disposed of in a secure manner (ibid, paras.23, 24, 25, 26).

In concluding this section it is pertinent to note that some of the BERA guidelines and principles refer specifically to research methodology and methods (paras 36, 37 and 45). The preceding sections of this chapter demonstrate generally that the enquiry was consistent with these guidelines and principles.

2 Methods

In this section I shall explain the methods by which data were generated in the case-study. These were informed by the procedures described in the Hodkinsons' published research reports and a more detailed account provided by Heather Hodkinson in a personal email (22/11/05). Subsequent references to this email are cited as Hodkinson

(2005). [20] The data generation process began in early February 2007 and ended in August 2007

Provisional topics and lines of enquiry

Yin (op. cit.) advises that, when planning a case-study enquiry, particular attention should be given to "the full but realistic range of topics that might be considered a 'complete' description of what is to be studied, and the likely topics that will be the essence of the description" (p. 30). Once these have been established, a set of substantive questions reflecting actual lines of enquiry can be identified, although they will often need to be adapted when they are pursued in conversation with participants (ibid, p73). For the purposes of this case-study, the significant factors of workplace learning identified in Chapter 3 indicated the provisional range of topics for investigation. They are the history; goals; activities; social roles, relations and interactions; 'cultural values' and 'cultural resources' of the local workplace and work process, together with the biographies and dispositions of the individuals involved. The diversity and complexity of these factors makes investigating workplace learning a challenging task, especially for a lone research student. However, the analysis of the literature in Chapter 3 provided no obvious grounds for assuming at the outset of the enquiry that particular factors would more salient than others. Therefore, for each of these *topics*, I identified potential *lines of enquiry*, for example:

> **1 the biographies of the individuals involved**
> *What are the career histories of the participants?*
> *How have individuals learned about teaching in the course of their careers?*
> *What are the similarities and differences in personal and professional experience between members of the subject-group?*
> *What relations are apparent between biography and workplace learning?*

These lines of enquiry provided a provisional agenda for data generation, but different topics and lines of enquiry were given priority in the interviews, observations and document analysis. (A list of the main topics and associated lines of enquiry is provided in Appendix 2.)

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data generation: modes and procedures

In the next three sections I shall explain how data were generated in the case-study by means of observation, interview and document analysis. A more detailed discussion of the general rationale for adopting these modes of collecting qualitative data, and their relative advantages and disadvantages is provided by Bryman (op. cit.) and Mason (op. cit.). First, however, I think it will be helpful to explain briefly how various individuals participated in the data generation process.

As I have previously explained, one member, Fran, chose not to be shadowed or interviewed as part of the study. However, she emphasised she had no wish to prevent the investigation taking place and no objection to the observation of activities in which she was a participant. In the event, she was present during three of the four shadowings; one of the two formally convened meetings, and most of the lunchtime and cafe-break meetings I observed.

Three PPG members who have full-time contracts, Alison, Ben and Chris, were each shadowed for a full working day. Ella, who has a fractional appointment, was shadowed for half a day. On each of these four occasions the person being shadowed worked for much of the time with other members, including Fran. Therefore, during the shadowing, various permutations of the members were closely observed working together for a total of approximately 35 hours.

Alison, Ben, Chris and Ella were each interviewed twice, Heather and James once. David, the head of the division, was also interviewed once. Thus 11 individual interviews were conducted in all, each one lasting approximately 60 minutes. Although Ella has a fractional teaching appointment, she is also a full-time PhD student and spends most of her working week at the University. Therefore I thought it was appropriate to ask her to give up the time required for two interviews. In contrast, Heather and James have small fractional appointments and work intermittently during the academic year, usually for a maximum of four hours per week. Moreover, they are paid only for the time they spend teaching students or attending a small number of

formally convened meetings. I judged it was unreasonable, therefore, to ask Heather and James to take part in two interviews, which would occupy time they were not being paid for. I also thought that one interview with each was proportionate to their involvement in the group.

In principle, shadowing Heather and James did not raise the same considerations. However, it proved impossible to arrange, because of the unpredictable way in which Heather's teaching was organised, and because James' involvement with the group was interrupted by a change in the terms of his appointment before the shadowing was due to take place. It is important, therefore, to emphasise that they were each present on some of the occasions when other group members were being shadowed. On these occasions it was possible to compile a detailed account of their participation in working activities. In addition, Heather took part in one of the two formally convened meetings that were observed. Moreover, the absence of Heather and James during other observations, and thus their non-participation in some of the activities that occurred, also provided insights into the interactions and learning of the group members, especially how learning was influenced by the division of labour.

Participant observation

In the research literature, participant observation is described as beneficial because it provides researchers with opportunities to:
- "see as others see" (Bryman, op. cit., p.328)
- observe and describe environmental circumstances which may not be evident in other modes of data collection
- observe people in a variety of settings and interactions, and thus gain insights into the relations between behaviour and context
- discern some of the implicit features of social life, or features which participants may be reluctant to discuss in interviews, for example: patterns of resistance at work (Yin, op. cit; Bryman, op. cit.).

However, participant observation can also be intrusive, and time consuming for researcher and participants. Moreover, observation is subject to bias, selectivity and subjectivity (ibid). In addition, the presence of the observer is likely to influence the behaviour of those observed and thus produce "reactive effects" (Bryman op. cit., p.331). One common reactive effect is that participants seek to provide what they believe the researcher wishes to see and hear (ibid). Conversely, they may be defensive and less than candid. These were particular concerns with regard to observations and interviews in this case-study because of the nature of my work as an 'educationalist' within the university. To try to obviate this potential effect, the Letter of Invitation explained the context in which the enquiry was being conducted; its purpose and the measures that would be taken to ensure privacy. In addition, in each observation and interview, I explicitly reassured the participants that the research did not involve judgements of their practices as academic teachers. I also explicitly encouraged them to be candid, and I conducted the observations and interviews in a manner that was intended to respect and foster candour.

As I explained in Chapter 1, I carried out three modes of observation:

1 observation of the local environment in which the members of the PPG worked

2 observation of two formally convened meetings, three lunchtime and four cafe-break conversations

3 'shadowing' individual members of the PPG [21].

In each case I adopted what Gold (1958, cited in Bryman, op. cit. pp. 298-9) terms an observer-as-participant role. That is, I did not seek to participate substantively in the activities being observed, other than was required to establish and develop good social relations with participants. However, during observations opportunities sometimes arose to generate data in informal conversations, and I took advantage of these, where appropriate. In all three modes, my observation was generally guided by the topics and lines of enquiry described above, but I gave priority to different aspects of these in each

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[21] Hodkinson (2005) reported that a day spent 'tracking' each of the teachers who she interviewed gave her a 'feel for the system and culture in which they worked', and provided a basis to develop the subsequent interviews.

of the different modes. For example, in the general observations I gave particular attention to the character of the physical environment as a cultural resource or artefact in the working practices of the PPG; to social interactions; patterns of movement; the organisation of time and the rhythms of the day.

During each episode of observation I used handwritten contemporaneous notes to record summaries of events and actions observed, and my initial interpretations. These formed the basis of more detailed word-processed field notes that I compiled as soon as possible after each episode. (An example of these field notes is provided in Appendix 3).

Interviews

One of the most commonly adopted modes of data generation in qualitative research generally, and case-studies in particular (Yin, op. cit.; Bryman, op. cit.), interviews are beneficial because they:

- enable the elicitation of richly detailed narratives, including narratives of past events which may be otherwise 'inaccessible'
- permit a wider range of topics to be addressed than are likely to arise in the course of observation and allow a focus of attention on particular lines of enquiry
- facilitate clarification and elaboration
- enable the researcher to identify and explore perceived causal relations (ibid).

In addition, they are less intrusive, especially in terms of time, compared with observation. However, the verbal narratives elicited in interviews are subject to bias, selective recall and subjectivity. Moreover, as a mode of interpersonal communication they often involve 'reactive effects' (ibid).

The interviews in this enquiry took the form typically adopted in qualitative case-study research when provisional lines of enquiry have been previously established. That is, they were relatively informal, conversational-style, semi-structured interviews, in which a thematic, topic-centred, biographical or narrative approach was adopted (Hodkinson, 2005; Yin, op. cit.; Bryman, op. cit.; Mason, op. cit. Lincoln and Guba, op. cit.). Each

interview lasted approximately 60 minutes and was recorded, (with participants' consent). As Bryman (op. cit.) notes, recording avoided reliance on the memory of the researcher and enabled thorough, repeated examinations of what was said (p. 321). It also has the potential to allow other researchers to scrutinise the data and evaluate the process of analysis and interpretation. Moreover, it permits data to be used in other ways later (subject to consent).

An outline schedule of questions based on the topics and lines of enquiry was used in each interview, although different topics and lines of enquiry were given precedence in different interviews (see summaries below). In addition, actual lines of questioning in each interview took account of the individual nature of the narratives that emerged and were adjusted to follow unanticipated promising lines of enquiry. Moreover, lines of enquiry pursued in later interviews were revised following provisional analysis of earlier interviews. I made initial notes immediately after each interview. These recorded my first impressions of the interview process; my immediate thoughts with regard to the narrative generated by the interview, especially any unexpected lines of enquiry, and any points which might have a bearing on subsequent interviews. These initial notes were reviewed and elaborated during the day following the interview.

Interviews with PPG members
As I explained above, four members of the PPG were each interviewed twice, between February and June, with approximately five weeks between the two interviews to allow for transcription and provisional analysis.

Interview 1
> The first interview addressed four topics and their related lines of enquiry:
> - the biographies and dispositions of the individual involved [22]
> - the goals of work

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[22] Hodkinson (2005) reported that a question designed to elicit the career histories of teachers she interviewed "proved to be one of the most valuable questions. Not only did they have a lot to say on the subject, there were a lot of overt and more tacit learning episodes described 'in passing', and in many cases this history proved relevant to the learning going on in their current careers."

- the teaching activities which their work involves
- the recent history of local working practices

At the start of this interview I emphasised that the focus of the investigation was the participants' workplace learning. In addition to questions concerning recent changes in their work and learning, participants were asked to consider current or imminent changes that were likely to involve learning. The first interviews were transcribed; a provisional analysis then informed the second interview with the individual concerned and subsequent interviews with other subject-group members.

Interview 2

The second interview provided opportunities to seek clarification or elaboration of matters discussed in the first interview, and to address the topics for enquiry not previously dealt with. The latter included:

- social relations and interactions within the PPG
- cultural values within the School and PPG
- cultural resources of the workplace and work process

Two part-time members, Heather and James, were interviewed once. In each case, the interview included all the topics outlined above.

Interview with Head of Division

This interview addressed the following particular questions in relation to the Division and the PPG:

- What significant changes have occurred during the previous 2-3 years with regard to the organisation of staff, their working activities and the curricula?
- Why were these changes made?
- How were these changes effected?
- How did staff respond to the need for change?
- What advantages or benefits have the changes brought? What issues, concerns or problems have arisen?
- In hindsight, how might things have been done differently or better?

– What learning did these changes involve and how did it occur?

Document analysis

Document analysis is often viewed in the research literature as an auxiliary mode of data generation, which is used to verify, contextualise, augment or clarify data generated by other means (Yin, op. cit; Mason, op. cit.). However, the analysis of the workplace learning literature in Chapter 3 indicates that documents should be regarded as significant cultural artefacts, and thus as important constituents of working activities and workplace learning. Moreover, in recent years, university teaching has become an increasingly bureaucratic activity. Consequently, the number of formal documents implicated in the work of university teachers has risen, as has their importance. In many cases, these documents are one of the means by which groups within and without the university seek to influence the goals of teaching; establish the division of staff labour; regulate the working practices of teachers; stipulate the modes of teaching to be adopted and the diverse cultural resources or artefacts these should incorporate, and determine cultural values and norms. Therefore, in this enquiry, pre-existing, text-based, 'publicly available' documents formally produced within Anon University and other organisations were treated as a significant 'source' of data. [23] These included:

- course handbooks and student handbooks
- University, Faculty and School statements of policy and procedure
- Papers relating to, for example, staff-student consultative committees, validation panels, professional body reviews
- School and Course Board Annual Reports.

My analysis and interpretation of these and other similar documents took account of their *content*, that is what they 'said' with regard to the significant factors of workplace learning and the related lines of enquiry outlined above; their *provenance* and their

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[23] '*Publicly available*' refers to documents available to staff of Anon University and, in most cases, students. I assume that all, or almost all these would be made available to someone from outside the University for research purposes. However, my position as an 'insider' gave me ready access to documents that an 'outsider' might not be aware of or find it easy to access.

function as constitutive artefacts in the processes of work and workplace learning. A provisional analysis was made at the outset of the enquiry process, in part to inform the conduct of the observations and interviews. Further analysis was undertaken in each phase of the enquiry in conjunction with the analysis and interpretation of the data generated in the observations and interviews.

Documenting the enquiry

A secure, systematic enquiry database was established as a repository for all materials related to the investigation including transcripts, records of observations, documents and field notes (Yin, op. cit.). Wherever possible, this database was kept in electronic form.

3 Analysis and interpretation of the data

Because strategies and techniques for analysing case-study data are not well defined in the research literature, Yin (op. cit.) suggests the development of a general analytical strategy is an important preparatory stage in conducting case-study analysis (pp. 109-111). The "most preferred strategy", he suggests, "is to follow the theoretical propositions that led to (the) case-study" (p.115, brackets added). In the case-study I followed this advice.

The 'theoretical propositions' that guided analysis and interpretation of the data

Drawing on the analysis in Chapter 4, the following theoretical propositions were taken to constitute Activity Theory in the context of this enquiry:

1 Teaching practices (that is, the working practices of academic teachers) are enacted in a network of distinctive historically evolving, artefact-mediated, activity systems, constituted at a local level within universities, and primarily distinguished by their objects and motives.

2   The activity system therefore is the prime unit of analysis when seeking to describe and explain university teachers' workplace learning, and the ways in which their teaching practices change. (Thus the goals and actions of individual teachers can

only be fully understood in the context of the activity system.) The main elements in the activity system are: the subject, object, mediating cultural artefacts, division of labour, community and rules.

3 An activity system is always a community of multiple points of view, traditions and interests.

4 Explanations of workplace learning, and of the ways in which teaching practices become established and change must take account of:
- the participants' own histories
- the local history of the activity and its constituents, especially its objects, and the theoretical ideas and tools that shape the local activity
- relations with adjacent or 'neighbouring' activity systems.

5 Developments and changes in teaching practices are primarily motivated by contradictions within and between activity systems

6 The workplace learning of academic teachers takes three forms: adaptive, investigative and expansive, and involves the processes of externalisation and internalisation.

7 Expansive learning results in the transformation of the activity system and involves:
- collective effort,
- reconceptualisation of the object
- changes in some or all of the other constituents of the activity system
- the emergence of new working practices.

The concepts and principles incorporated in these propositions provided the basis of the analytical strategy described below.

The analytical strategy

Qualitative data analysis is generally described as a process of sorting, organising and condensing the data in order to discern, examine, compare, contrast and interpret meaningful patterns, relationships or themes (Mason, op. cit.; Bassey, op. cit.; Miles and Huberman, op. cit.). In this enquiry, I carried out this process by broadly following the procedure described by Miles and Huberman (op. cit.), which involves three 'operations': *data reduction, data display* and *conclusion drawing/verification*, carried out in a continuous, iterative process.

Data reduction

Miles & Huberman (op. cit.), describe *data reduction* as "the process of selecting, focussing, simplifying, abstracting, and transforming the data that appear in written-up field notes or transcriptions" (p. 10). In this investigation it also included data generated by document analysis. Coding the data generally plays a central role in this process (ibid. p. 54). The main purpose of coding is to apply a uniform set of "indexing categories" to the data (Mason, op. cit.; p.111) in a systematic and consistent manner, to discern commonalities, differences, patterns, relations and structures (Marshall and Rossman, 1995; Seidel and Kelle, 1995). In this study, the concepts and principles of Activity Theory were adopted as a set of provisional codes before analysis (Miles and Huberman, op. cit), but I was also mindful that other concepts, categories and meanings might emerge from the data. (Appendix 4 illustrates how codes were derived from the concepts and principles of Activity Theory and applied to the data.) I then analysed and interpreted the data in four phases. However, because the process of analysis and interpretation was iterative, the four phases were less distinct in practice than is implied by the following description. The actual nature of the process is captured in Miles & Huberman's (op. cit.) observation that "from the start of data collection, the qualitative analyst is beginning to decide what things mean – is noting regularities, patterns, explanations, possible configurations, causal flows, and propositions" (p. 11).

Phase 1

This phase of the strategy had two closely related purposes:

1 to apply the concepts and principles incorporated in the theoretical propositions set out above to the data, as a means to gain insights into the historical, social, cultural and individual dimensions of the PPG's workplace learning

2 to identify aspects of the data which appeared inconsistent with, or could not be plausibly interpreted in accordance with those concepts and principles, because 'anomalous' data are frequently the source of significant insights (Miles and Huberman, op. cit.).

To these ends, I used the concepts and principles of Activity Theory to code the data in a loose process of cross-sectional content analysis (Mason, op. cit. p.111-28). This process, which involved comparing new codings of the data with previous applications of the same code (Bryman, op. cit.; Mason, op. cit.), enabled me to conduct a fairly systematic and consistent analysis of data generated by different means (Bryman, op. cit.). It was particularly helpful when the data involved complex narratives, processes and practices, as they often did (Mason, op. cit., pp.129-31). It was also helpful in exploring the similarities and differences in the experience of the various PPG members. To help manage the data I used NVivo software.

Phase 2

In the second phase I examined the inconsistent or 'troublesome' data for emergent meanings, themes and patterns. I then applied and developed the emergent codes, again using a cross-sectional procedure where possible, to construct plausible interpretations of the inconsistent data (Bassey, op. cit..; Miles and Huberman, op. cit.; op. cit.; Merriam, 1988).

Phases three and four: conclusion drawing and verification.

Miles and Huberman (op. cit.) advise that, as the process of interpretation proceeds and provisional conclusions begin to be drawn, the "meanings emerging from the data" must be *verified*; i.e. they must be "tested for their plausibility, their sturdiness (and) their 'confirmability' (p. 11, brackets added). Verification is the process that confirms the

"validity" of the interpretations and conclusions, in the sense of their credibility and robustness (ibid). Phases Three and Four of the analytical strategy, in particular, involved this operation of *conclusion drawing/verification.*

Phase 3

In the third phase I compared and contrasted the analysis and interpretation of the data in Phase 1 and Phase 2 to examine the plausibility and robustness of the two procedures, and to determine if further analysis or interpretation was required.

Phase 4

In the final phase I drew conclusions from the analysis and interpretation of the data conducted in the preceding phases. This phase had three aims, which I pursued in an iterative manner:

1 to provide a comprehensive account of the historical, social, cultural and individual aspects of the workplace learning of the PPG members and its role in the formation of their teaching practices

2 to evaluate Activity Theory as an analytical perspective on the data

3 to evaluate the design and conduct of the case-study.

data display

Miles and Huberman (op. cit.) define a *data display* in general terms as "an organized, compressed assembly of information that permits conclusions drawing and action" (p. 11). Displays may take a wide variety of forms but their common purpose is to illustrate patterns and relationships as an aid to analytical thinking (Mason, op. cit., p.131). I anticipated that diagrammatic displays would be helpful in analysing and interpreting the data generated in this enquiry for two reasons. Firstly, I thought it might be beneficial to 'map' aspects of the coded data onto diagrams of the activity system. Secondly, I expected diagrammatic forms of display might help to provide insights into the relation between the concepts and principles of Activity Theory, and other concepts and categories derived from the 'incompatible' or 'troublesome' data. In the event, I found that neither was the case, but I did use various large mind maps and other

personal diagrams to help me organise my analysis and interpretation of the data. (See Appendix 5 for an extract from a basic data display used at an early stage in the analysis.)

Summary

In this chapter I have described and justified the design of a research project intended to

1 investigate the workplace learning of a subject-group of academic teachers, especially its historical, cultural-social and individual aspects, and its role in the formation of their teaching practices

2 evaluate Activity Theory as the basis for a comprehensive, systematic and coherent analytical perceptive on the data.

I explained how I drew on the analysis of the workplace learning literature and complementary studies in Chapter 3; the analysis of Activity Theory in Chapter 4 and the advice provided in the research literature to identify the most appropriate methodology and methods of data generation; the case of workplace learning to be studied; the main themes and lines of enquiry to be pursued in the investigation; and the strategy for analysing and interpreting the data.

I also explained that I followed Lincoln and Guba (op. cit.) in adopting the criterion of *trustworthiness* and its four constituent principles, to ensure the quality and rigour of the research process. In addition, I sought to observe Cicourel's (op. cit.) general principle of 'ecological validity' because the aim was to study the work-a-day experience of the PPG members, and to locate this within a wider societal context.

I noted that, as a member of BERA (op. cit.), I am obliged to observe the Association's ethical principles and procedures, and I explained how these informed the conduct of the case-study. I also identified the ethical and practical concerns that arose because the enquiry involved insider research, and described how these concerns were addressed.

In the chapters that follow I shall present an analysis and interpretation the data generated in the case-study.

Chapter 6
The historical dimension of the workplace learning that occurred

Introduction

In Chapter 5 I described the design of a case-study intended to:

1 investigate the historical, social, cultural and individual dimensions of the PPG's workplace learning and its role in the formation of their teaching practices

2 evaluate Activity Theory as the basis of a comprehensive, systematic and coherent analytical perspective on the data.

In the next five chapters I shall present an analysis of the data based on the concepts and principles of Activity Theory.

As I have previously noted, it is widely concluded in the literature that a comprehensive analysis of workplace learning must give close attention to:

- the historical aspects of the workplace and working practices in which learning is implicated

- the biographies and dispositions of the individuals who are learning.

The theoretical propositions of Activity Theory are consistent with this conclusion, holding that an analysis must take account of:

- the local history of the Activity and its constituents, especially its objects, and the theoretical ideas and tools that shape the local Activity

- the participants' personal histories.

Therefore, in this chapter I shall analyse the historical dimension of the PPG's workplace learning. This will include a brief history of Anon University, the School of Bio-medical Sciences (SBS) and pharmacy education in the locality. I will follow this with a short introduction to the PPG members and their main teaching responsibilities; a brief account of their personal histories and a summary of significant events in the recent history of the PPG. (I shall analyse the role played in learning by individual disposition and interest in a separate chapter.)

In Chapter 7 I shall consider the motive, object and outcome of the PPG's work. As I noted in previous chapters, the object is a central concept in Activity Theory and the case-study suggests that a comprehensive understanding of workplace learning requires a detailed understanding of the relations between object, outcome and learning. In all the 'episodes' of workplace learning that were observed or narrated ('occurred') during the case-study, learning was oriented to the object and outcome. Moreover, conceptualisations of the object and outcome were often part of the substance of learning in many episodes. Therefore, it is necessary to consider the object and outcome of the PPG's work in detail.

In Chapters 8 and 9 I shall analyse some episodes of learning that occurred and I think it is at this stage that the full significance of the analysis in Chapters 6 and 7 will become clear. In Chapter 10 I shall consider the role played in learning by the dispositions and interests of the PPG members. In Chapter 11 I will evaluate Activity Theory as the basis of the analytical perspective adopted in the case-study, and in Chapter 12 I shall set out my conclusions and evaluate the case-study.

Before beginning my analysis, however, I should explain that to avoid ambiguity I shall use the forms 'activity' and 'activities' to refer to the everyday meanings of these words, and *'activity'* and *'activity system'* to refer to the phenomena and concepts with which Activity Theory is concerned.

1   A brief history of Anon University, the School of Bio-medical Sciences and pharmacy education in the locality [24]

Anon University emerged from a series of alliances between various professional colleges in the city and surrounding area, which led to the formation of a Polytechnic in 1970. This became a University in 1992.

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[24] The information in this section is drawn from the case-study interviews and three documentary sources, all internal documents of Anon University:
1. Faculty Facts and Figures in *Faculty Strategic Plan 2007-12 (FAB08-69)*
2. *Course Accreditation document for the MPharmacy (Hons)* May, 2008
3. *Periodic review document for Pharmacy Group,* June 2008

Pharmacy education has been provided in the city for more than a century, originally
by a Department of Pharmacy. This became part of the Technical College in 1919 and
the College of Technology in 1960. In the mid-1980s, the Department moved to the
Polytechnic to form the basis of a new School of Bio-medical Sciences (SBS). The
SBS is one of the largest Schools in the University, and continues to specialise in
pharmacy education and research. The case-study was conducted during the academic
year 2006-7, at which time the approximate numbers of staff and students in the School
were:

     55 Academic staff: Lecturers and Researchers

     40 Administration and Technical staff

     50 Research students

     95 taught postgraduate students

     840 undergraduate students.

Approximately 80% of academic staff were 'research active' at the time of the study
and in the 2002 Research Assessment Exercise the School was awarded a score of 5.

As I noted previously, in 2003-4 the School experienced a complex conjunction of
changes that directly affected the PPG. A new Head reorganised the School into three
subject divisions, each intended to comprise three subject-groups. At the same time,
several long-serving SBS staff members retired, effecting a partial generation-change
within the School. The retirees included Graham, the then PPG head, and he was
succeeded by Alison, who was twenty years his junior. At the same time, six new,
mainly young staff members were appointed, one of whom was Chris, a current PPG
member.

The main undergraduate course in the School is the MPharmacy programme
(MPharm), a four-year integrated Master's course that provides initial training for
pharmacists and has approximately 500 students. The first MPharm was designed in
1997, mainly by Pharmacy lecturers whom David, the head of the PPG's division,

described as "the elder statesmen" of the School (David, 1: 141) [25]. Almost all of these lecturers had worked in the School when it was part of the Polytechnic and some, including Graham, had been members of the Department of Pharmacy when it was located at the College of Technology. In contrast, the course development team for the second MPharm, validated in 2003, comprised members of the next generation, whom David described as being "scientists". This team included Alison, the current PPG head. Many of the changes the second team introduced were condemned by the soon-to-be-retired elder statesmen (David, 1:141). At the time of the case-study, a third version of the MPharm was being developed in response to changes in the work of pharmacists and in government healthcare policy. The lecturers who designed this version explained in the validation document that they taken account of "new discoveries and developments" and "the introduction of new legislation" (Periodic review document, p.12). However, the most important consideration had been "a shift from pharmacy being a 'Product-orientated' profession to a 'Patient-oriented' profession" (ibid, p.7) and in this regard they noted a concern expressed by "stakeholders" that contemporary MPharm graduates had "poor communication skills" (ibid).

During interviews, the members of the PPG described some of the technological, political, economic and social factors that had caused this 'shift in orientation' and the consequent increase in attention to social interactions between pharmacists and 'patients'. In part it derived from a move to mass-produced pharmaceutical products, as Alison explained,

> "when I did my degree we made ampoules . . . injections, suppositories, creams, ointments, elixirs, solutions. We made everything. Now, nothing, because it's all made for us . . . That means there's a shift from really knowing lots and lots about science to being . . . very good at sitting down and consulting with a patient and getting the information you want in a professional way that allows them to feel safe ..... so consultation skills is massive for us now " (Alison, 2:32-34)

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[25] The information in brackets refers to the Person, Interview number (1 or 2) and Paragraph number in the Nvivo version of the relevant transcript: e.g. *David, 1: 141* refers to paragraph 141 in the transcript of the interview with David, the Head of Division.

In addition, the UK Government had adopted a policy of encouraging pharmacists to do things previously done by General Practitioners (GPs), including medicines-use reviews and some minor prescribing (Ben, 2:72). This policy was designed to reduce the workload of GPs and, because pharmacists were cheaper to employ than GPs, to achieve more cost-effective prescription and use of medicines, thus lowering the costs of healthcare provision. The policy was encouraged by the large retail companies that operated many 'community pharmacies' because it provided new business opportunities (Ella, 2:84), and supported by many pharmacists, who believed their professional expertise was under-used (Ben, 2:76).

These technological, political, economic and social developments occasioned changes in the requirements of the then statutory professional body, The Royal Pharmaceutical Society of Great Britain (RPSGB), which in turn led to alterations in the curriculum of the third MPharm degree. The same developments were also closely associated with local changes in staffing which had been stimulated in part by a growing disparity between the pay of pharmacists and university lecturers (David, 1.68).

These demographic changes were an important element in the narratives of learning discussed in subsequent chapters. The lecturers who retired in the three years preceding the case-study were members of the then dominant generation, who identified themselves primarily as 'Pharmacists' and who shared a particular set of values, priorities and preoccupations. As was noted above, many had worked on the pharmacy courses when these were located in the College of Technology and subsequently the Polytechnic. They were replaced by lecturers who were chemists, microbiologists or pharmacologists, and who identified themselves' as 'Scientists', or by members of a new generation of 'Pharmacists' whose values and preoccupations differed significantly from those of their predecessors, especially their conceptualisations of, and behaviour towards patients. Graham, Alison's predecessor as PPG head, was a member of the first generation, as was Heather, at least in terms of age. Alison, Ben, Chris, Fran and James were all members of the second generation. Ella belonged to a

third, emergent generation. However, in their 'thinking' Heather and Ella appeared to have many similarities with the second generation.

2 The members of the PPG, their main teaching duties and their personal histories

The seven PPG members have complex professional identities in that they are all registered pharmacists as well as university teachers. They teach mainly on two courses: the MPharm and the much smaller post-graduate Diploma in Pharmacy (OSDip). Introduced in 2004, the latter is a one-year, full-time conversion course for qualified pharmacists from non-EU countries who wish to proceed to registration and eventual practice in the UK. It recruits approximately 30 students each year. The MPharm and OSDip courses share some modules and both are accredited by the RPSGB.

All the PPG members specialise in pharmacy practice, the basis of which is dispensing, and most of their teaching is directly concerned with preparing students to work in 'community pharmacies' (i.e. retail pharmacies), although they also refer to the work of pharmacists in hospitals and primary care trusts (PCTs). Most of the group give some traditional lectures and supervise final-year undergraduate project students, but a great deal of their teaching involves working with MPharm and OSDip students in the Clinical Skills laboratory (the Lab) on various practical activities. These entail students carrying out a variety of pharmaceutical procedures, especially dispensing, and they often involve real or simulated patients and doctors. Practical classes in the Lab usually last for at least three hours, sometimes a full day, and raise distinctive pedagogic considerations. Each academic year several hundred students may be engaged in dispensing activities. However, the Lab can accommodate only about 30 students. Therefore, to accommodate all of the students they are required to teach and assess, the PPG members work with numerous groups. Moreover, because each student must be given individual attention during many of the classes, especially when these involve assessment, they are very labour intensive, often requiring three or more PPG members to staff them. Consequently, one of the group's continuing preoccupations is how to manage large numbers of students with limited time, facilities and staff. Most

of the workplace learning observed during the case-study occurred in the course of these practical classes or was directly related to them.

The PPG members spend a large part of their working lives in the Lab and clearly regard it as their room, albeit that other lecturers sometimes use it and the Lab Technician has formal responsibility for its management. Located on the 7th floor, immediately adjacent to the offices occupied by Alison, Fran, Chris and Ben, the Lab is a large, rectangular room, with two small inner consulting rooms in one corner. Locked cupboards containing neatly arranged drugs and other pharmaceutical products line most of the north wall. Shelves next to the cupboards contain multiple copies of various Pharmacopoeias that students consult during their practical classes. The room is furnished with eight square blocks of dispensing tables. Each block comprises four small, student work-tables, and each table contains a small data screen and printer. The students sit at high stools to work. It is the only room of its kind in the building, and it differs in appearance and function from the various biology and chemistry laboratories used by other adjacent subject-groups to teach the same students. The Lab is an important constituent of the physical and social environment in which the group work. Moreover, it also functions as a distinctive cultural artefact that mediates between the PPG and the students as the object of their work, as will be evident in the analysis in subsequent chapters.

Alison, Chris and Ben

Alison, Chris and Ben are full-time lecturers. Alison is the formally designated PPG leader and Course Leader of the OSDip course, which she designed. She was an undergraduate and PhD student at the University. Having worked briefly as a hospital pharmacist and post-doctoral researcher for a multi-national drug company she took a post as a lecturer in the SBS and in 1997 joined the PPG. Alison maintains her registration as a pharmacist, but differs from all the other members in having a PhD and minimal first-hand experience of pharmacy practice.

Chris, in contrast, has very extensive practice experience, having worked for many years as a community pharmacist, including ten years as a manager for Boydds, a large national chain. In the early 2000s he was appointed as a part-time lecturer in the PPG (0.2), whilst continuing to work as a locum pharmacist for three days each week. In 2004, three years prior to the case-study, he became a full-time lecturer at Anon.

Ben had been a lecturer for approximately fifteen months before the case-study began. His father owns a pharmacy and, prior to taking up his PPG post, Ben had worked as pharmacist for almost twenty five years, briefly in a hospital but mostly in various community pharmacies. For seven years prior to joining the PPG he had been a pre-registration tutor, which had stimulated his interest in teaching and in a new direction for his career (Ben, 1:5).

Heather and James

Heather and James are practising pharmacists who have part-time lectureships (0.2 and 0.1 respectively). They both teach on the MPharm and OSDip courses. Heather, who is formally retired, also teaches on another post-graduate course within SBS and has a part-time post at the local PCT. She has been a pharmacist for almost fifty years, during which time she has worked in hospitals; community pharmacies and, for many years, as a partner in an independent pharmacy. She has been a part-time lecturer in the SBS, and at another university, since the mid-1980s.

James was an undergraduate at Anon in the early 1990s, at the same time as Fran, who is a friend. After graduating he worked for almost fifteen years as a pharmacist in hospitals, industry and community pharmacies. He began working as a part-time lecturer (0.1) in the PPG in 2002. At the time of the study, he also worked as a pharmacist at the local PCT. In addition, he had recently set up a small but expanding business providing medication training for care workers. Midway through the case-study his appointment at the SBS was changed to that of an occasional visiting lecturer, so that he could devote time to his business and the PPG could use him when the need arose.

Fran

Fran is a pharmacist employed by Boydds. Her main function is to recruit new pharmacy graduates to the company and supervise their pre-registration training. She spends an average of two days each week at the University, where she is provided with a room and facilities, and designated as the 'Boydds practice tutor'. In addition to providing employment opportunities for students, she contributes to the teaching and assessment of the MPharm students, although she receives no pay from Anon for this. Fran shares an office with Alison and appears to defer to her as subject-group leader, although Alison maintains she has little formal authority over Fran, except in relation to her small teaching commitment. At the time of the investigation Fran had 'worked' at the university with Alison for approximately seven years. She is married to Ian, a chemistry lecturer in SBS who shares an office with Chris.

Ella

Ella, who joined the PPG very shortly before the case-study began, is a former MPharm student who was taught as an undergraduate by Alison, Heather and Fran. Ella worked for Boydds as a sales assistant whilst at school and university, then as a pharmacist for two years after graduating. During the third year of her course she decided she wanted to do a PhD. Knowing this, Alison recruited Ella as a full-time PhD student when a suitable opportunity arose (Ella, 1: 70). On taking up her studentship, Ella joined the PPG as a part-time teaching assistant on the MPharm and OSDip courses. She also continued to work occasionally as a locum pharmacist for Boydds.

The PPG members often work with people from various other subject-groups in the School, including Clinical Pharmacists, Pharmacologists, Biologists and Chemists. Alison, Chris and Ben in particular also sometimes work with university colleagues from other professions, especially medicine and nursing.

3 A summary of significant events in the recent history of the PPG

In summary, during the three years preceding the case-study there were changes in:

- the work undertaken by the PPG, notably the introduction of the OSDip course
- the composition and leadership of the group
- the ways in which the members of the group went about their work, occasioned by the transfer of leadership from Graham to Alison.

During the same period there were also changes in the organisation of the School in which the group is located. These changes are summarised schematically below. They played a central role in the PPG members' learning as will be explained in subsequent chapters.

1997	*MPharm 1*: first version, designed by the "elder statesmen", is validated. Alison joins the PPG
1999	Fran joins the PPG
2002	James joins the PPG as a Visiting Lecturer Chris joins the PPG as a part-time lecturer
2003	Alison begins designing the OSDip course in the summer term Alison replaces Graham as PPG leader in October *MPharm 2*: second version, designed by the "scientists", is validated.
2004	Head of SBS appointed - School is reorganised into 9 subject-groups Chris takes up full-time PPG post Alison continues to design OSDip and pilot it through the validation/accreditation process
2005	first OSDip cohort is enrolled for the 2005-6 session
2006	Ben joins the PPG in January
2007	Ella joins the PPG in January as part-time teaching assistant and full-time PhD student **Case-study conducted January-August**

2008	*MPharm 3*: third version of the MPharm is validated. The lecturers who designed the course explained that: "*The new MPharm programme . . . formalises the increase in patient contact that has occurred incrementally over the lifespan of the previous course . . .* " (Periodic review document, p.3)

Figure 2: Significant events in the recent history of the PPG

Conclusions

The teaching practices and workplace learning of the PPG members were closely associated with a complex set of historical circumstances at various levels. These included:

- international and national developments in the provision of pharmaceutical goods and services, and in the role, work and education of pharmacists

- the effects of national economic, healthcare and education policies, and legislation

- the history of pharmacy education within the city, particularly its transfer from the further education to the higher education sector

- the history of the SBS, especially changes in the demography of its staff and their working 'identities'.

These circumstances were often the source of tensions, or 'contradictions' that stimulated learning and changes in teaching practices, examples of which will be discussed below. They were also the source of many cultural artefacts (for example; values; attitudes; ideas; processes and modes of conversation) that were implicated in the work of the PPG members, and which themselves played a complex role in learning. In addition, these historical circumstances were embodied in the history of the PPG as a community, and in the personal histories of its members. Thus historical circumstances at an international, national and local level did not function simply as the particular context in which the learning of the PPG members occurred. Rather they were constituents of learning, as were the personal histories of the members. This conclusion is consistent with the finding by Fuller et al (op. cit.) that "many of the forces

responsible for the on-going development of the communities we studied came from external pressures, in the wider organisations where they were located, and from national and even global systems" (p. 64).

Chapter 7

The role of the object and outcome in workplace learning

Introduction

In Activity Theory, *activities* are assumed to be motivated by the transformation of an object into an outcome that satisfies a need or needs. Participants in the *activity* (subjects) use internal and external tools (mediating cultural artefacts) to 'work on' the object to achieve the outcome. The object therefore "represents and 'explains' the collective motive of the activity" and the kind of outcomes that are collectively pursued (Toivianon, op. cit., p2). Different *activity systems* are distinguished by their objects. Thus the object is a central concept in Activity Theory and, as I noted in Chapter 6, the case-study suggests that a comprehensive understanding of workplace learning requires a detailed understanding of the relations between object, outcome and learning. In all the episodes of workplace learning that occurred during the case-study learning was oriented to the object and outcome. Moreover, conceptualisations of the object and outcome played a central role in some of those episodes. Therefore, it is necessary to consider the object and outcome of the PPG's work in detail.

1 The motive, object and outcome of the PPG's working activities

Teaching on the MPharm and OSDip courses is motivated in general terms by a social need for licensed pharmacists to provide pharmaceutical goods and services. In the common Programme Aims of the two courses, the general outcomes lecturers are expected to pursue in teaching are described as follows:

> "*1 ... the development of critical thinking, integrative capabilities and problem solving skills ....*
> *2 ... the development of personal, social, behavioural and communication skills for effective interaction with patients, colleagues and health care professionals*
> *3 ... an academic and scientific education and the skills which enable (students) to successfully undertake the pre-registration year and subsequently pursue a career in any branch of pharmacy*
> *4 ... professional and ethical awareness.... "*
> (MPharmacy Programme Specification, May 2008)

The students on the two courses and their learning in pursuit of becoming licensed pharmacists are the embodiment of the general *motive* and *outcomes* pursued by the lecturers who teach them. Thus the students and their learning are the *object* of the lecturers' work in this regard.

However, the numerous lecturers who teach on the two courses 'belong' to various subject-groups, including *'Clinical Practice'*, *'Pharmacology'*, and *'Chemistry'*, and there are indications in the data that each subject-group took a different view of what it is important for a competent pharmacist to know and be able to do. Consequently, the various groups gave priority to different aspects of the general course outcomes; pursued diverse *particular* outcomes in their work with the same students and used different cultural artefacts to 'work on' the students in pursuit of those outcomes. The following comments by Alison typify how the PPG members conceptualised the particular outcome they sought to achieve at the time of the case-study:

> *"We want students who are practitioners . . . able to communicate . . . take clinical responsibility, . . . make decision(s) . . . then safely dispense and then counsel, maybe even diagnose over the counter . . . I want professional, responsible, accountable people who can make a clinical decision and be able to defend it and put the patient first at all times . . . to make sure the (patient) is getting the best healthcare they could possibly get and . . . all the ethical things about making sure they're just and they are fair . . . So that's what we're after. I'm not so interested in how much chemistry they know . . . ."* (Alison, 1:210-215)

Summarising this and numerous other similar descriptions provided during the interviews, the PPG members conceptualised the outcome they collectively pursued in terms of the students' ability to:

- monitor the prescriptions given to customer-patients (patients) by doctors
- accurately dispense and label medicines
- provide additional services to patients, such as medicines-use reviews, healthcare advice and some over-the-counter prescribing for minor ailments
- empathise and communicate effectively with patients, treating them 'as people', rather than as 'medical conditions requiring treatment'

- empathise with diverse other healthcare workers and work with them in a collegiate, co-operative manner

- monitor, evaluate and regulate their own behaviour to ensure they act in the best interests of patients, and in a professional, lawful and ethical manner.

The PPG members described an especially marked contrast between what they thought it important for a pharmacist to know and be able to do, and the view taken by some of their Chemist colleagues:

> *"If you go and ask the Chemists what they think of us, we're the fluffy end . . . talking about the patient, their concerns, what makes them tick . . . We're sort of tolerated . . . The more enlightened ones see that we are all important. . . whereas others will say . . . (of) our bit, 'it's not academic, it doesn't need to be there'...."* (Alison, 1:231-235)

> *".. (a Chemist colleague) said today, 'Oh, I'm a scientist, I look for facts and true things. You're very fluffy down in what you do. It's about feelings and just how the patient responds and what they're feeling about their medicine and it's not science.' So we're not scientists."* (Alison, 2:14)

The contrast seemed more subtle in the case of the Pharmacologists, who were scientists *and* qualified pharmacists; shared the Chemists' 'laboratory interests' and the PPG's 'human interests', and thus occupied an intermediate position between the two groups (Alison, 2:4).

The different ways in which various subject-groups conceptualised the particular outcomes they pursued in teaching were closely related to differences in how they regarded students, the relationships they formed with them and how they taught them, as the following comments by Alison illustrate:

> *in our practicals, we will sit alongside (students) for a long time and go through (their work) individually, like a patient and a health care professional. You know, you sit, have a dialogue, find out their underlying worries and concerns, and (the Chemists) don't. (Their teaching is) much more didactic; it's much more removed, just like their experiments are removed from anything . . . it all sort of feeds in one to the other, doesn't it, we teach like that because of the type of people we are . . "* (Alison, 2:510).

The work of each subject-group with the MPharm and OSDip students therefore appears to have involved a distinctively conceptualised object as well as outcome.

In addition to particular social relations with students, the distinctive teaching practices adopted by the PPG members involved a singular division of labour, as David, the Head of Division noted:

> "we say to (the PPG), we work on a 15-1 ratio (of students to lecturers) and we believe that they should be .... If they choose to work on a 15-3 or 15-4, that's their choice; they cannot come to us and say they're understaffed . . . But I think they see it as that's the way they want to teach. They teach in a relatively small group, one-to-one type environment. They're teaching professionalism, you know, which is appropriate to do at that level (of staffing)" (David, 1:92-96)

These observations by Alison and David suggest that the different ways in which the various subject-groups conceptualised the object of their work on the MPharm and OSDip courses were closely related to differences between the groups with regard to their specialist knowledge and preoccupations; values; working 'identity' and teaching practices. Chris similarly referred to differences between the PPG and the Chemists in terms of identity and values, including different relative valuations of research and teaching, but he also drew attention to individual biography:

> "It's not hard science, and I think that's the big element of it, and the research output (of the PPG) it hasn't been fantastic for a while, and I think that's another element that underlies it . . . I don't know how they see the interest in teaching and learning. . . I think they know that we do take more interest in that, and . . . we are one of the groups that are saying, well, actually we need more student contact . . . I think . . . to some extent it's a bit of, "Well, they're not real scientists" . . . and Ben and I come in not from an academic background so we are different. We talk differently and we don't fit perfectly into the model of university lecturer" (Chris, 2:105)

As I noted above, the ability to communicate appropriately and effectively with patients and other healthcare workers was held by the PPG to be a defining aspect of competent practice as a pharmacist. Contrasting the work of the PPG members and their 'hard scientist' colleagues, Alison pointed to a close relation between this aspect of the object as it was conceptualised by the PPG members; their professional

experience, skills and preoccupations; their individual dispositions and the rules or social norms that directed their behaviour when working together:

> "...we (the PPG) are more sociable, gregarious people. . . . we are in and out of each other's offices all the time . . . so I suppose we are unusual (compared with) the hard scientists who work . . . in much more isolation, because ... that's the nature of what they do, it's all about the titration or pipette and working on that particular reaction, whereas ours is about a co-operative thing . . . The pharmacist has got to get the right views from the doctors, got to tell the patient this, and it's all about phoning up, getting information, isn't it? . . . and that's why . . . who comes into this area is quite interesting because in a way that's an inherent... is it a skill? Something you learn? I don't know. It's something you need to be able to do, which is why all the people that we've got (in the PPG) are fantastic communicators . . . They're all very willing and open and I think that's what makes it quite special... that there is that sort of openness as we, we all know what each other does at weekends . . . I think we are unusual, but I think . . . for what we teach it's essential that you have that, because that's what you do with your patients. You make it open and accessible..."
> (Alison, 2:4-6)

Thus there are indications in the data that the distinctive ways in which the various subject-groups thought about the MPharm and OSDip students, and worked with them were largely shaped by differences between their members with regard to their training; specialist subject knowledge, skills and preoccupations; values; individual biographies and dispositions; professional experience and working 'identity'. In the terms of Activity Theory these various features or characteristics functioned as *cultural artefacts* which mediated the specific ways in which the members of the various groups conceptualised the object and outcome of their work.

The mediating cultural artefacts implicated in the work and learning of the PPG will be considered in more detail below. However, it is pertinent to note here it might also be plausibly argued that features like 'biography', disposition and 'working identity' are more appropriately understood as aspects of the individual lecturer, or 'Subject'. This potential ambiguity exemplifies the difficulty of determining where certain phenomena should be located within the conceptual framework of the Activity System. Some of this uncertainty may be attributable to my inexperience in using the concepts and principles of Activity Theory to analyse and interpret the data; therefore, more practice

may result in more nuanced discrimination. But the ambiguity may also indicate uncertainty in the conceptual framework of Activity Theory. In Chapter 4 I noted Helsinki's (op. cit.) observation that an outcome may be turned into an artefact, then later into a rule, or rules may be questioned, reinterpreted and turned into new tools. However, this implies that the function of phenomena *changes over time*; whereas the difficulty I have described is that some phenomena appear to perform different functions *simultaneously* (other examples will be considered below). Like Helsinki, Roth and Lee (op. cit.) emphasise that "any material entity is not fixed but can take different functions within an activity system" (p.199) but they also do not explain whether they think 'entities' perform different functions concurrently. These considerations may simply indicate a necessity for accounts of Activity Theory to clearly state that phenomena sometimes perform various functions simultaneously. However, it is also possible that they point to a need for more subtle conceptualisations of the main elements of the Activity System, the kinds of phenomena they comprise and the relations between them.

2 A multi-vocal community

It was apparent from the interviews and observations that there was consensus among the PPG members regarding the outcome they collectively pursued in their work with the MPharm and OSDip students. But it was also evident that individuals gave priority to different aspects of the common outcome, or had additional interests. Ben, for example, placed particular value on accurate dispensing and labelling of medicines (Ben, 1:61). He also emphasised the acquisition of knowledge (Ben, 1:268) and the development of students' confidence in their ability to make appropriate judgements and decisions (Ben, 1:181). Ella similarly placed a high value on accuracy. She attributed the same value to Fran (Ella, 1:209) and suggested all three had acquired it whilst working at Boydds, although she noted Chris did not share their preoccupation, despite also having worked at Boydds (Ella, 1:235-245).

In contrast, Alison was more concerned that students should learn to behave in an ethical, fair manner, and to treat customer-patients with respect, as "decision-making"

individuals. She therefore thought it important that the members modelled these characteristics in their work with the students:

> *"treating people . . . patients as decision-making, . . . (being) just, fair, all those characteristics that I want to see. So they're brilliant, (the members), they all have got that ethos that no one talks down to students, no one's rude, no one's offensive . . . "* (Alison, 1:240)

Heather shared Alison's concern that students should learn to communicate effectively with patients, enable them to make informed decisions and act in their best interests, arguing such behaviour distinguishes a professional pharmacist from a technician (Heather, 1:54-6).

Chris thought it important that students develop an understanding of the healthcare system in which they would work after graduating, especially the interests and concerns of patients, prescribers and other healthcare workers. Therefore he sought to devise frequent opportunities for students to meet doctors, nurses, customer-patients and others. For example, during one class I observed, he involved students in two practical activities, the first of which was led by an infection-control nurse at a local hospice, the second by a pharmacist who worked as an administrator in the local PCT. He also sought to foster an enquiring, critical attitude on the part of his students (Chris, 1:107), and James described a very similar ambition (James, 1:42).

Although Ella appeared to genuinely espouse the common conceptualisations of the object and outcome described above, she was the only member of the group to express a negative view of the working conditions experienced by community pharmacists:

> *"...you're taught, it's this great job you're going to have . . . respected . . . a meaningful healthcare professional that people appreciate, and it's just not really like that"* (Ella, 1:130)

> *"Community pharmacy is appalling . . . it's an absolute bloody nightmare and I would never, ever go back to it. "* (Ella, 2:28-30)

Thus while there was agreement among the group members with regard to the outcome they *collectively* pursued in their work with students, the PPG was a community in which there were multiple individual points of view, histories and interests. Within this

multi-vocal community, the conceptualisation of the outcome that prevailed at the time of the case-study therefore was imbued with tensions and competing interests, and was the product of continuing collective negotiation and reaffirmation. Indeed, the analysis in subsequent chapters shows that the maintenance or 'reproduction' of this conceptualisation was a prominent element in many episodes of learning that occurred during the case-study. The members of the PPG had constructed this conceptualisation over a four-year period that began when Alison became group head. Under the leadership of her predecessor, Graham, the work of the group had been guided by a rather different view of competent practice as a pharmacist, with corresponding differences in the way the group members regarded and behaved towards the students, although the motive of the group's work under both regimes appears to have been the same. When Graham retired and the members co-constructed new conceptualisations of the object and outcome, they had to learn to work differently with the students. The differences between the old and new conceptualisations; the process in which one replaced the other, and the learning that this process involved will be discussed in detail in Chapter 9.

In Chapter 5 I noted the observations by Helsinki (op, cit.) and Engeström (2000a) that people are often unaware of the motive and object of their Activity, because their attention is focused on the goals they pursue in their actions. However, the analysis in this chapter suggests this was not true of the PPG members. It could be argued that this is because, in the terms of Activity Theory, my analysis here confuses *actions* and *gaols* with *activity* and *outcome*. But an alternative explanation is that lecturers are regularly required to provide students, colleagues, employers, professional bodies and diverse other people with detailed articulations of the socio-cultural benefits of their courses; the purposes they pursue in their teaching and the view they take of the students with whom they work. Consequently, they are more aware of the motive, object and outcome of their Activity than Helsinki and Engeström suggest. The episodes of workplace learning observed during this case-study included occasions when Ella and Ben were plainly developing their awareness and understanding of the way in which the other members collectively conceptualised the object and outcome of

their work, whilst the others were themselves reaffirming or renegotiating those conceptualisations. Examples of these episodes will be discussed below.

3 The insights occasioned by attention to the object and outcome

The detailed attention to the object and intended outcome of working practices encouraged by adopting Activity Theory as an analytical perspective prompts five particular insights, which will become more evident in subsequent chapters. The members' collective conceptualisation of the students-as-object was closely related to their professional expertise, skills and experience; their values; biographies; 'working identities'; teaching practices, and the physical 'resources' like the Lab that are implicated in their work. As I have noted, Activity Theory encourages us to view all these features as diverse cultural artefacts that mediate between the members of the PPG, and the object and outcome of their work.

Secondly, there was also a close relation between the conceptualisation of the object; the division of labour within the community of the PPG and the social 'rules' governing its members behaviour towards one another and the students. Moreover, it will become evident below that changes in the object were closely related to changes in these other elements. That said, the distinctions between these various elements of the Activity System are sometimes not clear. Consequently, as I noted above, it can be difficult to decide where in the model of the Activity System it is most appropriate to locate particular phenomena. For example, it is debateable if we should view features like identity and values as mediating cultural artefacts, or as culturally derived characteristics of the Subject. Similarly, the multiple staffing of teaching sessions relates to the division of labour. But it is also a feature of particular teaching practices the PPG have devised to achieve their desired outcome, and it can be argued that teaching practices have the character and function of mediating cultural artefacts.

Thirdly, the outcomes lecturers are expected to pursue in their teaching, and correlated conceptualisations of the students-as-object, are formally articulated in course and module documents, and other written artefacts, which usually remain unchanged

throughout the five-year validation period. However, in the working activities of the members - that is, in their actions and conversations, these conceptualisations appeared to be much more dynamic. This was partly because the collective conceptualisations that guided their working practices were social constructions. Individuals gave priority to different aspects of the conceptualisation, and some also had additional interests. Thus the PPG community was multi-vocal, and the diversity of voices meant that the common conceptualisations of the object and outcome were subject to negotiation and reformulation, hence they changed over time. The analysis in Chapter 9 will indicate that on at least one occasion in the recent history of the PPG, when Alison replaced Graham as leader of the group, this process of negotiation and reformulation resulted in a substantial transformation of the conceptualisation in a process of, or closely akin to expansive learning.

Fourthly, the analysis of learning episodes in subsequent chapters will illustrate that careful attention to the history of the object leads to an understanding of the ways in which conceptualisations of the object changed over time, the reasons why these changes occurred and the learning they involved.

Fifthly, the analysis in subsequent chapters indicates that the episodes of workplace learning which occurred during the case-study were oriented to the object. Moreover, Engeström (1994) has noted that different kinds of learning (adaptive, investigative and expansive) have a different relation with the object, and this is also clearly indicated in the analysis that follows.

Summary and conclusions
At the time of the case-study the seven PPG members conceptualised competent practice as a pharmacist in very similar ways. Consequently, they took a common view of the MPharm and OSDip students as the object of their teaching, and of the outcome they sought to achieve in teaching them. These joint conceptualisations of the object and outcome of their work had been co-constructed during the previous four years, and the teaching practices of the PPG were oriented towards them. The conceptualisations

were mediated by the PPG members' training; professional expertise, skills, experience, priorities and preoccupations; their values; biographies; dispositions and 'working identities', that is by cultural artefacts which were themselves closely linked to the historical developments described in Chapter 6. These conceptualisations were distinct from those of other adjacent subject-groups whose members also taught the MPharm and OSDip students, and also from the conceptualisations which had prevailed when Graham was PPG leader. This finding appears to bear out the suggestion made in Chapter 5 that common disciplinary or specialist-subject interest is a defining feature of some academic teachers' workgroups and Activity Systems, rather than joint allocation to an administrative sub-division.

Although there was broad agreement among the seven members regarding the object and outcome of their work, their personal and professional histories differed. Hence they had varied points of view, dispositions and interests. As a result, individuals within this multi-voiced community tended to give priority to different aspects of the common outcome, or had additional interests and preoccupations. The collective conceptualisations of the object and outcome that guided their working activities therefore were imbued with tensions, which made them potentially unstable. Consequently, it was necessary for the members to frequently re-articulate and reaffirm various aspects of these conceptualisations in a process of collective externalisation and internalisation. This process contributed to the induction of the most recent newcomers, Ben and Ella. It also appeared to play an important role in ensuring that the actions of the various individuals were coordinated and the group was able to work effectively. As will be illustrated in Chapter 8, the maintenance or 'reproduction' of these conceptualisations therefore was a prominent element in some learning episodes during the case-study. In contrast, the analysis in Chapter 9 indicates that when Graham retired a lengthy process of learning ensued as the remaining members rejected the conceptualisations that had prevailed under his leadership and co-constructed radically different ones. Thus the learning that occurred during the case-study was often closely associated with these conceptualisations. Eraut (2008) argues that 'situated learning' theories often assume workplaces to be largely stable settings

and emphasise what is shared or collectively agreed amongst workers, when what is different is at least as important. However, adopting the concepts and principles of Activity Theory as the basis of the analysis in this and subsequent chapters helped to recognise that differences *within* the PPG, and *between* it and other groups were highly significant factors in the workplace learning that occurred.

Chapter 8 Learning: a pervasive constituent of 'every-day' working activities

Introduction

During the case-study I observed numerous 'episodes of learning' and narratives of other episodes were constructed in the interviews. Two of the latter episodes in particular were comparatively large in scale and appear to have occurred over a period of more than two years. These will be considered in Chapter 9. The observed episodes were far smaller, and seemingly happened over much shorter time-spans of between a few minutes and a few hours. However, the analysis in this chapter indicates it would be a mistake to view the numerous relatively brief, small-scale episodes as trivial. Rather, they illustrate that learning was a pervasive and often very ordinary constituent of the PPG's working activities.

In Chapter 5 I noted Engeström's (1994) definition of learning as:

> "... meaningful construction and creative use of intelligent cognitive tools, both internal mental models and external instruments ... participation, collaboration and dialogue in communities of practice ... also criticism of the given, as well as innovation and creation of new ideas, artefacts and forms of practice".

During the investigation, learning was sometimes an explicit or deliberate purpose of activities in which group members were engaged, and examples of these are discussed below. In other situations it was evident from people's behaviour, especially the questions they asked one another, that learning was happening even though it was not an explicit purpose. During some observations, however, it was much less apparent that episodes of learning were occurring. At these times, keeping Engeström's definition in mind helped me to recognise when and how learning was taking place, and thus how pervasive it was. Similarly, when analysing the data, the definition provided a valuable means of identifying and understanding the full extent and complexity of the learning process.

Given the purposes of the case-study and the constraints on space, it is not appropriate or possible to provide a detailed analysis of all the episodes that occurred. Therefore, I have chosen in this and the following chapter to concentrate on those I think best exemplify:

- the four dimensions of the PPG's workplace learning and the highly complex relations between them
- the richly detailed nature of each dimension, particularly the social and cultural dimensions
- the different 'forms' of learning that occurred (adaptive, investigative and expansive), or the different functions learning performed in relation to teaching practices
- the benefits and limitations of Activity Theory as an analytical perspective on the data
- potential directions for future research.

To provide a comprehensive analysis of the complex, multi-dimensional character of the workplace learning that occurred, and the frequency with which it was a constituent of commonplace working activities it is necessary to include detailed descriptions of some typical episodes.

1 The circumstances in which learning occurred

I observed episodes of learning in six circumstances or settings. These included two formally convened meetings held in the Lab. Each academic year the PPG undertakes a workload of teaching duties, determined through a process of negotiation within the School, especially at divisional meetings (David, 1:29; 1:92). The distribution of these duties to individuals is in turn negotiated among the PPG members on the basis of expertise; experience; preference; terms of employment and the number of lecturers required to staff various classes. The purpose of the two meetings was to allocate the PPG's teaching duties (broadly conceived) for the next six months and discuss in detail how all the practical classes would be organised and taught. Many of the latter involved the assessment of dispensing knowledge and skills, and 're-sits' for students

who failed such assessments. Each meeting involved two hours of complex, detailed planning, including amendments to the ways in which various session had been taught during the preceding academic year. All of the PPG members participated in the first meeting, except James, who was invited but chose to work elsewhere. Fran, Heather and James were invited to the second meeting but prior commitments prevented them attending.

The PPG have fewer formally convened meetings than most other subject-groups within the SBS. Instead, they generally discuss their work in three other circumstances. Firstly, because three, four or even more members of the group often teach a single 'class' together, they have frequent opportunities for discussion in the course of teaching. Secondly, group members often drop-in to one another's offices (which are immediately adjacent) to converse during lunch-breaks. Thirdly, there is no staff common room in the SBS, so most staff use *Café-coffee*, which is located on the first floor and also used by students. The PPG members usually go to *Cafe-Coffee* together at least three or four times each week, where they 'talk business' during their conversations. Examples of learning episodes which occurred in all these settings are analysed below.

In addition to the two formally convened meetings, four conversations in *Café-coffee* and four office conversations were observed during the case-study. These conversations involved five members of the PPG: Alison, Ben, Chris, Ella and Fran, in various permutations. In addition, Ian, a chemist who is Fran's husband and with whom Chris shares an office, participated in three of the conversations. However, apart from Ian, colleagues from other subject-groups rarely joined in these conversations. Moreover, while Fran was a frequent participant in the cafe and lunchtime office conversations, Heather and James were absent from all of them because the conversations occurred at times when they were not expected or paid to be at work in the University. Although some conversations observed in these diverse circumstances included occasional brief references to family and domestic topics, they were all

mainly concerned with work matters, and the behaviour of the PPG members, which will be analysed in detail below, was notably consistent in all of them.

2 Learning in brief commonplace conversations

The following short descriptions, which are drawn from field notes made during and immediately following each observation, refer to six episodes of learning.

1   Vivas

In the first formally convened meeting, the PPG members discussed how they would organise and manage final-year undergraduate project vivas, When Ben reminded them he had no experience of vivas, Alison, Chris, Fran and Heather quickly provided a collective description of what vivas are, why they are used and how they are managed. This conversation lasted approximately 7 minutes.

2   Action Learning Sets

During the second formally convened meeting, a brief consideration of how Ben and Chris had recently incorporated the use of Action Learning Sets in one module led to a discussion of how they thought this experience helped students to write better essays. Action Learning Sets had not been used as a teaching mode when Ella was a student, so she did not understand much of this discussion. Once they realised this, Chris and Ben, with contributions from Alison, spent 5 minutes repeating their explanations in much more detail so that Ella was able to form an understanding of what Action Learning Sets are; how they had been introduced and why they were thought to be beneficial.

3   Exam questions

Also during the second formally convened meeting there was a short discussion of the need for each member of the PPG to devise questions for the summer-term exams. Neither Ben nor Ella had done this before so Alison and Chris spent 7-8 minutes explaining how they designed exam questions, the procedure by which questions were

scrutinised and approved, and how they would support Ben and Ella when the time came to prepare further questions.

4   *Responding to certain kinds of student question*

Early one morning, Ben dropped in to Alison's office to seek advice. The previous day, an OSDip student had asked Ben a complicated question involving differences between pharmacy law and procedures in the UK and USA. Ben had promised to discuss this with the student and wanted to provide her with an accurate, detailed answer. However, he was anxious about his limited knowledge of American pharmacy law. He hoped Alison would provide the missing detail. Instead, she first prompted Ben to narrate his conversation with the student. She next described how, in the same situation, she would have helped the student to identify how she could find the answer to her own question rather than undertaking to provide the answer for her, and she explained why this was her preferred response. Ben then agreed to take this course of action and they rehearsed what he would say to the student when she came to see him later that day. However, Ben remained anxious about his lack of knowledge so Alison concluded by briefly summarising what she thought were the main legal and procedural differences in the situation referred to by the student. This conversation lasted for approximately 20 minutes.

5   *project titles*

This 35 minute *Café-coffee* conversation began with Ben noting he was being pressed to propose titles of student projects he would be willing to supervise during the next academic year. This initiated a discussion in which Alison, Chris and Ian explained to Ben how they identified appropriate project topics, after which they helped him to devise some titles he could submit for consideration. Ben then described his concerns about some of the project students he was currently supervising. This was his first year of supervising. He was clearly anxious about this task and worried that, because he lacked experience, he didn't know "what constitutes a failure." Alison, Chris and Ben discussed the marking criteria for the projects; how much help they thought it appropriate for a supervisor to provide and Ben's supervision of particular students.

Alison and Chris explained how they would deal with the various situations Ben described, and offered a good deal of patient advice.

6 *Marking exam papers*

During a 15 minute coffee break, which they took on their own, Ben and Chris discussed exam papers Ben was marking. Ben was anxious about whether he was marking the papers as he should be. Chris, who would be second marking the work, elicited a detailed description of how Ben was approaching the task. He then explained how he went about it himself and reassured Ben that his approach was appropriate.

Using the concepts and principles of Activity Theory as an analytical perspective helps to reveal the intricate nature of the learning that occurred during these relatively brief, commonplace interactions. In these conversations, PPG members individually and collectively described various procedures they enacted in their work, and the rationales for them. They also articulated problematic situations and rehearsed ways of dealing with them. These processes of externalisation provided the two most recent newcomers, Ben and Ella, with opportunities to formulate and internalise new understandings and models of behaviour through a process of adaptive learning, and thus to act in future in ways that were consistent with the protocols and procedures of the Activity System. This included extending their understanding of the ways in which their colleagues conceptualised the object and outcome of their work; the values that informed the work of their colleagues; the PPG's social rules, and the nature and role of various mediating cultural artefacts implicated in their work, for example: vivas; final-year undergraduate projects and supervisory tutorials; action learning sets; essays and exam questions. The 'substance' of Ben's learning also included pharmacy law and practice in the USA.

These conversations also provided opportunities for more established, experienced members to engage in adaptive learning by repeating, and renegotiating or reconfirming their own grasp of the matters under discussion.

In Activity Theory, externalisation is assumed to occur when there is a need to resolve tensions and inconsistencies within the Activity System. In these conversations it appears to have been primarily occasioned by the need to avoid or resolve inconsistencies between the behaviour of the newcomers and more established, experienced members, and also to ensure the behaviour of the latter remained consistent. This suggests that externalisation plays a complex role in enabling the Activity System to reproduce and maintain itself. That said, in these episodes the 'roles' or 'identities' of *newcomer* and *more established, experienced member* of the community were rather less fixed than one might expect, especially perhaps from the accounts offered by Lave and Wenger (op. cit.). If we take Ben as an example, in the discussion of project vivas his role was that of newcomer, but in the conversation about Action Learning Sets he was one of the more experienced people.

All six conversations were very similar in manner: fluent, coherent and sustained, witty, mutually respectful and generally amiable, with a minor thread of banter woven through the discussion. All those present seemed to be offered equal opportunity to take part in the discussion and all contributions were accorded respect and consideration. Ben in particular was afforded numerous opportunities to raise concerns or describe anxieties in detail, which his colleagues, especially Alison, readily discussed with him and offered advice or support. Thus the PPG's social rules seem to have facilitated the induction of the newcomers and the reproduction of the Activity System.

Two further aspects of these conversations are notable. Firstly, from my observations and their comments during the interviews, I think it unlikely any of the PPG members would say they consciously set out to instruct their colleagues in these episodes. But it did seem there was a deliberate intention in each case to enable Ben and Ella to better

understand and participate in various working activities. Therefore, we can probably say some learning that occurred was deliberate. However, it appeared that the more established, experienced members' learning during these episodes was tacit, implicit and neither conscious nor deliberate. Roth and Lee (op. cit.) propose that "tools are made an object of consciousness only when they fail to perform, such as during a breakdown" (p202). Different writers seem to attach different meanings to the term 'tools' and it is possible that Roth and Lee have followed Vygotsky's (op. cit.) rather restricted definition which I referred to in Chapter 5. However, in the episodes of learning analysed here it appeared that cultural artefacts like vivas and exam questions were made the "object of consciousness" in order to induct newcomers and thus reproduce the Activity System, not because the tools had failed to perform.

Secondly, the members of the PPG appeared to regard all these conversations as entirely ordinary events, which suggests that learning is an integral element in many of their interactions during work-a-day activities. Hence the members' experience is consistent with Billet's (2001) general conclusion that learning at work is the "inevitable product of everyday thinking and acting, shaped by workplace practices in which individuals participate" (p19), and with Hodkinson and Hodkinson's (2005) more particular conclusion that teachers "constantly" learn during working activities.

3 Learning while observing colleagues

Several times during the case-study Ben and Ella arranged to watch other members of the PPG at work with the deliberate and explicit intention of learning from their observation. First-hand observation, often including an element of helping out, seemed to be a mode of learning Ben in particular favoured and he frequently asked if he could 'sit-in on' sessions that were unfamiliar to him. Two such occasions are briefly described and analysed here.

1 Ben observes Alison teaching a 'creams and ointments' class

On the day that Alison was shadowed, Ben had arranged to observe her teaching MPharm students how to prepare creams and ointments in the Lab. Alison began by

giving a 15 minute introductory lecture on the chemistry of creams and ointments, while Ben stood behind the student group, watching her. Later, he explained he was very confident about the practical preparation of creams and ointments, but it was twenty years since he had studied the chemistry involved, so he was particularly anxious to see what 'chemistry content' Alison included in her talk and how she explained this to the students.

After her introductory lecture, Alison spent 20 minutes demonstrating the preparation of a cream and an ointment. During this stage of the lesson Ben made a brief contribution concerning the need to use gloves when handling one of the constituents. The students then dispersed to their workstations to make up their creams and ointments, while Alison and Ben circulated amongst them, offering advice and help. Although Ben was ostensibly 'sitting in on' the class he took a full part in this process for the next ninety minutes, appearing to be fully conversant with the practical operations and well able to support students. It seemed evident from this that his main need had been to observe the introductory stage, although it is likely that the opportunity to learn how Alison managed the session generally also helped him to feel more confident about subsequently teaching the class himself.

In the afternoon Alison and Ben repeated the class with another group of students. Alison again provided the introduction, but this time Ben took a small part, explaining the best techniques for mixing ointments, and how to dispense particular prescriptions for creams and ointments.

2 Ben observes Chris recruiting students for a volunteer project
Students at Anon University are encouraged to take part in various voluntary projects within the local community. To this end, Chris had recently established a project in which MPharm and OSDip students provided free advice to people in retail pharmacies. On the day that Ben was shadowed, Chris had arranged to attend a recruitment event for the volunteer scheme. Ben was intending to become involved in

the project himself and had asked if he could observe how Chris managed the recruitment process.

After lunch, Ben and Chris went to the hall where the recruitment event was to be held. Chris showed Ben information leaflets he had prepared for prospective volunteers and Ben read these carefully. When the first students approached their stall, Ben listened to Chris explaining the project and how students could participate in it. After he had observed two or three of these conversations, Ben began to contribute to the discussion. Following three or four joint conversations he started to deal with students independently of Chris. In the course of an hour, Chris and Ben were approached by almost fifty students, and Ben dealt with approximately twenty of these on his own.

These two learning episodes, which Ben deliberately and explicitly initiated, further indicate the complex character of the adaptive learning that occurred during the case-study. On both occasions, Ben did not simply observe the activities which occurred; he also participated in them, albeit in an ancillary role - helping out, as he described it. He could do this because neither set of circumstances was wholly unfamiliar. He was adept at making creams and ointments, and could work effectively with students in the Lab. It was the chemistry content and management of the class that he needed to learn. Similarly, he had given advice to patients in retail pharmacies for many years, but needed to learn from Chris how the volunteer scheme worked and, in particular, how he explained it to the students. The process of adaptive learning on these occasions therefore involved observing the unfamiliar knowledge and behaviour being enacted by Alison and Chris; internalising this; combining it with his extant professional expertise and experience, and beginning to act out what was for him a new aspect of practice, although his participation in the *Creams and ointments* classes was more peripheral than in the recruitment event. The details of his learning included:
- diverse cultural artefacts, for example, the chemistry of creams and ointments, and a particular mode of teaching this; the organisation and management of a practical class; the design and detail of the student volunteer scheme, and the values that inform it

- the social rules governing relations between PPG members and students in diverse settings
- the way in which the PPG members collectively conceptualised the object and outcome of their work.

As was the case with some of the other examples considered below, these two episodes might be interpreted as instances of 'learning by peripheral participation' (Lave and Wenger, op. cit). However, adopting Activity Theory as the 'lens' through which to view them and thus regarding them as examples of adaptive learning enables us to distinguish the different functions that learning performed, a distinction that is important if we are to develop a comprehensive understanding of the complex nature of workplace learning. Moreover, Activity Theory explicitly prompts us to give systematic attention to the relations in each episode between learning and the cultural artefacts or resources implicated in working practices; the social rules governing behaviour, and the histories, dispositions and interests of the individuals involved. This helps to reveal the consistently multifaceted character of the learning that was woven into commonplace activities and interactions.

4 Learning while collectively assessing students' work

The episode of learning analysed in this section occurred in the Lab whilst Ella was being shadowed and involved Chris, Ella, Fran, Heather and James. The PPG members were conducting re-sit dispensing tests, which I noted above were a particular locus of tension in their work. They were required to test two groups in succession and each group had 90 minutes to complete test. The assessment was a very labour-intensive activity, in part because the prescriptions the students were given to dispense contained deliberate errors or lacunae which each student was required to identify and discuss with one or other of the members, who role-played the part of the prescribing doctor. When students in the first group had completed the tasks, they handed-in their papers and the medications they had dispensed, and left the Lab. The PPG members immediately began marking the submitted work. At the end of the test there was a short interval of about 15 minutes before the second group began their assessment. The

five lecturers needed to complete the first batch of marking by the time the second group had finished their test, which was another reason for the high staff-student ratio. Marking in these circumstances requires each lecturer to make rapid, complex judgements about the work of particular students which are consistent with the judgements their colleagues are simultaneously making in relation to the work of others. This necessitates a high degree of co-ordination or cross-referral amongst the lecturers, which is partly accomplished through double-marking a portion of the submissions.

For the purposes of a full analysis, it is necessary to describe the interactions and activities in detail. To facilitate description and analysis, the conversation has been divided into five stages.

Stage 1: Chris and Ella: negotiating values, standards and a judgement, with help from Heather (15 minutes)

At 10.30 Ella joined Chris in a side room of the Lab to begin marking the work of students who had already handed in their papers. After a few moments, they began to discuss whether or not to pass a particular student. Their conversation was a thoughtful, professional consideration of the nuances involved in assessing the student's work. Eventually, Chris called Heather in to ask her advice as a very experienced practitioner and a judgement was quickly formulated to which all three could assent. At this point Fran arrived to help with the marking.

Stage 2: Chris, Fran and James: negotiating values, standards and judgements (15 mins)

Ella and Heather went back to work in the Lab with the remaining students, while Chris and Fran, joined by James, continued marking in the side room. The three lecturers began to discuss the scripts they were marking. They were clearly determined to make judgements that were as fair as possible and the discussion was mainly concerned with establishing their minimum requirements with regard to the labelling of medicines dispensed by the students. For 10 minutes they discussed the aspects they

thought were legally and professionally essential, those where the student could be given the benefit of nuance, and what could and could not be compensated for.

Stage 3: Ella, Fran and James: negotiating values, standards and judgements (35 mins)

When the test ended, Ella joined Fran and James in the side room to mark, while Heather and Chris prepared the Lab for the next group. Ella began to double-mark a submission which James had just first-marked. After a few moments, she sought Fran's view about certain aspects of the work. They then asked James to explain his first marking and the advice he had given the student during the test. After this Fran and Ella continued to discuss the work for some time before they reached a joint decision to concur with James' mark. As in the previous stage, the three lecturers were concerned to achieve a balance in their assessment judgements between the maintenance of legal and professional standards on the one hand, and fairness to the student on the other.

This stage of the overall conversation lasted for about thirty five minutes during which time there were several disagreements about the marks awarded to students' work. When these occurred the individuals involved explained their judgements logically and in detail, and concessions were made with humour and good grace.

Stage 4: Chris, Ella, Fran and James: explaining decisions to Chris (5 mins)

Heather remained with the second group of students, who had just begun their test, while Chris rejoined his colleagues and for five minutes Fran explained to him some of the marking decisions they had made in his absence.

Stage 5: Ella, Fran and James: negotiating values, standards and judgements (10 mins)

Ella, James and Fran continued marking, pausing periodically to confer about decisions. Discussing with Fran a script James had first-marked, Ella asked, "But what if the student says . ...?" Although the rest of her comment was inaudible, it quickly

became evident she did not agree with James's mark and was attributing her doubts to the student as a means to challenge it. James explained his judgement, and then in the course of a short debate changed his view to accord with that of Ella and Fran.

The collective assessment of dispensing tests is a common feature of the PPG's work and a very similar set of interactions involving Alison, Ben, Ella and Fran was observed whilst Ben was being shadowed. In the example described here, which lasted for almost ninety minutes, four different permutations of PPG members participated in a sustained, iterative process of externalisation, negotiation and internalisation. In this process they were co-constructing a communal practice which would enable them to make judgements and decisions they believed were logical, consistent and fair. At the same time they were learning in the sense of reaffirming and elaborating their understanding of:
- the criteria their colleagues used to make their assessment judgements
- how they interpreted those criteria in particular cases
- how they formed a judgement in such cases.
  Moreover, the two aspects of the process, co-constructing and learning, seemed to be so closely related in these interactions as to appear inseparable or synonymous.

The details of their learning included:
- diverse cultural artefacts, for example practical dispensing tests; various educational, academic, legal and professional values, and their relative importance; individual perceptions of professional standards derived from experience as practising pharmacists; the process of applying these values to particular cases and of making compensatory judgements
- various social rules, especially those governing how to raise and resolve differences of judgement, and to work together effectively in demanding circumstances

- the collective conceptualisation of the object and outcome of their work.

Because the lecturers' goal was to mark submitted work in a coordinated manner which was consistent with their assessment of students in previous tests – i.e. to reproduce or maintain practice, it seems most apt to regard this as a process of adaptive learning. Engeström (1994) concludes that the function of adaptive learning is typically achieved by the "copying of readily available correct behaviours" (pp.14-15). However, as was the case when Ben learned from observing Alison and Chris at work, the adaptive learning which occurred in this episode seems to have been a rather more complex process than Engeström's description might suggest. The five participants in this conversation proceeded by conscious and deliberate reference to the principles and values they believed should govern their behaviour in such situations; to recollections of previous judgements and decisions they had made, and to their experience of pharmacy practice, rather than by simply re-enacting or replicating specific sequences of behaviour. Thus, in the complex, contingent circumstances they encountered in their work, adaptive learning enabled the members to act in ways that were coordinated and consistent over time. It was in this sense that adaptive learning enabled them to 'reproduce' or maintain established practice.

Two further aspects of these interactions are notable. Firstly, during their discussions, the PPG members all made frequent reference to their professional experience of dispensing in various settings, comparing and contrasting what would be acceptable in practice with what particular students had done. These cross-references seem to indicate that, although the immediate goal of their actions was a fair and sound assessment of the students' performance in the dispensing test, all five lecturers were conscious of the relation between their actions and the intended outcome of their teaching work, which required that students were able to monitor prescriptions, and dispense and label medicines in an accurate, legal, ethical manner. As was noted previously, Helsinki (op, cit.) and Engeström (2000a) have proposed that people are usually not conscious of the object and motive of their *activity* because attention tends to focus on immediate goals and *actions*. However, this conversation further indicates

that the PPG members were often fully aware of the connection, which was also articulated in the description of intended learning outcomes and assessment tasks provided in the MPharm course documents.

Secondly, James and Heather were participants in these interactions, and thus able to contribute to and benefit from them. However, I noted previously that their part-time status often prevented them from participating in the conversations observed during the case-study and this could have detrimental effects for them or their colleagues. By way of example, absence from conversations of the kind described here might result in their assessment judgements becoming less consistent with those of their colleagues.

5 Learning in the course of reviewing, revising and rehearsing teaching sessions

During many of their conversations various permutations of the members jointly constructed accounts of how they had planned, organised and enacted the most recent iteration of particular teaching sessions. In each conversation they evaluated their past practice; drew lessons from their experience; decided whether amendments were needed, and rehearsed how they would carry out the forthcoming iteration. These conversations were again highly complex. They involved both adaptive and investigative learning. Moreover, it often seemed that various members of the PPG were simultaneously engaged in different forms of learning – for example, Ben and Ella in adaptive, and Chris and Alison in investigative learning. Sometimes there appeared to be a correlation between the kind of learning individuals engaged in and the length of time they had been members of the group, as perhaps one might expect. On other occasions, however, individuals seemed to engage in both adaptive and investigative learning during a single interlude. Two such learning episodes are briefly analysed in this section.

1 Gastro-intestinal (GI) dispensing

Discussion of this practical class occurred during the second formally convened meeting and lasted for 25 minutes. Typically, Alison initiated the discussion by asking, "What did we do with GI dispensing last year?" Then she, Ben and Chris

collaboratively reconstructed the session in stages, evaluating each stage in detail as they went and redesigning stages where they thought this necessary. In this manner, they systematically revised and rehearsed the session, including how they would prepare the students for it, and how they would manage the assessment and feedback stages. Throughout this conversation Ella was silent but appeared to be listening intently. When Chris commented on her silence, she replied, "That's because I'm taking it all in."

2 A Healthy Heart

This is an important half-day practical class in which students simulate providing advice to members of the public. During the first formally convened meeting, the group discussed the scenario to be presented to students, the intended learning outcomes; the procedures for managing the session and the difficulties that had arisen the previous year, which were mainly concerned with assessment. Alison again initiated a detailed, systematic review by asking "What were the problems last year?" A lengthy discussion of potential changes to the assessment and marking process ensued.

This class further illustrates the problem described earlier that the PPG members encounter in much of their work: how to assess large numbers of students and give them feedback on their performances in various practical classes when there is very little time available in which to achieve this. For various reasons, it has to be done within the session or at least on same day and the need to find better ways of managing this challenge is a theme that ran through much of the discussion in the two formally convened meetings and in conversations observed in other settings. (The primary contradiction in this Activity System appears to manifest itself as a tension between the time, staff-student ratios and other 'resources' made available to the PPG by the funding regimes under which their work is financed, and the resources the group members believe are required to work effectively with the students to achieve their intended outcome.)

The discussion of this session continued for 25 minutes and ended in a decision to adopt broadly the same procedures used in the previous iteration, with one or two very minor modifications. Only those who were present would be aware of the detailed, thoughtful review that had been conducted during this discussion. Only a small number of minor changes would be made to the management of the session as a result of the discussion. Nonetheless, it had enabled all those present to re-state and reconsider some significant problems they encounter in many of the sessions they teach. By the end of the discussion, Alison, Ben and Chris had negotiated a shared perception of the difficulties; rehearsed some ways in which improvements might be made and agreed to retain their current procedure for the session in question, whilst working towards developing improved procedures over the next few months. The role played in learning by conversations like this that appear to 'come to nothing' will be further discussed below.

As I noted above, during the case-study there were numerous conversations of the kind illustrated here in which members collaboratively reconstructed, evaluated, adapted and rehearsed diverse episodes of teaching. In these conversations, those who were present constructed a communal recollection and interpretation of the short-term history of their own working activities. This mode of conversation enabled the members to engage in a process of externalisation and internalisation, which provided opportunities to:

- articulate a shared understanding of what they were trying to achieve with the students – i.e. their main teaching aims. This included how they expected the students to analyse and respond to the situations they encountered in various simulations.

- evaluate previous ways of working and consider how to improve them, including the introduction of new or improved teaching resources

- consider how best to actually organise and manage particular sessions, including the assessment aspect

   −   rehearse the amended plans to construct a shared understanding of how the new forms of working practice should be enacted.

The learning that occurred in this process of collective externalisation-internalisation appears to have been highly complicated. It involved most elements of the Activity System (i.e. the object and outcome; division of labour; rules and mediating cultural artefacts). It also involved *adaptive* learning which, like some of the episodes analysed above, had two aspects. Firstly, the discussions provided the newcomers, Ben and Ella, with readily accessible models of diverse behaviour they could internalise and 'reproduce'. However, as I have previously noted, this does not imply that adaptive learning was a process of simple imitation. In these conversations, as on other occasions when adaptive learning was observed, it seemed that Ben and Ella were combining readily accessible behaviours with their own experience and dispositions as the basis for generating contingent behaviour in the future that would be broadly consistent with the rules of the PPG but also have an idiosyncratic aspect. This process had the effect of maintaining or reproducing the Activity System in the sense that their future behaviour would be recognisably 'akin to' the behaviour of other group members, but not a mechanical copy. Secondly, as was the case in other episodes analysed above, more established, experienced members had opportunities to reconsider and adapt or reconfirm their understandings and practices.

The same conversations also provided the members, especially those who were more established and experienced, with opportunities to engage in *investigative* learning as they evaluated previous ways of working and considered how to improve them. (I shall suggest below that conversations of this kind may often be a precursor of, and a necessary condition for expansive learning.) Such improvements included the introduction of new or adapted teaching resources, or mediating cultural artefacts. For example, Chris undertook to design a questionnaire as a means to examine whether a class in which students met people who were being prescribed Methadone led to changes in their attitudes towards substance mis-users and Methadone treatment.

The two most recent newcomers, Ella and Ben, were often able to participate in and contribute to the process of investigative learning, even though they had not previously taken part in the particular teaching activity under consideration. Ben himself was clearly aware of this:

> *"being new to it, I can throw a different viewpoint on things that they may not have considered . . . (or) I might throw in something which is based on inexperience but can be equally valuable, and I feel that, you know, it's all given and received with a positive light."* (Ben, 1:391)

As Evans et al (op. cit.) observe, newcomers often bring with them a good deal of relevant knowledge and experience. Ben and Ella had considerable experience of pharmacy practice, which in Ben's case included extensive involvement in pre-registration training, and they were able to draw on this experience to make their contributions. Moreover, as Ben noted, the naïve questions and observations of the newcomers sometimes acted as a stimulus to learning.

The models of behaviour made available to Ben and Ella in these discussions included the *mode* of conversation itself which, when viewed in the terms of Activity Theory, appears to have had a complex, uncertain character. It was a particular discursive procedure in which teaching activities could be reviewed, evaluated and changed, a procedure that the group appeared to favour and which seems to have been an established aspect of their work together. As a mode of discourse it therefore mediated between the members of the PPG and the student learning that was the object of their work. Thus in this regard it functioned as a distinctive mediating cultural artefact. At the same time, the mode of conversation indicated how the PPG members thought professional pharmacists should review, evaluate and improve their practice. Thus it also constituted an aspect of the outcome the PPG members pursued in their work.

The *manner* of the conversations also appears to have had an ambiguous character. The good-humoured, cooperative manner in which they were conducted, with each individual clearly welcome to contribute and a collective respect shown for all contributions, typified the PPG's rules. However, the manner of the conversations also exemplified how the members thought pharmacists should behave towards one

another, their patients and other healthcare workers, i.e. in a sensitive, respectful manner. In the course of the shadowings it was evident that they try to model this behaviour in their relations with their students, and to train their students to behave in this way. The *manner* of the conversations therefore appears to have also functioned as an element in their conceptualisations of the object and outcome, and as a mediating cultural artefact. This apparent ambiguity further illustrates the difficulty I noted in Chapter 6 of deciding the function that particular phenomena perform within the Activity System.

6 Learning in a lunchtime office conversation

A second conversation which involved both adaptive and investigative learning occurred one lunchtime in the office shared by Alison and Fran. It lasted for approximately 70 minutes, and involved Alison, Chris and Fran, although the latter was absent for the first 25 minutes.

As I noted above, during the case-study the PPG members frequently discussed problematic aspects of their assessment procedures. One difficulty was the need to assess large numbers of students in a relatively short period of time. In addition, quite large numbers of students failed their dispensing tests at the first attempt, including many whom the members regarded as 'good' students, and no one could explain why this happened. Those who did fail were provided with intensive coaching and almost all passed at the second attempt, but the need for re-sits increased the PPG's workload and the number of assessments which must be accommodated in the Lab. This experience led the PPG to question the validity of the dispensing tests, and these doubts were closely related to their shared perception that there was an underlying historic tension between what they referred to as the "professional training" and "academic education" aspects of the MPharm. During the case-study the members, especially Alison and Chris, frequently discussed these problems and ways in which they might be resolved. Each time, however, their discussion appeared to end inconclusively. Thus assessment was a 'knotty problem' which the group continued to

'pick at' in a process of intermittent externalisation and investigative learning. In this conversation assessment problems are a recurrent theme.

To analyse the intricate nature of the learning implicated in this conversation, it is necessary to describe the discussion in detail. To aid analysis, the conversation has been divided into five stages and, to help the reader, the analytical comments on four of these have been separately labelled.

12.30   Stage 1: a potential revision of an exam (3 minutes)

Alison was working in her office when Chris 'popped-in' to ask what matters were on the agenda for a forthcoming exam preparation meeting. Alison briefly mentioned a few items; then they began to discuss how they might revise a particular exam they regarded as problematic.

Analysis

Although very brief, this stage of the conversation included the joint externalisation of an assessment problem, which began a thread or process of investigative learning that was continued in subsequent stages.

Stage 2: a potential assay project for visiting Spanish students (22 mins)

Without a pause, Chris abruptly announced he had been asked to work with a group of Spanish pharmacy students who would visit the university in the summer break. They began to consider what kind of three-month project he might offer the students. Chris briefly described one he had in mind: burning aroma therapy oils and assaying the air in the room. Then he began to think through the project aloud, rehearsing how an assay experiment might be framed and carried out, especially the measurement aspect. Alison helped him to do this, also thinking aloud. She was concerned that neither of them knew much about gas chromatography. They wondered whether a similar experiment had been carried out before and decided probably not. Then, in a detailed, rapid, closely focussed dialogue, they discussed the methodology, methods, chemistry and practical considerations of such a project. Was it a feasible experiment? Was it

appropriate for fourth-year undergraduates? How much would it cost? Was it a useful activity for Chris to be involved in? They briefly discussed alternative projects before Fran entered the office, interrupting the discussion.

Analysis

During this stage of the conversation, Chris and Alison were both engaged in investigative learning through their participation in a dialogue in which they sought to co-construct what, at least for them, was a new potential student project – and thus a new intelligent tool, or mediating cultural artefact. The dialogue largely comprised a process of externalisation, in which they jointly articulated what they knew, what they were unsure about and what they were ignorant of – and thus what they needed to learn more about before they could decide if the project was feasible.

Stage 3: a potential assessment project for the Spanish students (25 minutes)

As Fran settled at her computer Alison said, "I'm interested in why people fail exams when they are quite capable". After a moment it became clear that she had this in mind as a potential project topic for the Spanish students. Chris wondered aloud how much correlation there was between the marks students gained in their dispensing tests and their final degree marks. He and Alison discussed the "skills" required to dispense medicines in a competent manner and the extent to which these are "professional" or "academic". They then considered whether the Spanish students might conduct a project that examined the correlation to which Chris had referred.

Alison observed that the students who had recently failed the dispensing test were "not stupid" and again asked why so many failed at their first attempt. For some moments she and Chris engaged in a rapid, detailed discussion of the possible reasons, considering whether the results might be influenced by ethnicity; gender; a lack of particular skills on the part of some students; the ways in which they assessed the students and student anxiety. Then they discussed how they might frame a small research project in which the Spanish students examined these matters. Alison in particular expressed doubts about the extent to which the dispensing exams and OSCEs

were a valid test of the students' ability to practise as pharmacists. "Are we training them to practise," she asked, "Or providing them with an academic training and qualification?" Chris replied that he didn't think test papers really indicated what students could do. Alison then asked, "But what would?" Fran appeared to respond to Alison's question, but her words were largely inaudible and her intervention caused this stage of the conversation to end inconclusively.

Analysis

This rapid, thoughtful discussion lasted 25 minutes and encompassed core aspects of the PPG's work, including the way in which they conceptualised the object and outcome, and the kinds of cultural artefacts they employed to 'work on' the students in order to achieve the intended outcome. In the course of the discussion, Alison and Chris engaged in criticism of the given and investigative, or at least proto-investigative learning as they externalised and picked at the assessment problems. Another strand of investigative learning emerged and became interwoven with this as they considered the formulation of a second potential student project to examine the assessment problems they were discussing. In this discussion they specifically articulated the tension or contradiction they perceived there to be between the 'professional training' and 'academic education' aspects of the MPharm, and identified this as a possible cause of the problems they were experiencing.

Stage 4: improving Fran's slides and teaching of pharmacy law (15 mins)
Fran called attention to her computer where she was preparing slides for a lecture on Dispensing Law and Veterinary medications. She was concerned that the students would find her lesson boring. Alison and Chris offered advice about improving the legibility and design of the slides. Then, Fran and Chris, with occasional comments from Alison, discussed at length how to organise and manage the lecture, and how Fran could make "a dry subject" more interesting. Chris described how he taught similar sessions; then encouraged Fran to articulate her main aims for the class. Once these had been clarified, the three of them began to re-plan the lecture. A few moments later, Chris shifted the conversation to a broader discussion of the way in which they

examined students' knowledge of pharmacy law, and wondered if they could change to an open-book exam. Fran thought not because in her experience employers believed the current modes of examination required students to memorise the law, which was what the employers wanted. Fran then explained the law governing the kinds of veterinary advice Pharmacists can offer. Alison in particular was clearly learning about this for the first time, and the three of them spent five minutes exploring the implications of the law using various hypothetical examples of concrete circumstances. Following this, they again discussed the lecture Fran was planning for three or four minutes before a student at the door interrupted them.

Analysis

This stage of the conversation involved a process of joint externalisation relating to the lecture Fran was planning, and how the PPG assessed knowledge of pharmacy law. The models of behaviour articulated by Alison and Chris enabled Fran to engage in adaptive learning with regard to the lecture. Also during this stage, Chris and Alison, especially the latter, were engaged in adaptive learning about aspects of pharmacy law as they were explained by Fran. The employers' preference for closed book exams, to which Fran referred, appears to function as another externally derived tension or contradiction within the Activity System of the PPG, and thus as another cause of the knotty assessment problems the group frequently picked at.

Stage 5: further discussion of assessment (3 mins)

When the student had left, Chris asked if they needed to discuss arrangements for the coaching sessions they were to offer to the students who had failed the exam. This prompted Alison to ask if they provided too much practice for the dispensing tests; she thought perhaps this made the students anxious, which might contribute to the high failure rate. Chris promised to think about his and returned to his own office, ending the conversation.

Analysing this lunchtime office conversation using the concepts and principles of Activity Theory reveals the complex episodes of adaptive and investigative learning that were woven through it. It illustrates in particular how the learning that occurred was stimulated, at least partly, by two historically accumulated tensions or contradictions in the PPG's work. The episodes of learning involved the articulation of these tensions, and also:

- the collaborative externalisation of problems, especially aspects of their assessment practices and Fran's intended lecture

- joint criticism of the given in the form of closed book examinations, dispensing tests and the MPharm curriculum model

- the co-construction of new cultural artefacts or intelligent tools, in the form of two potential student projects, and the redesign of one in the form of Fran's lecture.

This conversation was permeated by a process of learning, which had historical, social, cultural and individual aspects. Moreover, as some of the previous examples indicate, in terms of the activities and interactions observed during the case-study it was an entirely ordinary event, a normal part of work. Thus it further illustrates that learning was a highly complex, multifaceted and pervasive, almost ubiquitous constituent of the members' working activities.

7 Learning in interactions with colleagues 'from' other Activity Systems

In these examples and almost all of the learning episodes observed in the case-study the members were learning mainly with and from one another. However, during the day Chris was shadowed he was involved in several lengthy interactions with two healthcare colleagues whose work was primarily located in other Activity Systems. Both of these occasions involved a complex, four-dimensional process of learning, but they are included here for two other reasons. Firstly, they point to difficulties in analysing learning that occurs in interactions between people 'from' different Activity Systems. Secondly, they raise more general considerations about the categorisation of learning.

1 Conversing with Laura

One morning in the Lab, Chris jointly taught the OSDip students with Laura, an infection-control nurse in a local hospice. Chris and Laura were longstanding friends. Nonetheless, on several occasions during the morning when Laura talked about her work it was evident that Chris was learning about certain aspects of it. When the session ended, they went to *Café-coffee*, where they conversed for almost an hour over lunch. Their discussion included family matters, but they also talked again about Laura's work; the prevalence of various infections among the general population and a potential student project concerning the role of pharmacists in spreading infections. Towards the end of their break, Chris reiterated his belief that Pharmacy students benefit from any contact with other healthcare workers because this helps to develop their knowledge of the UK healthcare system, and their understanding of the needs of prescribers, patients and carers. From the questions Laura asked him about the students and his work with them, and her reactions to some of the answers she received, it was clear she was learning during this part of the conversation.

2 Conversing with Nishat

When Laura left, Chris was joined by Nishat, a pharmacist who works for the local PCT. Nishat and Chris had devised a role-play activity for the OSDip students and whilst the students prepared for this the two of them talked in his office for forty-five minutes. For most of this time they discussed two schemes the PCT had recently implemented to increase the involvement of local pharmacists in diagnosing minor ailments and conducting medicines-use-reviews with patients. During this discussion, they each described their experience of the two schemes; explained the professional concerns they felt the schemes raised; reported what other pharmacists had told them and identified what they each thought were the benefits and weaknesses of the schemes. It was evident from their remarks and their reactions that Nishat and Chris were frequently learning from each other during this discussion: about, for example, the ways in which the two schemes were organised, managed and funded; the professional interests and concerns of various pharmacists in the city; how various

local pharmacies were organised and carried on their business, and the number of prescriptions pharmacists in different pharmacies dispensed during a typical day.

In terms of Engeström's taxonomy, it is more difficult to categorise the learning that occurred during these two interactions than was the case with the episodes considered previously, in which the participants were chiefly or exclusively members of the PPG. The uncertainty arises because it is difficult to discern what influence, if any, Chris's learning might have on the PPG's practice, and thus what function it might perform. The preceding analysis of other episodes suggests that aspects of his learning would be eventually incorporated into the cultural artefacts and conceptualisation of the outcome implicated in his work, and subsequently into those of his PPG colleagues. However, this is only conjecture. So far as Laura and Nishat are concerned there are no firm grounds within the data for making even these tentative assumptions because they make only these brief, isolated appearances in the case-study.

These particular difficulties point to more general reasons for caution when attempting to categorise learning, even when it involves only people who are members of the same Activity System. Firstly, the effects of some learning episodes appeared to have long, intricate trajectories which were difficult to follow. This suggests it sometimes may be difficult to identify the specific effects of a particular episode of learning, and to distinguish the point at which it either ceases to be influential or becomes implicated in learning of another kind. For example, some episodes of apparently inconclusive investigative learning seemed to evolve into, or function as precursors of learning that had an expansive character. [26] A second reason for caution previously noted is that on several occasions various participants in a particular discussion appeared to be simultaneously engaged in different kinds of learning. Furthermore, during a single activity or interaction particular individuals engaged in both adaptive and investigative

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[26] These uncertainties apply, of course, to many, if not all of the 'episodes' of learning discussed above and below.

learning. One relatively short 'event' therefore might be said to involve a complex set of 'learning episodes'. Thus although the preceding analyses indicate that Engeström's taxonomy can prompt significant insights into the learning process, they also point to the need for caution in applying the taxonomy to distinguish different kinds of learning and their effects.

Given the difficulty in analysing these two conversations, it is unfortunate there were not more opportunities during the case-study to observe learning episodes involving members of different Activity Systems. This must be regarded as a significant shortcoming of the case-study and it indicates a need for research that studies interactions between lecturers 'from' different Activity Systems; the ways in which elements from one System become incorporated into others and the effects this has on working practices.

8 Learning and the rules

The rules of behaviour established under Alison's leadership of the PPG appear to have been shaped largely by the members' dispositions and professional experience, the latter in turn being influenced by the historical circumstances analysed in Chapter 6. The rules required members to be mutually respectful; work collaboratively; contribute time and ideas to group discussions; acknowledge personal inadequacies and help one another. They also encouraged members to experiment with new forms of practice, and not become anxious if these experiments were unsuccessful. The rules generated conversations that were generally democratic and inclusive, and in which the members were encouraged to review and evaluate practice, and make innovative proposals. A significant feature of the rules and their characteristic modes of discourse was that they fostered the process often referred to as 'kite-flying' (thinking aloud in a speculative manner, or trying ideas out aloud), and this will be discussed in more detail below. The rules therefore encouraged social relations and interactions which afforded members frequent opportunities to criticise the given, and were consistent with Hodkinson and Hodkinson's (2005) description of a 'collaborative culture'.

The rules significantly influenced how opportunities to learn occurred during the PPG's working activities and the forms those opportunities took. Moreover, they indicated the kinds of behaviour the PPG members thought students should learn as trainee pharmacists. Consequently, learning during the case-study was often concerned with creating or improving various means (intelligent tools or cultural artefacts) by which they could teach students to interact with patients and other healthcare workers in the desired manner. Thus the rules also played a substantial part in directing the learning of the PPG members. Although the rules encouraged participation in activities that involved learning, they also led the PPG to hold few formally convened meetings, and the preference for discussing 'business' in coffee breaks and impromptu office conversations prevented part-time members from participating in many of the learning episodes that occurred on such occasions.

9 Learning and the division of labour

The preceding analysis indicates that the division of labour within the PPG was closely related to learning in at least two ways. Firstly, the actual process in which work was distributed between group members in the course of the two formally convened meetings involved a good deal of learning. Secondly, the terms of their employment directly influenced the extent to which Fran, Heather and James participated in various activities and thus the opportunities they were afforded to learn. When they were absent, they could not participate in the construction of shared understandings that helped to coordinate the work of the group members and strengthen social relations amongst those who were present. Nor were the other members of the group able to draw on their experience or benefit from their ideas. In addition, Chris noted that when discussions led to changes in working practices, the individuals who had been absent from the discussion often found these changes difficult to understand or adapt to, at least initially, Consequently, their absence disrupted the process of internalisation on the part of those who had participated (Chris 2, 63). These difficulties were exacerbated because the rules led the PPG to frequently discuss 'business' spontaneously when part-time members were absent.

James reported that his part-time status also affected learning because it often made him feel it was inappropriate to critique current practices or suggest changes, and it seems likely that other part-timers sometimes experienced similar feelings:

> *"it's their full-time job, and it's their bread and butter and I don't want to seem to be kind of interfering . . . "* (James 1. 66)

Thus the opportunities individual members of the PPG were afforded to participate in learning were influenced by the terms of their employment; the procedures the group adopted to distribute work amongst themselves; the actual distribution of that work and the ways in which they organised their interactions.

10 Learning and mediating cultural artefacts

Cultural artefacts played at least two roles in the learning that occurred during the case-study. Firstly, learning was oriented towards the object and outcome, and cultural artefacts mediated the way in which these were conceptualised. As I noted above, the influential factors included the PPG members' training; professional expertise, skills, experience, priorities and preoccupations; their values; dispositions and 'working identities'. Cultural artefacts therefore shaped the direction of learning. Secondly, the members used numerous diverse cultural artefacts ("intelligent tools") to 'work on' the students, and learning was often concerned with the creation, selection, evaluation, reproduction or improvement of these artefacts.

The numerous, diverse cultural phenomena, or artefacts implicated in the episodes of learning analysed above included:

- the Lab and its contents, including generic and proprietary drugs; drug compendiums and formularies; dispensing IT equipment; PC-based dispensing records; workstations
- dispensing activities and other practical classes
- lectures; Action Learning Sets; student projects; role plays and simulations;
- one-to-one coaching
- ethical and legal case-studies

- the pharmacy-student volunteer scheme
- Virtual-Anon – the University's intranet-based 'learning environment'
- real and simulated doctors and patients
- external speakers
- websites
- scientific journals
- text books relating to, for example, the law.

The analysis therefore provides insights into the complex cultural dimension of academic teachers' work and learning. In addition, it draws attention to the diverse phenomena that the conceptual category *mediating cultural artefacts* appears to include and the difficulties encountered in trying to determine the scope of the concept. It seems likely there would be value in further research to examine the cultural artefacts implicated in the teaching practices and workplace learning of academic teachers in other disciplines and professions.

11 Learning and conversations that 'came to nothing'

During the case-study various member of the PPG, especially Alison and Chris, engaged in repeated conversations on the same theme which seemed to end inconclusively. Activity Theory provides a means of understanding these conversations and their role in learning. Viewed separately such conversations seem rather futile. However, when considered as a sequence, they indicate that in the context of the case-study *investigative* learning generally did not happen in short, neatly self-contained learning 'events'. Instead it tended to occur over time in a series of discontinuous episodes, which often appeared to come to nothing. This kind of iterative, inconclusive picking at a problem was particularly evident where investigative learning was concerned with complex, intractable, or knotty problems. Such conversations seemed to function as a means of probing the bounds of the given, of exploring the elasticity of the prevailing circumstances and the kinds of change they would allow. Thus they enabled the members to discern whether or not problems or tensions could be resolved within the broad confines of the given. Although some individual episodes of learning

on a particular theme appeared to end inconclusively – to come to nothing – it seems the cumulative effect was for a resolution to eventually emerge. It appears, therefore, that inconclusive conversations were sometimes an essential aspect of investigative learning. Moreover, in cases where the tension could not be resolved within the confines of the existing context and practices, such conversations helped pave the way for a process of learning in which the context and practices were challenged and transformed. An example of this process will be discussed in Chapter 9.

12 Learning and 'Flying Kites'

In the learning episodes analysed in this chapter, collective evaluations of practice, and the collaborative externalisation and investigation of problems depended upon members being able and willing to articulate their thoughts and experience. In most cases an important element in this process was the kind of speculative talk often referred to as 'flying kites', especially when the purpose of discussion was to identify and explore potential solutions in the form of new working practices. As I previously noted, the PPG's rules offered the members of the group frequent opportunities to evaluate their practice and discuss problems they encountered in their work in a frank and detailed manner, although Heather and James were afforded far fewer opportunities as a consequence of the division of labour. The rules also required that each member present during a conversation was afforded more or less equal opportunity to participate in the discussion and each person's comments were given due consideration. It therefore appears that the rules provided the members with broadly similar opportunities to fly kites. However, in the interactions observed during the case-study, it was Alison and Chris who did most of the 'kite-flying'. When she was interviewed, Alison suggested that this was largely the result of personal disposition. The role of disposition and kite-flying in the workplace learning of the PPG members will be considered in more detail in Chapter 10.

Finally, the complex, detailed nature of the *inter-personal* learning described above suggests that individuals need to internalise an extremely rich and diverse array of social and cultural detail in order to participate in the working practices of a group like the PPG. This raises the question of how such learning becomes incorporated in individual thought and action. The case-study was not designed to examine the process of internalisation, or *intra-personal* learning, and the data generated in the investigation offer little indication of how it might occur, although the collective rehearsals of future teaching activities may be relevant[27]. It is notable in this regard that some writers propose Activity Theory needs to develop a more robust account of the relation between collective activity and individual action (for example, Minnis and John-Steiner, 2001; Davydov, 1999). It seems therefore that an investigation of the manner in which internalisation happens in the course of learning episodes like those described above would be a potentially valuable line of future enquiry, although such an investigation would clearly pose methodological challenges.

Conclusions

In this chapter I have analysed episodes of learning which occurred in diverse circumstances and interactions. The PPG members apparently regarded these interactions as entirely ordinary, which suggests that learning with and from one-another is a pervasive constituent of their working activities as academic teachers. All these episodes were relatively brief and small-in-scale. Nonetheless, in each case learning was four-dimensional, and each dimension involved numerous significant details. Learning was also complex, for each episode involved most or all the elements of the Activity System. The analysis in this chapter has identified, in particular, the social and cultural aspects of the learning process.

The *adaptive* learning that occurred served to reproduce, or maintain and coordinate the Activity System of the PPG and the teaching practices of its members by

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[27] Some researchers report that workplace learning often involves the production of internal 'scripts' for future action (Eraut, 1994 and references therein).

performing three functions. Specific episodes of adaptive learning often included two or all three of these functions. The first was the induction of the most recent newcomers. Many of the episodes analysed above provided Ben and Ella with readily available models of diverse kinds of behaviour they could internalise and 'reproduce'. However, this procedure was more complex than Engeström's succinct reference to the copying of readily available correct behaviours might suggest. Rather than simply imitating their colleagues, it appeared that Ben and Ella combined elements of the modelled behaviour with their own expertise, experience and dispositions, so that their future behaviour would be broadly consistent with the rules and practices of the PPG, but also have an idiosyncratic aspect. Some studies conclude that working activities are often organised in ways that facilitate workers' access to the knowledge they need to learn in order to sustain working practices, thus ensuring continued achievement of the work-goals (for example, Billet, 2004; Lave, op. cit., and Darah, 1996). In particular, work is reported to be structured to provide newcomers with an understanding of the social roles and relations, and cultural values of the workplace and working practices. Although many learning episodes that occurred during the case-study functioned to induct the two most recent newcomers, there were no reasons to conclude that the working practices of the PPG incorporated this kind of underlying structure.

The second function of adaptive learning was to ensure that, in a multi-vocal community, the behaviour, knowledge and understandings of the more established, experience members remained consistent, especially their conceptualisations of the object and intended outcome of their teaching activities.

The third function was to co-ordinate the actions of individual PPG members over time. This function seems to be given relatively little attention in Engeström's discussions of workplace learning but the analysis above clearly indicates its importance in the PPG's work. In this regard it is notable that many of the PPG's teaching activities were collaborative; thus the need to coordinate the actions of various individuals was a prominent feature of their work.

Whereas *adaptive* learning functioned to perpetuate and coordinate teaching practices, *investigative* learning was concerned with change and discovery. It occurred when the members evaluated their practice and considered how they could make what they thought would be improvements, and when they sought to solve problems, explain puzzles or overcome challenges. These processes involved "criticism of the given" and, on occasions, the articulation, or externalisation. of "historically accumulated" tensions or contradictions – for example, between 'professional training' and 'academic education', and between competing preferences regarding modes of examining students' knowledge of the law. Episodes of investigative learning often involved conversations that seemed to come to nothing, and some strands of investigative learning were not concluded when the case-study ended. However, this process of picking at knotty problems in an apparently inconclusive fashion seems to have been an important, perhaps essential element in investigative learning. Flying kites played an important role in critique of the given and picking at knotty problems. Although it involved change and discovery, the function of investigative learning was to occasion adaptation and innovation within the broad bounds of the given. Hence, when Alison replaced Graham as PPG leader, 'blocked' or 'ineffectual' investigative learning functioned as the precursor to an episode of expansive-like learning, which will be analysed in the next chapter.

Despite being the two most recent newcomers to the PPG, Ben and Ella were able to participate in and contribute to investigative learning, by drawing on their considerable experience of pharmacy practice and training. This finding is consistent with the conclusion drawn by Evans et al (op. cit.) that newcomers often bring with them a good deal of knowledge and experience. At the same time, however, the naïve questions and observations of the newcomers sometimes also acted as a stimulus to investigative learning. That said, although it is generally useful and valid for the purposes of analysis to refer to *newcomers* and *more experienced, established members* of the PPG, these roles or identities were contingent rather than fixed.

In some episodes of *adaptive* learning, learning was a deliberate, explicit intention. On other occasions, there seemed to be a conscious intent to enable colleagues to better understand and participate in working activities. But sometimes adaptive learning appeared to be unconscious, incidental and tacit. When *investigative* learning occurred in the process of reviewing and evaluating practice, it appeared to be a conscious and deliberate intention. At other times, however, the conscious preoccupation was the problem, challenge or puzzle under consideration, and learning seemed to be much more 'incidental'.

Although adaptive and investigative learning performed different functions, both kinds sometimes occurred during a single conversation, activity, or episode of learning. On other occasions, individuals seemed to engage in both adaptive and investigative learning within the same event.

Adaptive and investigative learning were facilitated by the rules and division of labour. However, both these elements of the Activity System also restricted the opportunities to learn that were afforded to part-time staff, especially Heather and James, and thus the opportunities they had to contribute to the learning of their colleagues. The rules facilitated the induction of the newcomers – and thus the maintenance of the Activity System – and also investigative learning. In this regard, the case-study suggests there would be benefits in further research to examine how the rules in other workgroups of academic teachers promote or constrain their learning. I also noted two other potential themes for further research. The first was the role played in learning and the formation of teaching practices by interactions between academic teachers and members of other Activity Systems, including other workgroups of academic teachers. The second was the process of internalisation.

The analysis presented in this chapter has indicated four caveats with regard to the concepts and principles of Activity Theory. Firstly, *externalisation* is most commonly associated with the articulation and solution of problems, and thus with investigative and expansive learning. However, in the episodes discussed here, it often played an

important role in the reproduction, or maintenance and coordination of the Activity System.

Secondly, Engeström (1994) identifies *criticism of the given* as one of the three aspects or constituent features of learning. The assumption in Activity Theory seems to be that critique occurs in its fullest form in the course of expansive learning. However, as I noted earlier, it appeared to be a prominent element of the rules and mediating cultural artefacts implicated in the PPG's work, and it seemed to play a significant role in enabling or promoting adaptive, investigative and expansive-like learning, a point I will return to in more detail in the next chapter.

Thirdly, although most of the conversations considered above were primarily concerned with goals and actions, they often appeared to be consciously and deliberately informed by the overall motive and outcome of the PPG's work. Moreover, collective conceptualisations of the object and outcome were frequently an overt focus of discussion. As was noted previously, this seems to contradict the suggestion that people are frequently unaware of the object and motive of their Activity. I also noted with regard to caveats that Roth and Lee (op. cit.) propose tools or cultural artefacts are only made the "object of consciousness" when they fail to perform. However, in the episodes of learning analysed above, this also happened when newcomers were being inducted, and when PPG members collaboratively reviewed and evaluated their past practice.

Fourthly, Engeström's taxonomy of learning has prompted significant insights into the learning that occurred and the different functions it performed. However, the two episodes of learning involving people whose primary workplaces were other Activity Systems suggest that it is less easy to apply the taxonomy in these circumstances. Moreover the complex nature of the learning that occurred during the case-study indicates there is a general need for caution in applying the taxonomy.

I shall expand on some of these conclusions at the end of the next chapter.

Chapter 9 Two larger-scale, longer-term episodes of investigative and 'expansive' learning

Introduction

In this chapter I shall analyse narratives of two learning episodes constructed during interviews. Compared with the episodes considered in Chapter 8, both appear to have been larger in scale and occurred over much longer time-periods. The first relates to the design and introduction of the OSDip course, which stimulated a lengthy, complex process of adaptive and investigative learning. The second concerns the changes that occurred when Alison took over from Graham as PPG leader. This involved investigative and expansive, or quasi-expansive learning. Adopting Activity Theory as an analytical perspective on these narratives again prompts detailed insights into the complex, multi-dimensional character of the learning that occurred and the numerous small but significant details involved in each dimension. It also indicates how learning was stimulated by tensions within the Activity System which were generated by the historical circumstances analysed in Chapter 6 and it further illustrates the various functions learning performed with regard to teaching practices. In addition, it points up some of the relations between learning, and individual disposition and interests, which will be elaborated in Chapter 10.

To provide a comprehensive and coherent analysis, it is again necessary to include detailed descriptions of events and interactions. These are drawn from verbatim transcripts, especially those of interviews with Alison.

1 Designing and introducing the OSDip course

As I noted previously, the OSDip course is a one-year, full-time post-graduate Diploma course for experienced overseas (non-EU) pharmacists who wish to qualify to work in the UK, something encouraged by the UK government. The School had been invited to introduce the course by the RPSGB, and because it involved the payment of overseas-student fees it was expected to generate a substantial profit. Alison, who was preparing to take over PPG leadership from Graham at the time of the decision, was asked to assume responsibility for designing, validating and introducing the course.

These were things she had not done before, but she inferred she needed to agree in order to gain promotion. The School had not previously offered such a course, nor recruited such students. Moreover, because the new course must satisfy the requirements of the University and the RPSGB it involved a particularly demanding process of curriculum development. Nonetheless, Alison reported she was offered no formally organised support in designing the course and she described herself as being at a loss to know how to begin. Moreover, when she approached some colleagues for help, she found this was either withheld or "had a price attached to it". Alison's narrative is quoted at length here because it describes the 'process' and 'content' of her learning,

> *"there was no support. . . you're supposed to have a course development team, aren't you? . . . and I'm a very social person. I like doing things in a team. . . Graham had no interest. . . So, it was me (and) Fran, but Fran's input isn't really into course design. . . Where do I begin? How do I get help with this? Where do I go? . . . I'd never designed a course before. . . . What modules do I need? How do I design those modules? . . . How do I make the assessment loading fair? How do I make it a good course for the students? It seemed like I had this blank bit of paper and loads of (bureaucratic) documentation . . . and I'm scared of failing the students and the University and the School and me. It was my reputation. . . and I had to make something of it . . ."* (Alison, 2:165-175)

Eventually, Alison did find colleagues who were able and willing to help,

> *I thought, I'm not doing this on my own, because I hate working on my own. I'm very bad on my own. So I . . . spoke to Oliver, who had recently done an MSc accreditation, and I said, what did you put in yours? Give me your forms . . . and so I got his input there. . . . Chris had just come in to do a day a week, so I sat down with him, even though he was new. He was just someone to sound things off to, because he's brilliant like that. I said, 'how would you begin?' He'd say, 'well, you could do it this way'. . . Fran went on maternity leave and she had cover, a guy called Peter, and . . . I remember this one meeting and it wasn't even a proper meeting, it was like one of our Café-Coffee specials, Peter, Chris and me, and I said, 'Chaps, I need a bit of help here . . . to just get me started with talking; I talk better than I write. Let's think, if you had to design a course with all these things you've got to do, how would you do it' And, bless them, we spent three hours down at Café-Coffee. I bought them lots and lots of coffee and doughnuts, and we just started to bounce some ideas around and, between the three of us . . . we came up with, well, how about. . . . .*

.....(That) gave me a push to think, yes, there's some bones here. . . I can start to create these modules. I can see now. . . where it's going, and from that, I was away. So it took just one meeting and I needed people. I couldn't do it myself. I couldn't sit on my own, but from . . . Oliver's input and this one impromptu meeting on a Friday afternoon . . . they were my saviours in a way. They got me started and then from there I could build it up... (ibid)

The process of learning described here by Alison was initiated by the decision to introduce a new group of students into the PPG's work. As Alison and Ben explained, these students were sufficiently different from the familiar MPharm students as to constitute a new object:

". . . I know the (MPharm) students . . . I understand their psyche because (I've) seen them since 1990 and I've been one. Whereas to be an overseas pharmacist coming over.... it's a very different thing, trying to understand sometimes what makes some of them do some of the things (they do). . . and what their reason for doing the course might be..." (Alison, 1:110)

"the (OSDip students) obviously are pharmacists in their own right. In their own countries . . . they're qualified and they need . . . to be able to transfer their skills into this country.... (Ben, 1:246)

The task Alison and, to a lesser extent, her PPG colleagues faced was to create the cultural artefacts that would provide them with the means to 'work on' the new students. Initially this involved learning how to design a new postgraduate course and participate in all the associated institutional validation procedures. Subsequently, it entailed the development of other artefacts in the form of new teaching and assessment activities, including modified versions of those the group had developed for use on the MPharm. The PPG members needed to invent these new forms of practice because they did not already exist within the School, and if they existed elsewhere they were not known to the PPG. In this regard it is notable that neither Alison nor her colleagues tried to find out about similar extant courses at other universities.

Although the MPharm and OSDip students differed to the extent that the latter constituted a new object, the motive and intended outcome of the PPG's work with the two groups were very similar. Moreover, the new practices that Alison and her colleagues invented did not challenge the extant context in any fundamental way, or

require a transformation of the PPG as an Activity System. Rather they were accommodated within the confines of the given. Thus the design and introduction of the OSDip course involved a combination of adaptive and investigative, but not expansive learning.

Two interactions in particular contributed to the initial phase of the learning process. The first was Alison's discussion with Oliver, the head of an adjacent division, during which he gave her a copy of the MSc curriculum and course documents he had produced within another Activity System for another group of students and purpose, or object and outcome. Alison then introduced these cultural artefacts into the PPG, where they became implicated in her conversation with Chris and Peter in *Café-Coffee*. In the course of this three-hour long conversation, Alison, Chris and Peter collaboratively articulated or externalised the problems she faced, and sought to resolve them. The two conversations provided Alison with the stimulus to design the course and an outline on which to base it – "the push" and "some bones".

The long conversation in *Café-Coffee* and the other discussions with Chris which Alison refers to in her narrative also contributed to two changes that occurred when Graham left the PPG. The first was the development of a new informal division of labour within the PPG, in which Alison and Chris tended to generate new ideas, which Fran, Heather and, to a lesser extent, James helped to develop and implement (these matters will be discussed in more detail in Chapter 10). The second change was the emergence of new rules which encouraged the members to work collaboratively; contribute time and ideas to group discussions; acknowledge personal inadequacies and help one another. The new division of labour and rules were exemplified in the later episodes of learning which were considered in Chapter 8 and their development will be further discussed below. However, it is pertinent to note here that this long conversation was very similar to several I analysed in Chapter 8, which Alison described as "our *Café-Coffee* specials". This similarity emphasises the importance of '*Café-Coffee*' as a site of learning in the work of the PPG, and its function as a socio-cultural resource.

Alison's narrative indicates the role played in the learning process by the dispositions, interests and attributes (knowledge, skills and experience) of various individuals. At this time, the PPG was in a state of flux, and a community of particularly diverse traditions, interests and dispositions. Graham, who was a member of the first generation and about to retire, apparently showed no interest in the new course. Fran was initially available, although about to go on maternity leave. However, Alison described innovative course design as being beyond the scope of Fran's expertise and interests. Chris was a recently appointed part-time lecturer. Nonetheless he was both disposed and able to contribute to investigative learning, having experience of pharmacy practice and teaching. Peter was a new and temporary, part-time member of the PPG, but apparently also willing and able to contribute. It is notable that no mention was made of Heather or James in the narrative of this learning episode. (Neither Ben nor Ella were members at this time.) Alison's own preference for solving problems in conversation with others and her willingness to seek help are also evident influences on the learning process, as are her determination to solve the problem and her fear of failing others and herself, and thus damaging her reputation.

Alison's account makes clear that in her case this learning episode had a particularly strong emotional dimension, and involved considerable personal change. This included a change in working identity, and a growth in autonomy, self-esteem and confidence:

> "... it was a passage ... I don't know whether it was becoming a grown-up, taking responsibility, making decisions. I'd hidden behind Graham up until that. Graham would tell me what to actually eat at lunch time for the last seven years when I was with him. I had no power, no choice, no freedom, nothing, and it was frustrating, But then suddenly he went and then they said, 'Design a course' ... And suddenly it went from no freedom, no say in anything and how it ran, to absolute freedom, and it was. . . intoxication, it was dizzy . . and scary, you know, like freedom is scary. So, yeah, it was an amazing initiation, and now it's like fine, it's all contained and I'm not scared of it anymore. But, oh, the fear, the emotion. . . It wasn't just a job; it was. . . the most amazing passage to go through. . .If I see something now that needs doing . . . . I go, oh, come on, I've designed an OSDip course, let's just do it' . . . Whereas before, it was like, 'Oh, I've got

to do this. I'm really scared of it; I don't want to do it'... " (Alison, 2:174-176) [28]

These comments indicate there was a reciprocal relationship between disposition and learning, at least on this occasion. They also provide insights into how the PPG's rules developed. As a result of this episode, Alison became more adventurous; more willing to take on responsibilities, engage in new activities and experiment with new working practices, and more ready to encourage her colleagues to do the same. Hence the personal changes she experienced had an effect on the rules that directed the PPG members' behaviour; their modes of conversation (and thus the cultural artefacts implicated in their work), and the informal division of labour within the group. These effects, in turn, influenced the opportunities to learn which were subsequently afforded to the members of the group, including Alison herself. These conclusions are consistent with Biesta et al's (op. cit.) finding that "Learning can . . . contribute to changes in some dispositions, and thus to changes in a person's identity" (ibid).

Once the OSDip course had been designed and validated, the processes of investigative learning, externalisation and internalisation continued, as Alison and her PPG colleagues learned how to implement the new curriculum and work effectively with the new kinds of students they had recruited. During the case study the PPG were teaching the second cohort of OSDip students and continuing to develop new mediating artefacts in the form of new teaching practices, and new rules in the form of social relation with the students,

> *"there's been teething troubles . . . there's a lot about treating them as very mature students. They are mature. They've been pharmacists; they've been pharmacists in Nigeria for twenty years. "* (Alison, 2:174)

> *"We're certain to make some changes with the OSDip course, I think, because . . . . we learnt something from the first cohort; we'll learn something from the second cohort and we'll look into whether what we're doing is the best we can be doing at the moment. So that will change. "*
> (Chris, 1:91)

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[28] In the interviews Alison sometimes muddled the chronology of events. When she designed the OSDip course, she had been nominated to succeed Graham, but he had not yet retired

The introduction of the OSDip students into the work of the PPG therefore initiated a process of adaptive and investigative learning that continued for more than two years.

2 Alison replaces Graham as head of the PPG

In this section I shall analyse the learning that occurred when Alison replaced Graham as PPG leader. I will again draw extensively on Alison's narrative because it provides a detailed description of the changes that happened and the processes by which they came about. It is important to note, therefore, that her account was corroborated during interviews with David, Chris, Heather and James, who, like Alison, used the way in which the PPG marked students' dispensing tests to exemplify the changes.

> *"(Graham) was quite autocratic and punitive. So when a student came with their piece of work . . . he'd read them all, and go round singing the Death March if they'd (overlooked) an overdose. . . Then he would . . . go up and go, "Minus 3 for this, minus 5 for this," and go through their work and they'd start with 100% and you'd just knock them down until they were sobbing wrecks. So . . . the minute . . . he left, I said "Right, that is out, I am not going to humiliate them by . . . singing. You never, ever sing that thing . . . and if a person makes a mistake . . . we don't (discuss) it in public, we do it quietly, and we try and boost confidence." Because our students were terrified of coming into our lab. They all hated it. They used to dread dispensing... They would get . . . like quarter past eight waiting outside the doors so scared and Graham would also open the door early and then lock them in, so that people who were two minutes after the time couldn't get in the class, also no one could leave . . . every little, little detail, very much a detailed pharmacist of the old school where everything's got to be absolutely right. . . I agree it's got to be right, but it's also much more about . . . interacting with the patient. There was no patient contact in his day; it was all prescription. "Is that prescription right? Yes. Good, on with the next." Nothing about you interacted with the person taking this medicine. So we got rid of that. Basically it's pass/fail. "Is it safe, isn't it safe?" So what (if) the label's on crooked? All right a (pharmacy) practice would say, "It would be nice if it was on straight", (but) you don't take minus 3 off because it's slightly . . . we used to almost get a protractor out and decide how crooked the label was . . . at times I found it the most frustrating experience... and if the student cries that's even better. You know, let's humiliate people as much as we... because it makes me feel better. Anyway, got rid of that and so that's the main, biggest change."* (Alison: 1, 256)

In this section of her narrative Alison described in detail the procedure used to mark dispensing tests under Graham's leadership, the values and attitudes it embodied, and

the character of the social relations between staff and students it involved. These cultural artefacts and rules were closely related to a particular conceptualisation of the MPharm students as the object of the PPG's work which derived from a view of pharmacy as a product-oriented profession and pharmacists as dispensing technicians. All of these factors were in turn related to the historical circumstances discussed in Chapter 6. Alison's narrative also implies that all the members except Graham regarded these working practices as inappropriate and felt a strong urge to change them. Thus, as I noted above, the PPG at this time was a community of particularly diverse interests, histories and traditions. It was not possible to solve the problem and dispel the tension through investigative learning whilst Graham remained leader, however, because he had the power to obstruct change. This power stemmed from his position as group head, and from his membership of the influential first generation who had come to occupy some of the senior positions within the School and whose 'ideas' dominated at the time. While Graham retained his position and power the tensions within the PPG were suppressed.

Eventually, however, Graham announced his retirement and the obstruction was removed:

> ". . . we had a meeting in July, and I said, "Right, we won't have words with Graham because we know he's . . . on his way out. . . What shall we do differently when he goes? He goes in September. (In) October the students are starting with us. . . . How are we going to throw it all up in the air? How are we going to make it better?" And there was Chris and there was Fran and me, and we just came up with this new idea: pass/fail . . . it's right or wrong and we don't have to make students suffer and it's about positively building them up. You start with nothing and you earn, you don't start with 100 and you take away . . . Yeah, so that was quite an important meeting that one. It was very good." (Alison: 1, 272)

With Graham's retirement the PPG community was reconfigured and three of the remaining members, Alison, Chris and Fran, were able to hold a meeting at which they collaboratively externalised the tension in their work and considered how they could change their practice to overcome it. This resulted in the introduction of a new assessment procedure which embodied different values and attitudes, knowledge(s)

and skills, and involved different social relations among PPG members and with students. These new artefacts and rules were closely associated with a new conceptualisation of the MPharm students which was informed by a jointly held a view of pharmacy as a person-oriented profession and pharmacists as healthcare professionals, a view that again was directly related to the historical circumstances analysed in Chapter 6. This change in assessment practices typified a more general change in the teaching practices of the PPG, which was also directly related to those historical circumstances, as David's description made clear,

> "almost before (Graham had) left the building . . . . 'This is how you put on a label on a bottle. This is an overdose. If you don't pick up that overdose you will then get zero,' and so on: that changed overnight and it became much more . . . "Think about what you're doing. You've got to dispense this prescription; what things do you need to look at or what do you need to tell the patient?" rather than learning your lines by rote. So that was the major change, it was moving it up from the old technical college teaching to university and then adding a Master's type deliberate area of uncertainty" (David, 1:116, emphasis added)

Neither Heather nor James participated in the "important" July meeting at which the new assessment practice was conceived. Alison reported that Heather was away on holiday and James had been invited but chose instead to work as a locum pharmacist that day. Thus James had been afforded the opportunity to participate in the learning that occurred, but his disposition and individual interests led him to eschew it. Subsequently, however, Heather and James did participate in the process by which the PPG members learned to implement the new assessment procedure and develop the detailed practices associated with it. The initial stage of this process was described by Alison as follows:

> "we'd all been, up until that point, saying that we didn't like the way Graham had been doing (things) . . . and we'd all. . . had discussions about . . . the students being really upset, undermining their confidence. So in a sense when the first class came along and we were able to not have (Graham) there doing it his way, I remember it being very scary, but . . . we'd already worked together in the room and knew each other quite well, so it seemed to just evolve. There wasn't a point where we had to have a meeting before and say "Right, when a student does this, you say this..." it kind of evolved naturally because we were all that kind of temperament. It was only (Graham) that was out of kilter with us and he was the boss and

telling us to mark with his scheme. . . . We were similar. We (all) had the same idea at that meeting (in July) where we said "We want to encourage the students", and we discussed a lot at that meeting how to do it . . . So when we came to the first class . . . we told the students it was a new marking scheme (but) . . . in fact it was for us to try it out and at the end we met and said "How did you find that? What worked, what didn't for that?" And so . . . it seemed to evolve but I think underneath there'd been a lot of mutiny going on in the subtext of it, without Graham being aware of it.. . . And then it was just finally he left and we could bring it in and it was almost ready to go. It was like the baby waiting to be delivered; it had fully formed and it was just its birth in that class . . . We were very much all in the same mindset" (Alison: 1, 276-280, emphasis added)

Alison's narrative implies that, prior to the announcement of Graham's retirement and her meeting with Fran and Chris in July, *investigative* learning had been occurring covertly as she and her colleagues critiqued extant practices (the given) amongst themselves - externalising the problem, framing it and considering potential solutions. But they were only able to effect change when Graham's obstruction was removed by his retirement and they could confront the tensions between the established practices of his regime and the new ones they wished to introduce. Dispelling the tension required a transformation of the existing community and also of the conceptualisations of the object and outcome established under Graham's leadership. However, although the episodes of covert investigative learning had come to nothing while Graham remained in post, Alison describes them as having functioned as a period of "gestation". I noted earlier that the data suggest investigative learning sometimes occurred over quite long periods of time in a series of intermittent episodes. In the course of this process, particular discussions of problems seemed to end inconclusively and be rather futile, but the cumulative effect was for a solution to emerge. Alison's metaphor implies that in this case seemingly futile investigative learning was a precursor to the qualitatively different, expansive-like learning that occurred when Graham retired.

However, the narrative also makes clear that although Alison and her colleagues had discussed the kind of changes they wished to make, and the principles and values their new working practices should involve, they had not planned those practices in detail before they conducted their first dispensing test under Alison's leadership. Prior to this

event, in the process of collective externalisation that had included their discussion in July, they had articulated in broad terms a new conceptualisation of the students, and the new artefacts and rules associated with those conceptualisations. Then, in their first teaching session without Graham, they drew on these outlines, and on their experience of working together, to generate actual practices in the contingent circumstances they encountered. Subsequently, they collectively reviewed, evaluated and adapted what they had done, and so the process of investigative learning resumed. Alison's narrative therefore indicates that in the course of their first dispensing test without Graham, she and her colleagues were jointly learning a new form of *activity* that was not defined or understood in detail beforehand, and thus "was not yet there", but was being learned as it was being created (Engeström, 2001, p137-8).

The PPG members' learning on this occasion was oriented towards a fundamental change in the PPG as *Activity System*. This involved a change in how they conceptualised the students and their learning as the object and outcome of their teaching work, and the development of new working practices that included new artefacts, new rules and a new division of labour. Their learning did, therefore, challenge and change the context. This change was achieved by Graham's retirement and a consequent reconfiguration of the community. Until then Graham possessed the power to maintain extant practices and block change as a member of the generation of pharmacists who were senior in terms of age and position within the School.

This episode is significantly different from the episodes of investigative learning described above. Moreover, the process and outcome are consistent with many of Engeström's descriptions of *expansive* learning, which I summarised in Figure 1: *The characteristics of adaptive, investigative and expansive learning*, in Chapter 4. Nonetheless, it is doubtful if this qualifies in Engeström's terms as an episode of expansive learning, for two reasons. Firstly, there is uncertainty about the scale or scope of expansive learning. For example, Engeström (1999b) reports an episode of learning involving two successive meetings of a fifteen-person work-team in a large

organization. He variously refers to this as "innovative learning"; knowledge creation" and "expansive learning", but he also argues that it cannot be viewed as an expansive cycle of learning. Early in his analysis he notes that in this case "instead of entire corporations, the focus is on teams" and he is "looking at phases and cycles that take minutes, perhaps an hour, instead of months and years" (p385). Considering whether "such miniature cycles (can) be considered expansive" he observes:

> *"The answer is yes and no . . . A large-scale expansive cycle of organizational transformation always includes smaller cycles of innovative learning. However, the appearance of small-scale cycles of innovative learning does not in itself guarantee that there is an expansive cycle going on. Miniature and intermediate cycles of innovative learning should thus be regarded as potentially expansive . . . The occurrence of a full-fledged expansive cycle is not common, and it typically requires long-term effort and deliberate interventions. With these reservations in mind, the expansive learning cycle and its embedded actions may be used as a framework for analyzing smaller-scale innovative learning processes"* (p385-6).

From these observations it seems the PPG members' experience should be regarded as a smaller cycle of quasi-expansive learning.

Secondly, in Chapter 5 I noted Engeström's insistence that an 'expansive cycle' comprises a sequence of seven 'epistemic actions'. Alison's narrative certainly suggests that actions 5-7 (implementing, reflecting, consolidating) following Graham's retirement. However, it is not clear from their narratives that the PPG engaged all four preceding actions (questioning, analysing, modelling, examining) in their earlier covert conversations, and thus that their experience strictly conformed to the model of the cycle. Therefore, it may be more appropriate to describe this episode as quasi-expansive learning, or "innovative organisational" learning, which Engeström defines as "collaborative learning in work organizations that brings about new solution, procedures or systemic transformations in organizational practices" (1999b, p377).

Given the uncertainty I have described here, it is notable that Engeström's characterisations and theorisations of expansive learning have developed over two decades through numerous, nuanced iterations. Therefore, it may be beneficial and timely to provide clarification and examples of:

- what is meant by "small-scale", "miniature" and "intermediate" cycles of innovative learning

- the relations between "knowledge creation", "cycles of innovative learning", "innovative organisational learning", "systemic transformations in organisational practices" and "large-scale expansive cycles" of learning

- what constitutes an organisation and whether "organisational transformation" refers to transformation *within* or *of* an organisation.

Moreover, given Engeström's insistence that the model of the expansive cycle is "the basic unit of expansive learning", it may be beneficial to provide further evidence that the cycle definitively depicts the course of 'naturally occurring' learning in diverse activity systems, as well as learning stimulated by DWR.

Conclusions

Like adaptive learning, the *investigative* learning that occurred during the case study was complex and multi-dimensional. Moreover, each dimension included numerous small, but significant details. It encompassed core aspects of the PPG member's work, including the way in which they conceptualised the object and outcome. Furthermore, it involved the collaborative externalisation of problems, difficulties and tensions; joint criticism of the given; the co-construction of new artefacts or intelligent tools, and the internalisation of new understandings and practices.

Investigative learning was mainly stimulated by two factors. The first was a set of diverse tensions within the PPG, or between it and adjacent groups. These tensions were largely local manifestations of the national and international historical circumstances identified in Chapter 6 and the cause of many of the problems, puzzles and challenges the PPG encountered in their work. Two of these tensions motivated the learning analysed in this chapter. The inception of the OSDip course was stimulated by governmental health, education and economic policies, and it introduced a new object into the PPG's work. This initiated a process of adaptive and investigative learning that continued for more than two years. The discrepancy between Graham's

conceptualisations of the object and outcome of their work, and those of the other members also occasioned investigative learning, although on this occasion it could not dispel the tension. Other tensions which motivated investigative learning included:

- a disparity between the financial resources made available to the PPG and those the members believed were necessary to achieve the outcome they pursued in their work with the students

- differences between how the PPG and other groups conceptualised 'the competent pharmacist'

- a perceived conflict between the "professional training" and "academic education" aspects of the MPharm.

Thus the members' experience is consistent with Roth and Lee's (op. cit.)conclusion that when historically accumulated inner contradictions are the focus of conscious attention, "they become the primary driving forces that bring about change and development within and between activity systems" (p. 203). In the episodes of *investigative* learning which occurred during the case study the members sought to resolve these tensions in ways that did not require a radical transformation of their extant practices and circumstances.

The second stimulus to investigative learning, exemplified in some of the episodes analysed in Chapter 8, was a common commitment among the PPG members to evaluation, experiment and improvement. This commitment, which was an element of both the rules and cultural artefacts, was founded on a collective view that lecturers and pharmacists are professionally obliged to evaluate and improve their practice - a view exemplified in Alison's assertion that, "we can always make it better" (Alison, 1:308). The motivating role in learning played by this view seems to be at odds with the assumption in Activity Theory (see, for example, Roth and Lee, op. cit.) that changes in working practices are primarily motivated by the kinds of tension identified above - although the motivation in this case might be interpreted as a tension between the actual and the ideal. However, it is important to note that although the members of the PPG assumed the changes and discoveries they made were improvements, the case-study provided no objective means to judge if their assumption was correct.

Alison's account of designing the OSDip course drew particular attention to the role individual dispositions, interests and attributes played in the investigative learning this involved. It also indicated that the personal changes she experienced in the course of that learning had a direct affect on the rules, cultural artefacts and division of labour.

When Alison replaced Graham as PPG leader, the tension between the prevailing and emergent conceptualisations of the object and outcome could not be resolved within the confines of existing practices and circumstances. On this occasion, a series of inconclusive conversations apparently functioned to pave the way for a process of quasi-expansive learning in which the given was challenged and transformed. In this regard it is notable that Alison described these conversations as having constituted a period of gestation.

The process of quasi-expansive learning was again complex and multi-dimensional. It involved collaborative reconceptualisations of the object and outcome; a reconfiguration of the community; and the development of new working practices which comprised new artefacts; new rules and a new division of labour. Thus it functioned to effect a radical transformation of the PPG and of its members' teaching practices.

The analysis in this chapter suggests the episodes of learning implicated in the introduction of the OSDip course and the transfer of leadership were more momentous in terms of their effects on the teaching practices of the PPG members than those in considered in Chapter 8. So it is important to note that in the two former episodes learning seems to have generally occurred in activities and interactions that were just as ordinary as those involved in the latter cases.

The adoption of Engeström's (1994) distinction between adaptive, investigative and expansive learning has prompted significant insights into the episodes of learning analysed in this and the preceding chapter. In particular, it has helped to understand that workplace learning performed three quite diverse functions in relation to the teaching practices of the PPG members:

1. reproduction or maintenance, and coordination
2. adaptation and innovation (within the broad bounds of the given)
3. radical transformation.

Nonetheless, I noted at least three reasons to be cautious in applying this taxonomy. Firstly, a relatively short 'event' often comprised learning of various kinds. Secondly, for convenience I have used the term 'episodes of learning' in the preceding discussion, which suggests learning occurs in a series of discrete 'events'. However, the analysis indicates that learning sometimes had a long, intricate trajectory. Therefore, it often may be difficult to identify the specific effects of a particular episode of learning, and to distinguish the point at which it either ceases to be influential or becomes implicated in learning of another kind. For example, I noted above that seemingly inconclusive investigative learning evolved into, or functioned as the precursor of quasi-expansive learning. Engeström (2000b) suggests "in an analysis of shorter sequences of learning, we can only identify expansive actions in a preliminary and tentative way. Thus at this level of analysis it is appropriate to talk about learning actions with expansive potential" (online, no page numbers). The uncertainty concerning the effects of learning was particularly notable on the occasions that Chris was in conversation with two colleagues 'from' other *Activity Systems*. I noted it was therefore unfortunate there were not more opportunities to examine interactions of this kind in the case study and this is one potential direction for further research.

The third reason for caution also refers to the identification of expansive learning. Engeström appears to insist it must conform to the expansive cycle. He is also equivocal about the scale at which it can occur. Therefore, learning which in many

respects is closely akin to his descriptions of expansive learning may not qualify as such according to his strict definition.

Chapter 10   The role in workplace learning played by individual disposition and interest

Introduction

In this short chapter I shall analyse in more detail the role played in learning by aspects of the subject, especially individual disposition and interest, and their close, complex relations with other elements of the Activity System. First, however, I need to explain my use of the term 'disposition'.

Although their behaviour generally conformed to the rules individuals in the PPG were disposed to act in distinctive ways and display particular attitudes. I will describe and analyse examples of these 'habits' or 'idiosyncrasies' below, and will refer to them as individual 'dispositions'. I acknowledge 'disposition' is a contested term, but alternatives like 'character', 'nature', 'personality' or 'temperament' are also controversial. Bordieu (e.g. Bordieu and Passeron, op. cit.) uses 'disposition' to refer to a person's propensity to act in particular ways, which he argues is shaped by the interactions between objective social structures; the behavioural norms of particular groups or classes, and personal history. The PPG members' dispositions appear to have been influenced by factors similar to these, and it is important to acknowledge the similarities. Bordieu's concept of disposition is not included in the analytical perspective adopted in the case-study because, as I have explained, part of my purpose is to examine the extent to which Activity Theory takes account of the individual dimension of workplace learning. However, the analysis below suggests that further investigations of the relations between disposition and learning in other work groups would be beneficial. In which case a consideration of Bordieu's concept might help to generate additional insights, especially given the similarities between Activity Theory and Bordieu's theory of habitus. It might help in particular to resolve some of the uncertainty about the function of specific phenomena, which I referred to in previous chapters.

1 Analysis

Alison had considerable personal authority within the PPG. This derived partly from the positions she held within the organisational hierarchy as a Principal Lecturer; the formally designated group leader, and a course and module leader. However, her authority appeared to be based mainly on 'personality'; academic expertise and experience; length of service and the willingness of group members to defer to her on these grounds. As a consequence of her authority, Alison's disposition had a substantial effect on the informal division of labour and the rules, and thus on the opportunities to learn afforded to its members.

Alison described herself as energetic; impulsive (Alison, 1:59); open to new ideas; keen to experiment and to improve practice:

> *"I love trying things out and . . . we can always make it better. We can make it worse, but, you know, we can make it better as well. . . I like it (the PPG) to be this dynamic environment where we can try things out..."*
> (Alison, 1:308),

She described Chris's disposition as being very similar (Alison, 2:131), especially with regard to making innovative proposals:

> *"Chris generates more ideas than me. . . He is amazingly creative"* (Alison, 1:74-8).

Alison's disposition, complemented by that of Chris, was closely related to the PPG's rules analysed in previous chapters, as the following comments illustrate:

> *"we're quite up for trying things out and in a way we should be... making mistakes is glorious because it's the only way to learn.."* (Alison, 2, 143)

> *"we're forever reflecting on what the modules should contain; how we can deliver this better or what we can do to enhance the student experience . . . So I think that's our core value... "* (Alison, 2:84)

> *"my . . . team is very reflective . . . and looking to improve (their teaching) on a cyclical basis, not just as a one off . . . We'll take each issue on board and get input from every member of the team as well . . . I've learned a lot from that process, listening to colleagues and their views . . . something that you've struggled with for a long time . . . (is) very quickly resolved by*

somebody else . . . a snap of the fingers and you think, 'Why didn't I think of that?'" (Ben, 2:141).

These observations further illustrate that the rules established under Alison's leadership generated conversations which were generally democratic and inclusive. In those conversations, the members were encouraged to review and evaluate practice; criticise the given and make innovative proposals. Thus a significant feature of the rules and their characteristic modes of discourse was that they encouraged the speculative process I described earlier as kite-flying, a point that will be taken up again below. Members were also encouraged to experiment with new forms of practice, and not be anxious if these experiments were unsuccessful. As I noted above, when viewed in the terms of Activity Theory these modes of discourse appear to have a complex, ambiguous character, embodying the rules but also functioning as cultural artefacts that mediate between the members and the object of their work. Thus there was a close relation between the dispositions of Alison and Chris; the PPG's rules; particular cultural artefacts implicated in the group's work, and the opportunities to learn that arose in the course of their working activities.

While Alison and Chris were similar in some important respects, Ben's disposition was quite different and Alison in particular sometimes found this trying:

> *"...Ben is so steady and so calming and . . . sometimes I just want to go, "Come on, let's run!" And he goes, "Ah, I'm only walking at the moment, slowly", and I want to go "Come on, come on, let's do this and let's do this," and . . . sometimes I just find it frustrating"* (Alison, 1:59)

Alison believed Ben had found it more difficult than Chris to make the transition from community pharmacist to lecturer (Alison, 1:39). She attributed this partly to the caution Ben's pharmacist training had instilled in him:

> *I think Ben's finding it harder and . . . I think it's his fear as a pharmacist of getting it wrong . . . In (the university) . . . if you go and do a teaching session and it's a disaster . . . instead of going "Oh, I'm useless, I can't teach," you have to go "Why did that go wrong? . . . Oh I know, it's because I didn't do..." and you try it again and you have to make decisions and go and reflect on them. Whereas in the pharmacy you can't do that. You can't say, "Well, I gave the wrong tablets, I will have to next time try a bit harder," You've killed the patient. So there's this ethos they're coming from*

of having to get it all exactly right, whereas in the teaching fields it's much more about learning your own style... (so) there's an uncertainty there..." (Alison, 1:43)

However, reflecting on the fact that Chris had received similar training Alison suggested that Ben's "personality" made it more difficult for him to learn how to be a lecturer and to "see himself" as one:

"Chris picked it up quite quickly. . . . I assumed they would be quite similar and of course . . .people are very different . . . just because one person from a community pharmacy has come in and adopted the way we do things, the ethos and has that confidence and . . . takes to it like a duck to water, doesn't mean that the next person coming along is going to find the transition as easy . . . I try to support (Ben) as much as I can but . . . it depends upon the personality and the person . . . Chris got it really quickly (but) I don't think (Ben) sees himself as a lecturer yet really, or doesn't have that internal image because when you look at yourself inside, it's what you see yourself as, isn't it? I know what I am. I see myself as, yeah, I'm someone who stands up, delivers lectures, helps students, talks them through problems, tutorials . . (but I don't think) he's internalising his image of what he is and who he is" (Alison, 1:43)

Ben similarly described his disposition, especially his caution, as having been shaped by a combination of previous training and 'personality'. He reported feeling "a certain amount of trepidation" about taking up a post at the University "after twenty-five years" in pharmacy practice (Ben, 1:77) and said his new role had required him "to come out of (his) comfort zone a lot" (Ben, 1:69). He was aware his colleagues were concerned on his behalf, and keen to encourage him to be a little more adventurous, more willing to experiment (Ben, 1:57). However, he found this difficult and it made him anxious that colleagues within the School went about the same task in diverse ways:

"...I am used to having procedural guidelines in place and . . . the more people you talk to (here), the more different viewpoints you get on how project supervision works...." (Ben, 1:57)

Ben characterised himself as disposed to approach novel situations and activities at work in a cautious manner. He was reluctant to proceed by trial and error, and had a preference for protocols and models of behaviour (Ben, 1:57). Consequently he was keen to observe how colleagues did things before he tried doing them himself (Ben,

2:274). He also liked frequent confirmation that he understood what was expected of him and was conforming to expectations, something Ella believed all of the other PPG members found frustrating at times (Ella, 1:277)

Thus Ben's disposition influenced his response to the opportunities to learn that were afforded to him. Ella's disposition and interests were different from Ben's but similarly influential:

> *"I try to seize . . . opportunities (to learn) because . . . when I get my PhD, I really want to be a lecturer in pharmacy practice, ideally here, but failing that, then I'd have to go somewhere else, and the more things . . . I can do, the more chance I'll have . . . (I'll do) anything I'm asked to do in teaching... because I enjoy it as well. I enjoy doing it. I get paid to do it and it's developing me for what I want to do in the future"* (Ella, 2:152-154)

Although the most recent newcomer, Ella appeared confident, brisk, adventurous and keen to take advantage of any opportunity to learn that would help her achieve her ambitions. The contrast between her comments and those of Ben indicate that their dispositions and interests shaped the way in which they read the circumstances they encountered in their work; whether or not they saw opportunities to learn in those situations, and whether or not they took up those opportunities.

A similar combination of disposition and interest also affected the learning of James and Fran, and in both cases their work interests outside the University seem to have been particularly influential. As I noted above, James had a substantial part-time post as pharmacist in a local PCT and had recently established a training company. His part-time employment at the University limited his opportunities to participate in learning episodes within the PPG. However, Alison and Chris reported that his outside interests, and a disposition to remain rather detached from the other members, further reduced these opportunities:

> *"he's trying to juggle too many things at the moment ... Most people want to eventually do more at the university (but) . . . he never wanted to really join our gang...."* (Alison, 1:51)

"...in the past, ... he has been invited to a few meetings that we've had, but there's always been something more important that he's had to do. ." (Chris, 1:143)

"... it's hard to engage somebody who's not here when loads of conversations are taking place, and I don't sense a willingness to actually be involved in those either" Chris, 2:107

Fran also had a substantial external work-interest which, combined with her disposition, influenced the extent to which she participated in activities at the University that might afford her opportunities to learn:

"Fran is two days a week with us and Fran's priority is Boydds so . . . she's quite selective of what she will or won't do. . . . She's quite assertive and she will fit in, so there are some things she will help me with . . . but it's very much on her terms and I don't feel I have a lot of say in it, because basically we don't pay a penny" (Alison, 1, 74)

However, Chris believed Fran's experience and training at Boydds also enabled her to make a particular contribution to the learning episodes she participated in at the University, a point that will be elaborated below:

"Fran brings in elements of organisation . . . the Boydds (influence) - having things structured and done in certain ways. That is quite useful because . . . the conversations we have that go flying off in different directions do need to be focused down at times into . . . some sort of action. You need the reflection, but you do need to come back and make some use of that reflection." (Chris, 2:109)

Finally, Heather's opportunities to learn were also limited by her part-time status. However, she was disposed to accept whatever teaching responsibilities she was offered and it seems reasonable to assume this increased the opportunities to learn she was afforded:

"Heather, I think, is part of the team, but . . . she's almost like the reliable substitute . . . somebody you just know that if you need something done that she'll do it and . . . she'll deliver... " (Chris, 1:139).

Thus, it appears that the individual dispositions and interests of the PPG members influenced the opportunities they were afforded to learn; the extent to which they saw opportunities in the circumstances they encountered, and the ways in which they

responded to those opportunities. To some extent, therefore, their dispositions and interests mediated the effects which the formal division of labour had on learning.

In addition, Alison pointed to close, complex relations between the dispositions of individual members; the particular tasks they performed within collective activities and how opportunities to learn were created within the group:

> "... when (Fran and I) are running a practical ... together ... I think, 'Oh let's... we could do this, we could get them in... der, der, der', and then I get bored and then she ... takes. .. the ideas and gets ... the photocopying done and gets the bits of paper typed up. So in fact she doesn't generate many ideas but she can see them through. Chris ... is amazingly creative and Ben is again more of a doer once he's been told what to do. So it's an interesting split. We've got Chris and I ... going, 'We could do this, or we could do this, or we could do this.' And the others are going ... 'Right, well, we'll just get the printing done for that bit and we'll see this bit through and organise that.' ...So ... in the team ... Chris and I are sort of thinking, 'Oh let's change the whole curriculum, now, this minute!' And the others are ... going behind and picking up the bits and going, 'They want to do this and, right, let's move this on...' ... I think they're quite happy and they don't seem to want to generate loads of ideas and I think they feel very, I hope, ... valued in that role ... So in a team I think it's quite an interesting split" (Alison, 1:74-8

> "Sometimes Chris and I just sit in the room and we'll just bounce ideas around without the others there because, you know, that's not their thing. So Friday night I wanted to go home and we ended up talking about the curriculum ... and (at) quarter to six ... we're sitting here thinking how we could input more clinical teaching into the OSDip programme to make it quite innovative and that's just out of the blue, from nowhere, and yet it wouldn't have been something that Fran or Ben would have particularly been involved with, even though they might be one of the ones teaching it" (Alison, 1:78)

Alison's comments indicate that the informal division of labour amongst the members of the PPG was often closely related to disposition. They also provide further indication of a close relation between dispositions; the critique of practice and the process of kite-flying. I previously noted that under Alison's leadership the PPG's rules and characteristic modes of discourse encouraged kite-flying, and there are indications that this process was an important element in the episodes of investigative

and quasi-expansive learning analysed above. However, I also noted that although the rules provided members with broadly similar opportunities to fly kites it was Alison and Chris who most often did so. Alison's comments imply that this was largely because she and Chris were more disposed to generate 'ideas', while others in the group were more disposed to carry through those ideas into practice. This suggests that the tendency for investigative and quasi-expansive learning to occur within the PPG was partly influenced by the disposition of particular individuals to critique the given, fly kites and make innovative proposals. Moreover, a number of the comments quoted above suggest training and professional experience may influence the extent to which people are disposed to engage in these processes. Engeström (2001) notes that although expansive learning is a joint, collaborative process it begins with individual exceptions or deviations from previously accepted and codified norms. Within the PPG it seems that some individuals were more disposed than others to generate such exceptions or deviations.

Conclusions

In the multi-vocal community of the PPG, the particular dispositions, interests and attributes of the individual members played a complex role in learning. Firstly, they influenced whether or not the various members of the group 'saw' opportunities to learn in the circumstances they encountered in their work, and whether or not they took up those opportunities. Thus although the formal division of labour partly determined the opportunities individuals were afforded to learn, its effects were mediated by their dispositions and interests.

Secondly, individual dispositions influenced the ways in which opportunities to learn were created. Alison was considerate of others; energetic; impetuous; open to new ideas; eager to experiment and to improve practice. Because she had a high formal and informal status within the group, her disposition had a substantial effect on the nature of the rules that directed members' behaviour. Moreover, this effect was intensified because Chris had a similar disposition and was also influential within the group.

Thirdly, the process of kite-flying seems to have been an important element in the episodes of investigative and expansive learning that occurred. Although the rules provided members with broadly similar opportunities to fly kites, it was Alison and Chris who most often did so, largely, it appears, because they were more disposed to generate ideas, while Ben, Fran and Heather were more disposed to put those ideas into practice. It seems, therefore, that the occurrence of investigative and quasi-expansive learning was in part influenced by the disposition of particular individuals to critique the given, speculate aloud and make innovative proposals.

Finally, it is pertinent to recall a further insight into the relations between disposition and learning provided in Alison's account of designing the OSDip course. The personal changes she experienced directly affected the rules governing the PPG's behaviour, their modes of conversation (and thus the cultural artefacts implicated in their work), and the informal division of labour. These effects, in turn, influenced the opportunities to learn that were subsequently afforded to the members, including Alison herself.

Thus there were close relations between the diverse personal histories, interests, attributes and dispositions of the PPG members; the social rules; the formal and informal divisions of labour; the opportunities to learn that arose in the course of their working activities and how individuals responded to those opportunities. Similar conclusions have been drawn in a number of recent research reports. For example, Hodkinson et al (2004) found that individual dispositions and interests had a direct influence on the co-production and reproduction of the workplace 'culture' [29], while Biesta et al (2008) conclude that "people's dispositions and their social positions can both enable and constrain learning" (p1). Given the complex nature of the dispositions discussed here and the strong influence they appear to have exerted on working practices and workplace learning, it seems likely there would be benefits from further investigation of the role played in academic teachers' workplace learning by biography

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[29] In contrast to the way in which it is used Activity Theory, Hodkinson et al attach a rather loose, general meaning to the term 'culture'.

in general, and disposition in particular. Particular themes for investigation in this regard might include the effects of professional socialisation, gender and ethnicity, and whether particular combinations of individual disposition appear more likely to promote or constrain learning. As I noted in the introduction to this chapter, there may be value in including aspects of Bordieu's (op. cit.) concept of disposition in research of this nature.

PART 3: Evaluation, discussion and conclusions

Chapter 11   Evaluation of Activity Theory as an alternative analytical perspective on the workplace learning of the Pharmacy Practice Group

Introduction

One aim of the case-study was to evaluate Activity Theory as the basis of an alternative analytical perspective on the PPG's workplace learning and its role in the formation of their teaching practices. In the first section of this chapter I shall summarise the benefits of adopting Activity Theory. In the second section I shall briefly consider whether it is valid to regard the PPG as an *activity system*, given its small size. In the third section I shall describe seven caveats that emerged from the analysis and discuss a eighth often raised in the literature.

1 The main benefits of Activity Theory as the basis of an analytical perspective on the data

In Chapter 3 I identified a small set of criteria which I argued a comprehensive, systematic, coherent perspective on workplace learning must satisfy. In Chapter 4 I proposed that Activity Theory satisfied these criteria. The analysis in Chapters 6-10 bears out this proposal. For it demonstrates that the concepts and principles of Activity Theory, including Engeström's (1994) 'definition' of learning, provided the motivation and means to describe and explain in a systematic manner:

- the historical, social, cultural and individual dimensions of the workplace learning that occurred, and the complex relations between them. It also prompted the identification of the various small but significant details that comprised each dimension in particular episodes of learning
- the complex role workplace learning played in the formation of teaching practices.

Specifically, Activity Theory had five benefits.

1   It encouraged the adoption of the workgroup as the super-individual primary unit of analysis. This gave rise to the benefits described below.

2   It prompted an understanding of the role played in learning by:

–diverse historical circumstances at an organisational, local, national and international level

–organisational and governmental policies and regulations

–organisational social structures and relations.

In particular, Activity Theory provided the stimulus and means to identify the tensions - within the PPG, and between it and other groups, which motivated much of the learning that occurred. It also provided the means to understand the detailed relations between those tensions and learning.

3   Viewing each learning episode through the 'lens' of Activity Theory encouraged systematic attention to the histories, dispositions and interests of the individuals who comprised the PPG community; the social rules; the division of labour; how the PPG members conceptualised the object and intended outcome of their working activities; the cultural artefacts or resources implicated in those activities, and the complex relations between these elements of the *activity system*. This in turn prompted an understanding of the role played in learning by each of these elements, especially the object. As I noted in Chapter 6, all the episodes of workplace learning which occurred during the case-study learning were oriented to the object and outcome. Moreover, conceptualisations of the object and outcome played a central role in some of those episodes.

4   The distinction between *adaptive, investigative* and *expansive* learning provided a stimulus and means to understand the various motives to workplace learning; the diverse functions it performed in the formation of their teaching practices, and the relations between the learning of newcomers and established members of the group. This included understanding how newcomers contributed to the learning of experienced members and the transformation of practice.

5   Activity Theory encourages an analysis at the level of the workgroup rather than the individual lecturer and one which, as Roth and Lee (op. cit.) observe, has both "structural (synchronic) and cultural-historical (diachronic)" aspects (p.204). It therefore provided the mean to explore the complex relations between the individual and the collective, and between agency and historical, social and cultural factors. Thus adopting Activity Theory as the basis of an analytical perspective avoids the weaknesses of the 'methodological individualism' which informs the two traditional analytical perspectives on lecturers' workplace learning. For, as I noted in Chapter 3, both of these assume that individual agency is much more significant and potent than the historical, social and cultural circumstances in which individuals act (Trowler et al 2005). However, in Chapter 8 I also suggested that investigations of the relations between academic teachers' *inter*-personal and *intra*-personal learning would be beneficial.

Some episodes of learning in the case-study involved processes which might be interpreted as instances of what Lave and Wenger (op. cit.) term *'learning by peripheral participation'*. However, I argued in Chapter 5 that Activity Theory was more likely to provide the basis for an alternative analytical perspective on academic teachers' workplace learning than was Lave and Wenger's perspective on 'situated learning'. The analysis in Chapters 6-10 and the findings set out above indicate that this was the case for the following reasons.

Activity Theory prompted analysis and understanding of the role played in learning by diverse historical; governmental and organisational circumstances, and the consequent tensions – within the PPG, and between it and other groups – which stimulated much of the learning that occurred. Lave and Wenger give little attention to these aspects of working activities and workplace learning.

Lave and Wenger do direct attention to social relations within 'communities of practice', and the manner in which they mediate opportunities to learn. However, they do not provide a formal model of work-groups or working activities which can be adopted as the basis of a comprehensive, systematic, coherent analytical perspective. In contrast, as I noted above, Activity Theory prompted systematic attention to the six elements of the *activity system*, which incorporate all the significant factors of workplace learning referred to in Chapter 4. This facilitated an understanding of the role each element played in various episodes of learning and of the dynamic relations between them. Thus Activity Theory provided the means to systematically analyse the complex relations between the individual and the collective, and between agency and structure.

The formal distinction between *adaptive, investigative* and *expansive* learning provided a stimulus and means to take a nuanced view of learning and its various functions in relation to working practices, and to the learning of newcomers and established members of the group. Lave and Wenger (op. cit.) do not offer a formally conceptualised, differentiated view of learning.

2 Is the PPG an activity system?

Treating the PPG as though it were an *activity system* for analytical purposes has generated significant insights into the workplace learning that occurred in the case-study. Nonetheless, it cannot be taken for granted that it is valid to regard the PPG as an *activity system*, especially given its small size. It is important therefore to note that the analysis indicates the members regarded themselves as a distinct community, and their collective conceptualisations of the object and outcome of their work were distinct from those of other adjacent subject-groups. In the terms of Activity Theory it therefore seems apt to regard the PPG as an *activity system*.

If valid, this conclusion is particularly significant for two related reasons. Firstly, it suggests that academic work in universities may often be carried on in an array of small *activity systems* constituted at a level below that of the Department or School.

This raises the possibility that lecturers who work in closely adjacent, small-scale groups conceptualise and go about their work with the same students in different ways, these differences being shaped by the distinct sets of disciplinary and professional cultural artefacts which are implicated in their work and constitute their expertise.

Secondly, the conclusion seems to indicate uncertainty in Activity Theory about the scale of *activity systems* and their relations with organisations or corporations. As I noted above, Engeström often appears to propose that the *activity system* is synonymous with the organisation or corporation (see, for example, 1999b). However, the analysis in Chapters 6-10 raises the possibility that it may be most apt to understand a university as a constellation of *activity systems*, rather than the prime analytical unit in its own right.

3 Eight caveats regarding Activity Theory

In this section I shall summarise seven caveats regarding Activity Theory which emerged from the analysis and a eighth that is often identified in the literature.

consciousness of the motive and object of activity

Engeström (2000a) and Helsinki (op. cit.) argue people are often unaware of the motive and object of their *activity*, because their attention is focused at a different level, on the goals they pursue in their *actions*. However the case-study includes numerous occasions when the PPG members collectively and deliberately articulated their conceptualisations of the object and outcome of their work. One possible explanation for this apparent contradiction is that lecturers are generally more aware of these conceptualisations than Engeström and Helsinki suggest because they are regularly required to provide students, colleagues, employers, professional bodies and diverse others with detailed articulations of the purposes they pursue in their teaching and the view they take of the students with whom they work. Alternatively, the nature of the PPG members' specialism, *Professional Practice*, may require them to consciously and deliberately articulate how they conceptualise the object and outcome of their teaching, whereas such conceptualisations may be taken-for-granted in more

traditional disciplines. Or perhaps, because they often work very closely, a collective consciousness of the object and outcome is required to coordinate their actions. Given the central role these conceptualisations played in the learning of the PPG it seems likely that further research into this aspect of lecturers' work and learning would be beneficial.

the coordinating role of adaptive learning

Adaptive learning ensured that the actions of the members were co-ordinated and consistent over time. This function is given relatively little attention in Engeström's discussions of workplace learning but the analysis above clearly indicates it was an important aspect of the members' work, perhaps because so many of their teaching activities were collaborative.

the role of externalisation in adaptive and investigative learning

Engeström (2000a) contends that externalisation is occasioned primarily by a need to resolve tensions and inconsistencies within the *activity system*, and is closely associated with *expansive* learning. However, externalisation seems to be an apt definition of the collaborative process in which the members repeated, and re-negotiated or reaffirmed the 'understandings', knowledge and practices they had previously co-constructed. This suggests that externalisation also plays an important role in the reproduction, or maintenance of the *activity system*, and thus in *adaptive* learning (which may include the need to avoid or resolve tensions between the behaviour of newcomers and established members of the group). It also appears to have been an important feature and, one assumes, a necessary condition of collaborative *investigative* learning.

the role of critique in learning

Engeström (1994) identifies *criticism of the given* as one of the defining aspects of learning, which typically occurs in its fullest form in the course of *expansive* learning. However, among the members regular, rigorous, reflexive critique of understandings and practices was an explicit professional commitment or value, and a prominent

element of the rules and cultural artefacts implicated in their work. As such it seemed to play an important role in *investigative* as well as expansive learning. Indeed, criticism of the given, like externalisation, would seem to be a necessary condition for *investigative* learning. Moreover, observing and participating in the processes of critique played a significant role in the induction of the newcomers, Ella and Ben. Thus criticism of the given was also a constituent of adaptive learning. Critique therefore seems to play a significant role in all three kinds (or functions) of learning.

The members engaged in critique with a deliberate intent to learn. Activity Theory holds that changes in working practice are primarily stimulated by contradictions, or tensions within and between *activity systems*, especially when such tensions become the object of conscious attention, as Roth and Lee (op. cit.) note. However, a commitment to critique was an aspect of the members' professional identity and work, which functioned as a prominent, distinct stimulus to learning. Engeström appears to give little attention to this matter, perhaps because he is primarily concerned with expansive and systemic learning (Edwards, op. cit.), a point that will be discussed further below. It is notable, therefore, that Evans et al (op. cit.) identify candid critique as a feature of working practices which are "explicitly designed for the purposes of learning and creativity, as often applies in the case of 'knowledge workers'". They add that, "(w)hen participation includes the right to criticise and the ability to learn how to criticise constructively, the participant can influence and contribute to shaping the values and strategies within the team or work group" (pp.18-19). These conclusions suggest there is scope for further research and theoretical development with regard to the role played in lecturers' learning by professional values; the requirements of professional, statutory and regulatory bodies, and the need to articulate conceptualisations of the object and outcome of work referred to above.

In addition, it is notable that within the PPG there was a close relation between the process of critique and individual disposition. This relationship also receives little attention from Engeström, again perhaps because he is rather more concerned with systemic learning, and further research in this regard would be beneficial.

the tripartite taxonomy of learning

Engeström's (1994) distinction between *adaptive, investigative* and *expansive* learning prompted significant insights into the members' workplace learning. Nonetheless, the analysis in Chapters 8 and 9 indicates two general reasons for caution in applying this taxonomy. Firstly, a relatively short event may comprise a complex set of learning episodes of various kinds. Secondly, it may be difficult to identify the specific function of a particular episode, and to distinguish the point at which it either ceases to be influential or becomes implicated in learning of another kind.

The analysis in Chapter 9 also raised more particular uncertainties about how to categorise a form of learning which was significantly different from investigative learning and similar in many respects to expansive learning, but did not obviously conform to the model of the expansive cycle. I suggested this indicates a need to clarify:

- the relations between apparently similar concepts such as "knowledge creation", "cycles of innovative learning", "innovative organisational learning", "systemic transformations in organisational practices" and "large-scale expansive cycles" of learning
- the relative scale of different types of learning cycle
- what constitutes an organisation and whether "organisational transformation" refers to transformation *within* or *of* an organisation.

It may also be beneficial to provide further 'evidence' that the expansive cycle definitively depicts the course of 'naturally occurring' learning in diverse *activity systems*, as well as learning stimulated by DWR.

the ambiguity of cultural phenomena

The analysis indicates that numerous and diverse cultural artefacts were implicated in the PPG's working practices and workplace learning. However, it was sometimes difficult to decide where in the conceptual framework of the *activity system* it was most appropriate to locate particular cultural phenomena. For example, 'values' can be regarded as an aspect of the *rules*, as *mediating cultural artefacts* or as culturally

derived characteristics of the individual lecturer, or *subject*. 'Modes of discourse' seem similarly ambiguous, for they appear to be an aspect of the *rules* but also perform a complex set of functions as *cultural artefacts*. Likewise, the multiple staffing of teaching sessions relates to the *division of labour*, but it is also a feature of particular teaching practices the PPG have devised to help them achieve their desired outcome, and it can be argued that teaching practices have the character and function of *mediating cultural artefacts*. In Chapter 7 I acknowledged these ambiguities may simply indicate the necessity for accounts of Activity Theory to clearly state that phenomena sometimes perform various functions simultaneously. However, they may also point to the need for more subtle conceptualisations of the main elements of the *activity system*, the kinds of phenomena they comprise and the relations between them.

the scale of Activity systems

As I noted above, Engeström (1999b) appears to assume that *activity systems* are synonymous with, or constituted at the level of the organisation. In contrast, although the PPG comprised only seven members during the case-study, the analysis indicates it is appropriate to regard it as an *activity system*. This raises the possibility that *activity systems* may be rather smaller than is generally suggested in Engeström's work, and that it is most apt to understand a university as a constellation of *activity systems*. It seems likely therefore that the scale of *activity systems*, and the relations between *activity systems* and large organisations are aspects of Activity Theory which would benefit from further consideration and research, at least with regard to universities.

the individual dimension of learning

This eighth caveat has been raised in other studies but appears to be countered in some respects by the analysis in previous chapters. Analytical perspectives which emphasise the social and cultural nature of learning are sometimes said to neglect the individual dimension (Evans et al, op. cit.; Hodkinson and Hodkinson, 2005). More specifically, in relation to Activity Theory Edwards (op. cit.) has argued that Engeström's "concern is systemic learning, i.e. expansive learning as evidenced in a change in the activity

system, and he pays relatively little attention to the individual as someone who is coming to know or making sense" (p61).

Partly as a consequence of such concerns, recent studies of workplace learning often give particular attention to the role played by individual biography (see, for example, Harteis and Billet, op. cit.; Billett, 2004; Hodkinson and Hodkinson, 2002d, 2004). These generally report close relations between the formation of collective working practices; the social construction of knowledge; the learning opportunities afforded in the workplace and the personal histories of the individuals concerned. The case-study, particularly the analysis in Chapter 10, indicates the important role played in learning by individual disposition and interest, and by the professional and disciplinary cultural resources which constitute an individual's specialist expertise (for example, knowledge, understandings, skills, values, attitudes, forms of communication and interaction). The conclusion drawn in the case-study is therefore broadly consistent with the findings in a number of recent research reports. Moreover, it indicates that adopting Activity Theory as an analytical perspective on workplace learning does not necessarily result in a neglect of the individual dimension of learning. In other words, if Engeström does give relatively little attention to the individual *subject,* this is a consequence of his particular research interests, rather than of an inherent weakness in Activity Theory, and in this regard I drew attention to Davydov's concern that Activity Theorists have tended to prioritise the collective over the individual dimension of learning.

As I have noted, the concepts and principles of Activity Theory did provide a means with which to identify and understand complex relations between the individual and the collective, and between agency, and historical and socio-cultural structure. Thus Activity Theory encourages a recognition that individuals are positioned within the processes of work and workplace learning by numerous and diverse socio-cultural factors. Nonetheless, there is clearly scope for further research that explores these relations in the work and learning of other lecturers, and contributes to the development of an Activity Theory perspective on the role of the *subject* and *identity*

in learning. In this regard, the case-study indicates there would be value in foregrounding the role played in learning by gender, and the membership of different generations and of diverse *activity systems*. More particularly, in Chapter 8, I suggested there is scope to further investigate the *intra*-personal aspect of academic teachers' workplace learning.

Conclusions

In the first section of this chapter I identified the main benefits of adopting Activity Theory as the basis for an analytical perceptive on the data. I concluded it provided the motivation and means to identify and explain in a comprehensive, systematic, coherent manner:

- the historical, social, cultural and individual dimensions of the workplace learning that occurred, and the numerous small details that comprised each dimension in particular episodes of learning
- the complex relations between the four dimensions
- the diverse functions workplace learning performed in the formation of teaching practices.

I also identified some of the advantages Activity Theory has over Lave and Wenger's notion of 'learning by peripheral participation'.

In the second section I concluded it is valid to regard the PPG as an Activity system, which suggests that a university may comprise a large number of quite small academic *activity systems*. I noted this may indicate a need to further consider the scale of *activity systems* and their relations to organisational structures, a point I reiterated in the third section.

In the final section I drew attention to seven caveats concerning:

- consciousness of the motive and object of *Activity*
- the coordinating role of adaptive learning
- the role of externalisation in adaptive and investigative learning
- the role of critique in learning

- Engeström's tripartite taxonomy of learning
- the ambiguity of cultural phenomena
- the scale of *activity systems*.

I also noted that socio-cultural analyses in general, and Engeström's 'application' of Activity Theory in particular, are often said to neglect the individual dimension of learning. However, the case-study appears to indicate that this is not a consequence of an inherent weakness in Activity Theory as an analytical perspective, although further attention to intra-personal learning would be beneficial.

In the next chapter I shall evaluate the case-study; set out the main conclusions to be drawn from the thesis and summarise the contributions it makes to knowledge.

Chapter 12   Evaluation of the case-study and Main conclusions

Introduction

In this chapter I shall evaluate the case-study discussed in Part 2 with reference to the theoretical and conceptual framework developed in Part 1, and set out the main conclusions of the thesis. In the process I will identify further potential themes for research. Finally, I shall briefly summarise the contributions I believe the thesis makes to knowledge.

1 evaluation of the case-study

The research strategy

The analysis in Chapters 6-11 indicates that the combination of observations and interviews supplemented by document review generated rich, finely grained data, which provided the basis for:

1 a detailed description, analysis and understanding of the historical, social, cultural and individual dimensions of the members' workplace learning, and its role in the formation of their teaching practices

2 a detailed evaluation of Activity Theory as the basis of an analytical perspective.

Therefore the research strategy described in Chapter 5 was appropriate. Nonetheless, the case-study had several shortcomings, which will be considered below.

The individual interviews had the benefits identified in Chapter 5, providing opportunities to:

— explore the PPG's history, and the personal histories, dispositions and interests of its members

— elicit narratives of past learning episodes

— compare and contrast the narratives of various PPG members with one another, and with my own emergent interpretations.

Initially, I expected the interviews would be the most productive means of generating data, because I had conducted many research interviews and knew their sustained focus on individual experience often yielded rich data. I therefore thought the observations would have a supplementary function. However, the analysis indicates that close observation of working activities was an essential aspect of the research. The three forms of observation also had the benefits anticipated in Chapter 5. In particular, they enabled me to:

- gain insights into the relations between learning and circumstance
- discern implicit social and cultural features of the members' experience and learning.

In observing the local environment, I gave particular attention to the character of the physical environment as a cultural artefact in working practices; to social interactions; patterns of movement; the organisation of time and the rhythms of the day. Although I have made little specific reference to them these observations, they informed the analysis and were a valuable part of the research process.

Analysis of various University, School and course documents provided information relating to, for example, the municipal history of pharmacy education; the history of changes in the pharmacy profession and curriculum, and the demographic history of the SBS. They also provided formal articulations of the intended outcomes of teaching on the MPharm and OSDip courses.

Researchers often note the difficulty of eliciting accounts of workplace learning in interviews and the consequent need to use multiple modes of data generation (for example, Evans, Kersh and Sakamoto, 2004; Eraut et al, 1998). The case-study provides further support for this conclusion. Had interviews been the sole method of data generation it would not have been possible to discern the pervasiveness of workplace learning in the working activities of the PPG members, its complicated nature or its complex role in the formation of their teaching practices. That said, my experience of conducting the case-study indicates that a multi-method investigation of workplace learning which includes sustained observation of naturally occurring events

is time-consuming, labour intensive and often intrusive. Consequently, a single researcher can only gain access to a small portion of a workgroup's experience. Moreover, one cannot predict who will have contact with the research participants; so important interactions may occur with people who have not consented to take part in the research and do not know why the researcher is present. Sustained, close-up observation of working activities therefore involves difficult ethical considerations (Costley et al, op. cit.).

It also raises questions about how best to record what is observed, especially when much of 'what matters' is not audible. I rejected audio and video recording for methodological and ethical reasons. Instead, during each observation I made handwritten notes summarising the events and interactions I observed, and my initial interpretations. I elaborated these field notes as soon as possible after each episode, and used them to construct my narrative of the observation, which I then analysed and interpreted. Thus the process of observation, recording and analysis involved multiple layers of selection and interpretation. The analysis in Chapter 8 indicates the field notes were a rich source of data. In compiling and analysing those data, I endeavoured to be candid, self-critical and reflexive. Nonetheless, it is important to acknowledge the notes provided a view of complex cultural and social phenomena which was probably even more partial and subjective than that provided by the analysis and interpretation of the interview transcripts (Barbour, op. cit.). Therefore, I considered involving a 'critical friend' in the process of analysis and interpretation. However, I was unable to find a suitable person who was sufficiently familiar with Activity Theory to perform this role with an appropriate degree of critical insight and independence.

As I noted in Chapter 5, when I designed the case-study I included the potential to enlarge the study by conducting a small number of interviews with members of work-groups adjacent to the PPG. However, although it would have been beneficial to compare the experience of the PPG with that of other groups, I became aware that this could not be achieved through additional interviews with three or four disparate individuals. For as the enquiry progressed it became apparent that the members'

workplace learning was even more complex, situated and collaborative than I had anticipated, and sustained observation was essential to developing a comprehensive, coherent understanding of their experience. Therefore, gaining comparable insights into the experience of adjacent work-groups would require further observation as well as interviews – in effect, at least one additional case-study - and an expansion on this scale was outside the scope of a doctoral thesis. Moreover, I was mindful it had taken six months to secure the PPG's participation in the case-study, during which time members of the two other groups in the division had declined to take part. Thus, even if an additional case-study had been feasible, it was unlikely it could be arranged within the time-scale of the thesis. Therefore I concluded additional interviews would have very little value or validity, while a more appropriate, useful extension of the investigation was beyond my means.

A 'trustworthy' case-study

Because the process of enquiry involved a high degree of subjectivity and interpretation, the concept of "*trustworthiness*" was adopted as the criterion for judging the quality or rigour of the case-study (Lincoln and Guba, op. cit.). As I explained in Chapter 5, 'trustworthiness' involves four principles, which were observed as follows.

Credibility, especially of the findings.

The analysis in Chapters 6-11 indicates that the case-study involved sustained engagement and persistent observation, to the extent that can be expected of a single research student. Moreover, the norms of good research practice identified in Chapter 5 were observed throughout the case-study, although it is difficult to provide specific evidence of this.

Transferability, Dependability and Confirmability

To observe these principles, researchers should identify the ways in which their values and beliefs influence the process of enquiry; manage this influence in an appropriate manner; act in good faith and ensure their accounts of the enquiry enable peers to audit the research process. Yin (op. cit) proposes this requires 'a chain of evidence' which

allows external observers to follow the research process from initial research questions to conclusion in either direction. Pursuing these principles helps others to judge whether the findings of the case-study can be related to other situations or other times.

Before explaining how these principles were observed in the conduct of the case-study I need to refer briefly to three aspects of my values and beliefs. Firstly, I am an academic educationalist. My work in higher education over many years has required me to associate closely with other academics from diverse disciplines, and pay close attention to their work and learning. Consequently, I have a high regard for academics in general; the work they do, and the skill, knowledge and commitment they bring to it. Secondly, from personal experience, scholarship and research, I have believed for many years that the workplace learning of university teachers plays an important role in the formation of their teaching practices. I also think it is highly complex, and that traditional models of reflective practice and action research cannot account for that complexity. Thirdly, 'Marxian' ideas have been an influence on my thinking for many years. In addition, 'Vygotskian' ideas have long been an influence on my professional beliefs and values as an educationalist. Because Activity Theory draws on both these strands of ideas, I find it attractive and persuasive. For these reasons I have a strong personal and professional commitment to the argument developed in the thesis.

Mindful of this commitment; my personal values and the potential for bias in insider-research (Costley et al, op. cit.), I have sought to conduct the case-study in a reflexive and self-critical manner. In this regard I believe that Chapters 5-11 of the thesis provide a chain of candid and consistent evidence which enables others to audit the research process and to conclude I have acted in good faith throughout that process. In Chapter 5, I described and justified the design of the research process in detail. My analysis in Chapters 6-11 provides detailed descriptions of the 'object of study', and clearly indicates how the concepts and principles of Activity Theory were used to analyse and interpret the data. The analysis and conclusions in Chapters 6-10 provide a comprehensive, systematic account of the historical, social, cultural and individual dimensions of the members' workplace learning and its relation to their practices.

Although I have identified the benefits of adopting Activity Theory as an analytical perspective, in Chapter 11 in particular I have also given detailed attention to the caveats that emerged during the analysis. Finally, in the sections that follow I have described the main conclusions to be drawn from the case-study and the contributions the thesis makes to knowledge. I believe the analysis in Chapters 6-11 clearly indicates their provenance.

Cicourel's (op. cit.) general principle of *ecological validity* was also borne in mind throughout the enquiry. This requires researchers to consider the question: "Do our instruments capture the daily life, conditions, opinions, values, attitudes and knowledge bases of those we study as expressed in their natural habitats?" (p.15). Cicourel's principle is particularly relevant to a study which seeks to identify and comprehend the historical, social, cultural and individual dimensions of workplace learning. When combined with Engeström's (1994) definition of learning referred to above, it helped to prompt an understanding that workplace learning was a complex, pervasive, multi-dimensional constituent of the work-a-day activities of the PPG members. I believe that the analysis, findings and evaluative comments above indicate that the principle was observed to the extent that was possible in a study undertaken by a single research student.

The limitations of the case-study

The case-study had at least three shortcomings.

limited engagement with other activity systems

In Chapter 5 I noted Engeström's (2001) proposal that a third generation of Activity Theory is required which foregrounds the relations between *activity systems* and develops the conceptual tools necessary to describe and understand those relations. The case-study provided a number of examples of the ways in which learning was influenced by relations and tensions between the PPG and other groups, including employers of pharmacists, and the RPSGB. Nonetheless, during the investigation the members spent little time in the company of other people and this led to two significant

shortcomings in the case-study. Firstly, there were few opportunities to observe learning episodes which involved interactions between the members and people whose primary work-groups were other *activity systems*. This limitation indicates the potential for other studies to examine interactions between lecturers 'from' different *activity systems*; the ways in which elements from one *system* become incorporated into others; the tensions this generates and the role this process plays in workplace learning.

Secondly, there were no opportunities to observe the members in other work-groups they inhabit in their working activities. Therefore another potential direction for future research is an investigation of the role played in lecturers' learning by their membership of multiple *activity systems*. In this regard, it is pertinent to note that, because of the nature of my work, the case-study was focussed on learning in working activities relating to teaching rather than research. Moreover, although four members were research-active, they made notably few references to their own research during the case-study. Therefore it would be beneficial to investigate the nature and role of workplace learning across the three aspects of the academic role: teaching, research and administration, especially as these aspects are often closely interwoven in the work of many academics.

a limited exploration of the individual dimension of learning

I have previously noted that socio-cultural perspectives on workplace learning are sometimes said to neglect the individual aspect (for example, Edwards, op. cit.; Hodkinson et al, op. cit.). Partly as a response, there is a growing interest in the role that *identity* plays in the work and learning of academics (for example, Jawitz, 2009a; Archer, 2008; Rowland 2006; Nixon, 2004; Clegg, 2003). In the case-study it was possible to analyse the close relations between the diverse personal histories, interests, attributes and dispositions of the PPG members; the social rules; the formal and informal divisions of labour; the opportunities to learn which arose in the course of working activities and the ways in which individuals responded to those opportunities. Within the context of socio-cultural perspectives on learning, the case-study therefore

contributes to a developing understanding of the individual dimension of workplace learning, and its relations with the historical, social and cultural aspects

Nonetheless, there were limited opportunities to explore relations between identity and learning. The definition of 'identity' is a complex, contested matter, especially with regard to the link between identity and agency, and the contextual factors that promote or hinder the construction of identity (Beauchamp and Thomas, 2009, p.117). Moreover, I noted above that there appears to be some ambiguity within Activity Theory about the nature of the *subject*. (For a discussion of the subject and identity in the context of Activity Theory, see Roth and Lee, op. cit. pp. 215-7.) Thus there is scope for further research and theoretical development relating to the role played by identity in the workplace learning of academic teachers. In this regard, I suggested in Chapter 11 that a focus on gender, and on membership of various generations and *activity systems* is likely to prove valuable. I also noted in Chapter 8 the potential for further investigation of *intra*-personal learning.

a limited exploration of the role that power plays in learning
Some writers (for example, Lee, 2004; Young, 2000) observe that Engeström tends to neglect the role of power, especially in expansive learning, seldom considering, for example, who is able to question extant practice and who is being silenced or prevented from participating in critique. The case-study provided some opportunities to examine and explain how learning was influenced by the formal division of labour; status and the rules of the PPG. However, there were limited opportunities to explore the role played in workplace learning by power and further research in this regard would be beneficial. In particular, I noted there is scope to examine the effects of power in naturally-occurring expansive cycles. More generally, the case-study suggests that a consideration of the role played by power related to gender, age and generation membership would be a fruitful line of enquiry.

2 Main conclusions

Seven main conclusions can be drawn from the case-study and they indicate that the argument developed in Chapters 1-4 is valid in the case of the academic teachers who participated in the case-study. In this section I shall describe these conclusions; explain their significance with regard to scholarship and policy, and identify some further potential themes for research. First, however, it is important to reiterate that the case-study was designed to investigate a 'telling' rather than a 'typical' case of workplace learning. Therefore, most of the conclusions presented below relate primarily to the experience of the PPG members. Nonetheless, each of these *may* also tell us something about the experience of academic teachers more generally. In other words, a number of *provisional* general conclusions can also be drawn from the investigation. In presenting my conclusions I have sought to differentiate carefully between the two kinds.

workplace learning was a pervasive constituent of the PPG members' 'everyday'
working activities

Workplace learning was a pervasive, perhaps ubiquitous, and typically very ordinary constituent of the members' work. It occurred in the course of their participation in 'everyday' collaborative working activities, and involved the joint composition, reproduction, critique, adaptation and transformation of teaching practices, sometimes over long periods. Thus the case-study corroborates the traditional assumption that workplace learning plays a significant role in the formation of academic teaching practices.

Evans et al (op. cit) note that "the metaphor of 'learning as participation' has become the dominant approach to understanding workplace learning" (see also Hodkinson and Hodkinson, 2005; Hager, 2004; Lee et al, 2004; Sfard, 1998). They observe that adopting this metaphor "allows research to address how people learn at work in what appears to be a relatively naturalistic way, through participatory activities such as interactions between employees, undertaking tasks and through playing their work roles" (p.28). As I noted previously, Engeström (1994) offers a more elaborated metaphor, proposing that learning be thought of as:

- meaningful construction and creative use of intelligent cognitive tools, ideas, artefacts and forms of practice
- participation, collaboration and dialogue in communities of practice
- criticism of the given.

The episodes of learning analysed in Chapters 8 and 9 illustrate that learning was a constituent of numerous participatory activities of the kind described by Evans et al. Engeström's definition or metaphor helped to understand the various relations between learning and *participation* which those activities involved. They included:

- learning *to participate* in teaching practices
- learning *through participation* in teaching practices
- learning *to participate* in criticism of the given and *through participation* in critique
- learning *to participate* in the creation, use and evaluation of intelligent tools, ideas, artefacts and forms of teaching practice, and *through participation* in these processes.

It seems reasonable to provisionally conclude that learning will be a similarly pervasive constituent in the working activities of other academic teachers and involve similar processes. However, further research is required to ascertain the validity of this conclusion.

workplace learning was four-dimensional and relations between the dimensions were complex

The members' workplace learning was closely related to historical circumstances at diverse levels; the history of the PPG as a community; the personal histories of its members; how they conceptualised the object and intended outcome of their work; the history of those conceptualisations; the cultural artefacts that mediated them, and those which the members used to 'work on' the students with whom they worked; and the rules that regulated social relations and interactions within the PPG. Indeed the close, complex, reciprocal nature of these relations suggests it is most apt to regard all those

factors as constituents of the learning that occurred. This conclusion is consistent with Roth and Lee's (op, cit.) finding that "unfolding engagement in situated activities, personal biographies, and the histories of groups and societies stand in . . . mutually constitutive relationships" (p. 204).

The members' workplace learning therefore had historical, social, cultural and individual dimensions. The analysis also indicates that during particular episodes of learning each of these dimensions typically comprised numerous significant details, and relations between those details were often intricate. This was frequently the case even in small-scale, short-term, low-key episodes. Thus the case-study provides further evidence that academic teacher' workplace learning is highly situated and complex.

On the basis of these findings we can provisionally conclude that the workplace learning of other academic teachers will be similarly four-dimensional and each dimension will be similarly rich in detail. However, the *specific* details of each dimension; their influence on learning and their role in the formation teaching practices will differ in the case of each workgroup. Further research to examine the validity of this conclusion in relation to the experience of diverse workgroups of academic teachers would be beneficial.

workplace learning had various motives and performed diverse functions in relation to teaching practices

During the case-study workplace learning had five main motives and performed three quite diverse functions in relation to the members' teaching practices. The first function was the *reproduction* or *maintenance* of practice. Learning in this regard was motivated by the need to:

- induct the most recent newcomers
- ensure the behaviour, knowledge and understandings of the members remained broadly consistent, especially their conceptualisations of the object and intended outcome of their teaching activities

   − coordinate the actions of individuals in complex collaborative working activities over time.

The second function of workplace learning was the *adaptation* of practice and *innovation within the broad bounds of the given*. The third, contrasting, function was the *radical transformation* of practice. In both cases, learning was chiefly motivated by:

   − a common commitment among the members to evaluation, experiment and improvement

   − diverse tensions within the PPG, or between it and adjacent groups. These tensions were often local manifestations of the historical circumstances described in Chapter 6, and the cause of many problems, puzzles and challenges the PPG encountered in their work.

Learning associated with change and discovery was sometimes a fragmented, inconclusive process that occurred over long time periods and had an uncertain trajectory

Cole and Engeström (op. cit.) conclude that in *activity systems* "equilibrium is an exception and tensions; disturbances and local innovations are the rule and engine of change" (p.8-9). The episodes of *investigative* and *quasi-expansive* learning analysed in Chapters 8 and 9 illustrate the role that instability played in motivating change and discovery during the case-study. Thus the case-study supports Cole and Engeström's conclusion. However, it is notable that chronic, low-level instability (or at least the potential for it) was generated by the PPG's multi-vocal character and by the need to coordinate the actions of seven individuals within complex, dynamic, contingent, collaborative practices. Consequently, *adaptive* learning to maintain and coordinate practices was a continuing and substantial aspect of the PPG members' working activities. As I noted previously, Engeström tends to give priority to expansive learning in his discussions of Activity Theory and others who draw on Activity Theory are sometimes similarly inclined to associate learning primarily with change and discovery (see, for example, Roth and Lee, op. cit.; pp 198-205). Therefore it is important to

emphasise that the workplace learning of the members often involved *adaptive* learning; this was frequently a more complex process than Engeström's (1994) description of it appears to suggest and it played an important role in the formation of the PPG members' teaching practices.

It seems reasonable to provisionally conclude that workplace learning will perform similar diverse functions and have at least some of the same motives in other workgroups of academic teachers. For example, most groups will need at some point to induct new members, and the case-study suggests we can expect all work-groups to experience internally and externally derived tensions, although each group will experience a distinct 'set' of tensions. Investigations of the motives to workplace learning and its functions in other groups of academic teachers are therefore likely to be of value.

to understand workplace learning and its role in the formation of teaching practices it was necessary to take the workgroup as the prime unit of analysis
The analysis in Chapters 6-10 indicates that, so far as the members' work as academic teachers is concerned, the PPG was their principal workplace, the primary site where their teaching practices were formed and the main locus of their workplace learning. Therefore, to understand their learning in a comprehensive, coherent manner– i.e. to understand what stimulated it; the functions it performed in relation to their teaching practices; how it actually occurred in the course of working activities and interactions; its trajectory through time; its four dimensions and their complex inter-relations, and the particular details which comprised each dimension in specific episodes - it was necessary to take the work-group as the prime unit of analysis, rather than the individual members, and to acknowledge that learning was a participatory, collaborative process.

In this regard, it is important to emphasise that, as a workgroup, the PPG had been constituted on the basis that its members had closely cognate subject-specialisms and closely related teaching duties – i.e. it was a *subject*-group. The PPG members

collectively conceptualised the object and intended outcome of their teaching in ways that seemed to be distinct from those of other adjacent subject groups, and these conceptualisations were mediated by diverse cultural artefacts which in many cases were constituents of the members' distinctive subject-expertise or specialist field. Their teaching practices and workplace learning were oriented towards these conceptualisations. As I noted above, this suggests there would be benefits in further research to examine whether lecturers from various adjacent subject-groups who teach the same students pursue quite different outcomes in their teaching and go about their work with those students in quite different ways. Moreover, if such differences are common there would be value in research which examined the effects they have on students' learning

These conclusions are consistent with Hodkinson and Hodkinson's (2005) finding that very small-scale *subject* departments functioned as the primary workplaces of secondary-school teachers, whose workplace learning arose from and was shaped by their participation in the social and cultural practices of these local *subject*-groups. The experience of the PPG members therefore corroborates the provisional assumption made in previous chapters that academic teachers' primary workplaces are more likely to be located at the level of small-scale disciplinary or specialist-subject groups than at the level of the larger-scale *'department'*. However, in this regard the case-study seems to be at odds with other studies (Trowler and Knight, 1999, 2000; Silver, op. cit.), which identified the department and similar sub-units of the university as the primary workplaces of academic teachers, and thus the level at which their teaching practices are developed and their workplace learning occurs. These apparent differences have potential significance both in terms of understanding academic teachers' workplace learning and its role in the formation of teaching practices, and in relation to the development of policies and strategies to enhance teaching and foster workplace learning. Therefore it seems there would be value in further research to examine the location of other academic teachers' primary work-groups; the relations between the socio-cultural characteristics of departments and their constituent workgroups, and the role played by the department in the workplace learning of various workgroups.

the prevailing, highly individualistic analytical perspectives on workplace learning are unable to provide a comprehensive, coherent account of academic teachers' workplace learning

Although the case-study corroborates the traditional assumption that workplace learning plays a significant role in the formation teaching practices, it also clearly indicates that the two highly individualistic conceptualisations and theorisations of workplace learning analysed in Chapter 2 are unable to take serious account of its character or its role. A more adequate alternative perspective requires us to take the workgroup as the prime unit of analytical attention rather than the individual, and to adopt a much broader four-dimensional conceptualisation of workplace learning. It is particularly notable that neither perspective includes the means to develop a comprehensive, systematic, coherent account of the complex factors that motivated learning in the case-study, and the diverse functions it performed. These shortcomings are a significant concern because, as I have noted previously, the two perspectives are currently the dominant frameworks adopted in the UK to conceptualise and theorise academic teachers' practices and their workplace learning. More especially, models of the reflective practitioner, which are associated in particular with the interpretive-constructive perspective, are a common element of professional development courses for academic teachers, and a potent influence on national and local schemes intended to improve academic teaching.

Activity Theory can provide the basis for a comprehensive, systematic and coherent analytical perspective - but has problematic aspects

The case-study has demonstrated that the concepts and principles of Activity Theory provided the motivation and means to examine and understand the members' workplace learning in a comprehensive, systematic, coherent manner. However, I drew attention in Chapter 11 to seven caveats, which related to:

- consciousness of the motive and object of Activity
- the coordinating role of adaptive learning

- the role of externalisation in adaptive and investigative learning
- the role of critique in learning
- Engeström's tripartite taxonomy of learning
- the ambiguity of cultural phenomena
- the scale and 'overlap' of Activity systems.

These caveats indicate a number of potential themes for further enquiry, which I described in Chapter 11.

Therefore, although the findings of the case-study in this regard support Nardi's (op. cit.) conclusion that Activity Theory is "a powerful and clarifying descriptive tool" (p.7), they also add weight to Roth and Lee's (op. cit.) advice that it "is best considered a useful heuristic, though one that is not devoid of problems" (p. 197).

despite its small size, it is valid to regard the PPG as an activity system

I concluded in Chapter 11 it is valid to regard the PPG as an *activity system*, despite its small size, partly because the PPG members regarded themselves as a distinct community, but also because their conceptualisations of the object and intended outcome of their teaching were distinct from those of other subject groups who taught the same students. This conclusion, which I acknowledge is open to debate, raises the possibility that academic work in universities may often be carried on in an array of quite small, overlapping, local work-groups which function as *activity systems*. This contrasts with the assumption Engeström sometimes makes that *activity systems* occur at the level of the organisation or at least of large sub-organisational units. It seems therefore that the scale of *activity systems*, and the relations between *activity systems* and large organisations are aspects of Activity Theory that would benefit from further consideration and research, at least with regard to universities.

the significance of the case-study in relation to policies and strategies concerned with the improvement of academic teaching and the professional development of academic teachers

The conclusions drawn from the case-study are particularly significant with regard to policy and strategy for two reasons. Firstly, as I noted in Chapter 1, in the UK, current national and local measures to improve academic teaching and support the professional development of academic teachers are typically oriented to the institution or the individual lecturer (Trowler et al, 2005; Trowler and Knight, 1999). In contrast, the case-study provides further confirmation that the formation of teaching practices frequently occurs at the intermediate level of the workgroup and it offers further insights into the complex role workplace learning plays in that process. This suggests there would be benefits in reviewing the orientation of current policies and strategies, and their reliance on models of reflective practice.

Secondly, in Chapter 1, I drew attention to the complex changes the UK government (DBIS, op. cit.) expects to affect higher education during the next decade. If these conditions occur it is probable that many academic teachers will be required to make substantial and sometimes radical changes to their working practices, and that these changes will often involve episodes of workplace learning similar to those in the case-study. In such circumstances, measures to support lecturers are likely to be more effective if they are informed by a better understanding of how economic, social, and cultural circumstances can motivate changes in teaching practices, and of the roles that investigative and expansive learning play in effecting change, discovery and transformation.

In both these respects, the case-study provides an alternative, unified conceptual and theoretical framework, together with detailed insights, examples and findings, which those who have an interest in the improvement of university teaching and the professional development of academic teachers could use in their work. [30]

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[30] Those who wish to stimulate and direct transformational learning may also find it beneficial to consider Engeström's DWR methodology.

With regard to research, the case-study indicates that a comprehensive investigation of academic teachers' workplace learning requires us to take the workgroup, rather than the individual, as the primary unit of study and analysis. It also necessitates the adoption of an ethnographic perspective, which incorporates a theory (or theories) of culture and uses multiple modes of data generation, including sustained observation of collaborative working activities.

3 Contribution to knowledge

In summary, this thesis contributes to an emergent body of research and scholarship in which analyses of the practices, identities and professional development of academics begin from an acknowledgement that universities are workplaces, lecturers are workers in universities and their teaching practices are working practices.

In terms of substantive findings, the case-study indicates that the workplace learning of the participating academic teachers was motivated and directed by complex historical, social, cultural and individual factors, and had diverse functions, which included the maintenance; adaptation and radical transformation of teaching practices. A comprehensive, coherent understanding of these characteristics required the adoption of the work-group as the prime unit of analysis, rather than individual members, and an acknowledgment that learning was a communal process involving various forms of participation. Thus the case-study provides further evidence that academic teachers' practices are highly complex, situated, and often collaboratively formed in small-scale work-groups. These insights are likely to be of benefit to those who have an interest in devising measures to support the development of university teaching and teachers.

In terms of conceptual and theoretical development, the thesis indicates that the two analytical perspectives widely adopted to understand academic teachers' work and learning cannot provide a comprehensive, systematic, coherent account of their workplace learning or its functions. Drawing on Activity Theory the thesis provides an alternative perspective, which others who research the work of academic teachers will

find useful. This perspective had considerable value as a 'lens' through which to view the PPG members' experience. Nonetheless, the case-study also suggests there are aspects of Activity Theory which would benefit from further consideration and investigation, particularly the expansive cycle; the scale of *activity systems*, and the relations between *activity systems* and complex organisational structures like those in many universities.

Finally, with regard to the research process, the thesis provides further indications of the research strategies and modes of data generation appropriate to the study of academic teachers' work and workplace learning.

Appendix 1: A note on the concept of mediating cultural artefacts

The concept of *mediating cultural artefacts* has a fundamental role in Activity Theory. Engeström (1987) closely follows Wartofsky (1979) in identifying three levels of artefact. He has also developed a classification of artefacts according to their function in relation to the object, although he emphasises that an artefact's function is not inherently fixed (1999b, pp 381-2). Because these classifications and his discussions of them are typically rather abstract, it can be difficult to appreciate the very broad variety of phenomena that are held to function as artefacts in Activity Theory. Engeström does at different times provide concrete examples but they are often drawn from healthcare. I think will be helpful, therefore, to briefly summarise Ratner's (op. cit.) consideration of what a "coherent, comprehensive concept of culture" might involve (p. 7). Ratner proposes such a concept would, inter alia, define the essential nature of cultural phenomena and identify subcategories (kinds) of cultural phenomena (p.7). Notably, he argues that this project is "best formulated in terms of Activity Theory that draws on Vygotsky's work" (ibid) because it asserts that:

> *Cultural phenomena are socially constructed artefacts. (They) are social facts in Durkheim's sense of being collectively created and shared. They are neither natural nor individual phenomena"* (p 8, brackets added).

Accordingly, Ratner identifies five interdependent kinds of cultural phenomena:
1 *"Cultural activities* such as producing goods, raising and educating children, making and enforcing policies and laws, providing medical care." Activities "are basic to the ways in which individuals interact with objects, people, and even oneself.

2 *Cultural values, schemas, meanings, concepts.* People collectively endow things with meaning. Youth, old age, man, woman, bodily features, wealth, nature, and time mean different things in different societies.

3 *Physical artefacts* such as tools, books, paper, pottery, eating utensils, clocks, clothing, buildings, furniture, toys, games, weapons and technology which are collectively constructed.

4 *Psychological phenomena* such as emotions, perception, motivation, logical reasoning, intelligence, memory, mental illness, imagination, language, and personality are collectively constructed and distributed.

5 *Agency.* Humans actively construct and reconstruct cultural phenomena. Agency "is also influenced by existing cultural activities, values, artefacts, and psychology." (ibid, pp8-9).

Ratner remains consistent with Activity Theory in identifying cultural activities as the most influential because they "are the means by which people survive and develop themselves." Without activities, he explains, "people would not exist as cultural beings – namely as humans. Consequently, (other kinds of phenomena) are oriented around activities and reflect the organization of activities" (p.9, brackets added,). Ratner is

candid in acknowledging that his proposals are controversial (pp. 9-10) and this acknowledgement cautions against overvaluing their validity and significance. Nonetheless, his attempt to explore the different kinds of cultural phenomena is helpful in the context of this thesis because it draws attention to the diversity and pervasiveness of cultural phenomena in human activity, thought and learning, even if the categories he proposes are open to question (ibid

Appendix 2: Initial topics and lines of enquiry adopted in the case study

The significant factors of workplace learning identified in Chapter 3 indicated the provisional factors or topics for investigation and potential lines of enquiry. These provided an initial general agenda for data generation. Different topics and lines of enquiry were given priority in different modes of data.

1 the biographies of the individuals involved

What are the career histories of the participants?
How have individuals learned about teaching in the course of their careers?
What are the similarities and differences in personal and professional experience between members of the subject group?
What relations are apparent between biography and workplace learning?

2 the goals of work

How do individuals conceptualise the goals of their teaching activities, and what influences have shaped these conceptions?
How do these conceptions influence the ways in which they go about their work as teachers?
Are these conceptions consistent across the subject group?
How are the goals of teaching activities conceived in the documents relating to the participants' working activities?
Have these conceptions changed during the past 2-3 years?

3 the teaching activities which participants' work involves

What main teaching activities are the participants involved in?
How have these changed during the previous 2-3 years?
How is their work organised and allocated; how are tasks and responsibilities distributed?
What opportunities have individual participants had during the previous 2-3 years to engage in activities that are likely to lead to learning (and how did they respond to these)?

4 the history of local working practices

How have the working practices of the subject group members changed during the previous two-three years?
What circumstances occasioned these changes?
How were the changes effected and what roles did individuals play in effecting them?
Did these changes involve changes in the way students are regarded?
What learning did these changes involve and what forms did it take?
Are there changes which group members wanted to be made but which were not? If so, what were they and what inhibited them?

5 social relations and interactions

What social relations, norms and sanctions do the working activities of the subject group involve?

Have these changed since the formation of the subject group?

Are there tensions between members of the subject group?

How are social relations and interactions within the subject group influenced by external factors?

How do the social relations and norms facilitate or inhibit learning?

With whom do participants work closely in their daily working activities and what kinds of collaboration does this involve?

Do the subject group members regard the group as their primary work group for at least some working activities and, if so, which activities?

Are there other work groups to which members of the subject group regard themselves as belonging?

What is the nature of the relations between the subject group and these other groups?

6 cultural values

What cultural values are implicated in the working activities of the subject group and what is their provenance?

Have these changed during the previous 2-3 years?

Are there tensions between any of these values?

7 cultural resources of the local workplace and work process,

What cultural resources – material or technical; symbolic and human - are implicated in the work of the subject group?

Have these changed during the previous 2-3 years?

Does the work of the subject group involve a distinctive 'set' of cultural resources?

Appendix 3: An example of the field notes compiled during the observations

Observation of PPG formally convened meeting 2: 25th January 2007

1 The Meeting: Narrative account

Making and recording the narrative

This meeting lasted for c2.5 hours. It took place in the same room and around the same table as did the first meeting. I was present throughout, seated in almost the same position as for the first meeting (see diagram below) for the same reasons. I made written notes in the same manner as I had at the previous meeting. However, on this occasion I also tape-recorded the meeting for the reasons given below. Again, I said nothing during the meeting and no direct attempt was made to involve me in the discussion. As in the first meeting, a few comments were made that indirectly acknowledged my presence. Similarly, each of the group members occasionally made eye contact with me and/or smiled amiably in my direction, sometimes, I thought, to see if I was sharing a joke or was amused by the banter. Whenever this happened, I simply smiled back. When the meeting finished we again dispersed very quickly; some, including me, to go home, others to eat before going home, Chris to eat before going to a meeting (in town) of a local association of pharmacists and GPs with an interest in alternative medicine. Chris is a founder member of the association and I must ask him more about it.)

At the close of the meeting my notes again covered 2 sides of A4 and they referred to much the same matters as did those for the first meeting. In the evening I spent 60 minutes elaborating my notes from memory. I also listened several times to a particular 20 minute section of tape 1A. On the 27/1/07 I spent two hours typing up my notes and a further 1 hour on 28/1/07. In the process of typing up, I again elaborated a few points and added a small number of others. It took less time to compile my account this time, partly because I used the structure and mode I had adopted for the first meeting; partly because the two meetings were very similar in some respects and I therefore described many of the features of the second in rather less detail.

Prior to the meeting Alison had indicated that this would probably be the last scheduled and formally convened meeting of the group until late May or early June. I therefore decided to ask the group if I could tape-record the meeting. I first ensured that Alison did not object in principle to this. Then I made my request to the group by individual email. In the email I explained I had arranged with Alison that, if any member of the group (including ANO2 who was to be present) objected to this proposal, they could simply tell her in confidence and she would relay this to me. This procedure ensured that anyone, including Alison, could withhold their consent without my knowing their identity. In the event, no one did object.

I had two reasons for wishing to tape this meeting. Firstly, I had noted on several occasions in the first meeting that members of the group jointly constructed a narrative of how they had organised and enacted a particular teaching session the previous year. In the process they drew lessons from their experience and decided how to adapt or amend the procedure for the forthcoming iteration. These narratives seemed to serve as a rehearsal in which the group constructed a shared understanding of how duties and responsibilities would be carried out this time, and also enabled Ben and Ella in particular to learn about activities they had not experienced. I also wondered if there was an element in this process of 'compiling the family history' - constructing a shared memory, sense of identity and shared values. I wanted to record and examine one or two examples of these narratives in more detail than my written observation notes would allow, so decided to ask if I could tape the meeting. In addition, I thought that the tape recording would provide an opportunity to consider the effectiveness of my observation and discern if there were lessons I might learn for future observations, particularly as I shall not now complete a pilot observation.

The narrative
Who: Alison, ANO2, Ben, Chris, Ella (Fran was included in Alison's original email 'invitation' to the meeting, but she was not present. There was no comment on her absence at the meeting, so I am uncertain if she was expected, or merely included in the original email for information purposes. I must clarify this)

When: 25th January 2007 2.00-4.20pm (The meeting was originally scheduled for 9.am on the 25th but Alison asked if it could be moved because "of exam invigilation".)

Where: Dispensing Lab (as for PPG meeting 1)

As in PPG meeting 1, the setting appeared to have little detrimental influence on the mood or conduct of the meeting. The group spend a lot of time together in this room (my impression is that they regard it as 'theirs') so they probably feel at ease here. On the table were copies of the PPG timetables for Jan-June; three personal diaries and several bunches of personal keys (to which I added a small unobtrusive flat-disc microphone).
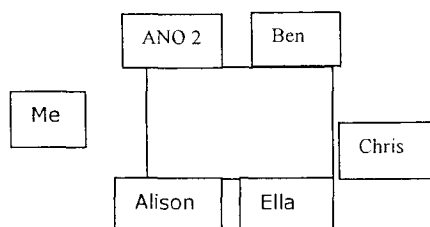
Why: Alison briefly introduced meeting, describing the purpose as being to go through all "the practicals" for the period Jan-June. She emphasised the meeting was not concerned with staffing, which had been dealt with at the first meeting, but how

the sessions would be organised and managed – i.e. taught. As in the first meeting, all appeared to consider this necessary, important and useful. Also as before, the discussion remained 'focussed' on these matters throughout, although again there was a thread of banter (repartee) woven through it.

What:
Pub quiz evening
Before Alison began the meeting proper, Ella told the group of a pub quiz she had previously undertaken to find out about. The group then spent 5 minutes negotiating a convenient date when they would enter the quiz as part of a social evening together. ANO2 was pressed to join them but declined on the grounds that she lived too far away. Alison, Ella, Ben and Chris were all enthusiastic. It was not clear if Heather, James or Fran were invited or would join in. (I need to check this.)

Generally: complex, detailed planning of how each practical session for which members of the group were responsible would be organised and managed ('delivered'), including amendments to the procedures adopted in the iteration of each session during the preceding academic year. These included practical assessments, and 're-sits' for students who had failed any of the assessments. In writing this I realise it sounds very similar to the content of the first meeting but my impression was that little if any of the discussion did deal directly with matters covered previously.

2.05-2.18
Brief discussion of a session on Methadone which Alison will teach, during which Ben asked "Can I come along with you so I know what it's about?" In the first meeting, Ben also asked several times if he could 'sit-in on' sessions that are unfamiliar to him. First hand observation, sometimes with some 'helping out', seems to be a mode of learning he particularly favours.

Prompted by Alison, Chris explains at length how he intends to run a day long practical session (for OSDIP) on drug formulation and marketing. Alison especially and Ben ask questions about various details - it is not clear to me why but the questions are factual and their effect is that Alison and Ben have a very clear understanding of how the session is organised - perhaps they find it helpful in their work with the students to know what they have done in other sessions, perhaps they use the information to reflect on their own teaching, or perhaps they want to know how to deliver this session if the need arises? Ella compares her experience as a student of a session on the same topic that occurred in the latter stages of her course. Towards the end of this stage, Chris narrates, Alison continues to ask questions, Ben and Ella listen carefully. Alison is concerned about Chris teaching the whole day with no support- "So you sort of get to do it all?" Chris replies "Yeah, but I knew that." He is clearly happy with this and it is apparent he could say if he was not and that support/relief would be forthcoming.

A small number of other practical classes are quickly dealt with – Alison, Chris and Ella negotiate staffing in the same manner as they did at the previous meeting.

2.18-2.42
GI dispensing (I need to find out what GI refers to)
This is a c20 minute section of the meeting that I want to transcribe and study in detail. Alison begins by asking "What did we do with GI dispensing last year?" ANO 2 briefly outlines the procedure at first, but then the group begin to reconstruct the session in detail, with AM taking a leading role. As in the first meeting, the group reconstructs the session and redesign it as they do so. This seems to be partly a way of articulating a shared understanding of what they are trying to achieve with the students - the main aims - and partly determining how best to actually organise and manage the session, including the assessment aspect - how to improve what they have previously done. Between them, Alison, ANO2, Ben and Chris systematically revise the practical, including how they will prepare the students for the session, using 'virtualAnon', and how they will manage the assessment and feedback stages. Chris remarks to Ella at the end of this process "You're very quiet." Ella replies, "That's cos I'm taking it all in." I noted she has appeared to be listening intently and there is no sign of irony in her response. As in the previous meeting, it does seem that she and Ben learn - or believe they do - from these narratives. My impression is that they learn:
- how particular sessions are managed
- what their colleagues see as the important aspects of particular sessions (Values)
- the ways in which particular sessions are changed to improve them and the reasons for specific changes
- one way in which to review and evaluate teaching sessions – a way that the group appears to favour and which seems to be an established aspect of their work together.

[Two thoughts here:

1 the people who are not present at meetings are not privy to this process, in terms both of its character and substantive 'content'. The decisions made in the course of these discussions can subsequently be explained to them, of course, and they can be given a summary of the discussions, but it does seem likely that their absence has several different potential consequences (social relations, development of working practices, sharing of experience, cultural values).

2 I'm surprised by how little anyone writes down during these discussions or, conversely, by how much people apparently rely on memory. Given the detailed and complex nature of the discussions, this is a surprisingly 'oral' culture. What each individual seems to 'hold in their head' - commit to memory - is a detailed 'script' for a teaching session, even sessions they have not directly experienced (in Ben's case at this University, in Ella's case as a 'teacher' rather than student). When I reflect on my own experience of similar discussions, I conclude it is generally similar in this respect. (I am reminded of the references in the literature, by Eraut in particular, to the 'scripts' that are reported to guide the actions of medical staff.)]

At the close of this stage Ben quickly realises that Chris and Ella are not available to assist Alison with a session and immediately says, "So I'll volunteer to help with that." His offer is accepted quietly and without fuss - it is a normal occurrence.

2.42-45
a short discussion of the purchase of a laptop and equipment for the laboratory - a slight digression and ANO 2 gently pushes the meeting back to the intended theme.

2.45 - 3.15
A Healthy Heart
This is quite a significant practical in which students apparently simulate providing advice to members of the public. The group discuss the scenarios to be presented to students, the procedures for managing the session, the aims, the problems that arose last year, which were mainly concerned with assessment. Alison initiates a detailed review by asking "What were the problems last year?" This seems to be a common tactic on the part of Alison, prompting the others, especially Chris and Ben and ANO2 to begin a reconstruction. She often requests an account by claiming not to be able remember what "we did last year; that was a whole year ago." Sometimes I am uncertain at the outset if she was actually present the previous year but then as the others begin to reconstruct the event she contributes to the narrative in ways that make clear either she was, or that she has a fairly detailed grasp of how an event at which she was not present was managed. My strong impression is that this is a tactic - conscious or not - by which she ensures that each session is reviewed and re-planned in detail, that appropriate revisions are made and that there is a shared understanding of each session is achieved – without appearing to overtly 'manage' the group. I must ask her about this in the interviews.

A lengthy discussion of potential changes to the assessment and marking process for the practical ensues during which Alison notes that there will be no problems with marking next year because the session will become a non-assessed practical.

[At this point Alison asks "who's going to revise the feedback sheet?" Ben replies "The IT man." Chris immediately responds "OK, I'll do it." Alison also tells the other that a student is conducting a project which includes trying to devise a better feedback process (and form) the team can use to comment on students' communication with patients.]

The discussion of this session has mainly been concerned with reviewing the assessment and feedback procedures. It lasts for 25 minutes and progresses full circle back to a decision to adopt broadly the same procedures as last year, with one or two very minor modifications. It strikes me that only those present will be aware of the detailed thoughtful review conducted during this discussion. Although only a small number of minor changes will be made to the management of the session, my impression is that this discussion has been a significant 'learning episode' - it has enabled all 5 present to identify and consider some significant problems they encounter in many of the sessions they teach. The general problem is how to assess

large numbers of students and give them feedback on their performances in simulations and role-plays when there is very little time available in which to achieve this – it has to be done within the session or at least on same day, in part because the students require this (especially those who perform badly) but also because there is no other opportunity. A particular problem is how to give feedback when it is the students' communication and interaction with patients that is the focus of attention. By the end of the discussion, they (mostly Alison, Chris, Ben and ANO2) have established a common perception of the difficulties, rehearsed some ways in which improvements might be made, and agreed to retain their current procedure for the session in question but work towards developing improved procedures over the next few months.

3.15 - 3.20

Three or four other practical classes are quickly dealt with. There is a short discussion of how to manage a revision class for those 3rd years who fail a practical assessment and need to retake it. Alison refers to the students who will need this class as "These are the sad ones." The comment appears to be sympathetic rather than unkind. Alison, Chris and Ben discuss the difficulties of providing individual feedback on performances and Ben volunteers to give generic feedback which it is agreed has previously proved effective. Again, Alison, Chris and Ben rehearse how this was handled in the previous year. Ella listens intently. ANO2 goes off to her PC briefly, perhaps to check her email? This is done unobtrusively and does not appear to signify any discontent with the pace or direction of the discussion.

3.20 -3.30

A brief discussion of Action Learning Sets leads to a discussion of students' essays. The talk during this stage is mainly aimed at enabling Ella to gain an understanding of the matters discussed.

3.30-4.00

A sustained discussion including a mutual reconstruction of the practical concerned with 'Creams and Ointments.' Alison again prompts the review with questions about detailed procedures. The discussion is quite painstaking, in part because Ben is to teach this session for the first time and has "not done this one before."

The discussion comes back to the Methadone practical and to a questionnaire Chris would like to develop to examine changes in students' attitudes to substance mis-users and methadone treatment.

4.05 - 4.20

ANO2 leaves for another meeting. The discussion begins to wind down. There is a discussion of the need to devise exam questions and of how Ella and Ben will be supported in doing this. Alison remarks of one examination, "I have a moral problem with this exam; I don't think it is at M level." She notes that the external examiner has approved the exam.

The meeting ended at 4.20pm

Decisions: these were primarily concerned with how each practical session would be organised and managed. Particular attention was given to assessment and feedback procedures. A small number of decisions concerned staffing. Immediate action was limited to brief individual notes, often in diaries. Subsequent intended actions were (i) to revise resources for sessions, including proformas (ii) to organise and manage sessions differently.

How:
The manner of this meeting was very similar to that of the first. AM led it off unobtrusively and the description 'first among equals' aptly described her 'style' throughout. Apart from the first five minutes, which were devoted to the pub quiz, the discussion remained focussed on 'business', with almost no irrelevant digressions. There was perhaps a little less repartee on this occasion. The manner of communication was collaborative and mutually respectful. Once again, it was striking that there was no sign of tetchiness or discord. Decisions were again made almost imperceptibly, briskly and collaboratively. Any disagreements were registered in a gentle manner as alternatives to be given due consideration.

Generally Alison, Chris, ANO2, Ben and Ella contributed to the discussions in that order. The facial expressions and posture of Ben and Ella suggested to me they were attentive throughout, even during times when neither spoke for some moments.

The similarities between this meeting and the first reinforce my belief that what I was seeing on both occasions was fairly typical of the social relations that prevail amongst the group – i.e. I do not think my presence has a significance influence on the behaviour of the group or of individual members.

2 notes relating to specific topics/themes
- Biographies
Again, I learned very little about the biographies of the individuals – given the diverse backgrounds of individuals, there were relatively few individual references to prior experience, teaching or otherwise – discussion is almost entirely about experience gained within the group's activities.

- Teaching activities
This meeting, like the first, dealt with practical sessions – i.e. not traditional lectures, seminars or tutorials. Practical sessions – often lasting a whole morning or afternoon, sometimes a whole day - are a prominent mode of teaching for the group members and they raise distinctive pedagogic considerations. These sessions often include short lectures and other kinds of 'direct' teaching but they also involve students carrying out a variety of procedures, sometimes with real or simulated patients. One concern is simply how to manage large numbers of students with limited time, facilities and staff. Another is related to assessment and feedback. How to manage these challenges is a primary aspect of the reconstructions referred to above, as is the development of shared approaches to teaching activities.

- Goals of work

Although it is more often implicit than explicit, the main goal of the group's work seems to be to develop the student's ability to practise (act, think, speak) as a pharmacist – as name of the subject group makes clear! Occasional comments imply that this is different from the goals of some other colleagues, for example, chemists, who work with the same students. (This is a theme I need to explore carefully.) Many of the revisions of sessions are intended to facilitate the achievement of this aim – for example, by enabling teaching to focus on communication and interactions with patients.

- History of working activities

This is a central theme in many of the discussions - rehearsing how sessions were taught, revising how they will be taught - but it seems to be largely confined to the last 12 months (the last iteration of a session) and the next 6 months (the next iteration).

- Cultural resources

Staff members of the group

The dispensing lab – drugs: generic and proprietary, PC based dispensing records, workstations

virtualAnon

Real or simulated patients and doctors

Processes for assessing and giving feedback

Appendix 4: How the concepts and principles of Activity Theory were used as data codes

The theoretical propositions used as an analytical perspective on the data are set out below. The subsequent table shows how codes were derived from these to analyse the data. This is followed by extracts from coded interview transcripts to illustrate how the codes were applied (using NVivo).

1 Teaching practices (that is, the working practices of university teachers) are 'enacted' in a network of distinctive historically evolving, artefact-mediated, activity systems, constituted at a local level within universities, and primarily distinguished by their objects/motives. (The work of university teachers involves membership of multiple activity systems.)

2 The activity system therefore is the prime unit of analysis when seeking to describe and explain university teachers' workplace learning, and the ways in which their teaching practices change. (Thus the goals and actions of individual teachers can only be fully understood in the context of the activity system.)

3 An activity system is always a community of multiple points of view, traditions and interests.

4 Explanations of workplace learning, and of the ways in which teaching practices become established and change must take account of:
-       the participants' own histories
-       the 'local' history of the activity and its constituents, especially its objects, and the theoretical ideas and tools that shape the local activity
-       relations with adjacent or 'neighbouring' activity systems.

5 Developments and changes in teaching practices are primarily motivated by contradictions within and between activity systems

6 The workplace learning of university teachers takes three forms: adaptive, investigative and expansive, and involves the processes of externalisation and internalisation.

7 Expansive learning results in the transformation of the activity system and involves:
-       collective effort,
-       reconceptualisation of the object
-       changes in some or all of the other constituents of the activity system
-       the emergence of new working practices.

(8   Relations and interactions with adjacent or neighbouring activity systems are a significant aspect of change within activity systems)

Code	Category
1	**Adjacent AS**
1.1	**a network** of: historically evolving, artefact-mediated, object oriented activity systems
1.2	primarily **distinguished by their objects/motives** **Questions to keep in mind:** Can distinctive activity systems be identified at a local level? If so, how do their objects differ? To what extent do these activity systems involve distinct MCAs? How do the other constituents of the activity system differ?
1.3	**membership of multiple activity systems**
2.1	**Components of PPSG AS**
2.1 O	*Object* *Activity is motivated by the transformation of the Object into* *Outcomes that satisfy a need or needs.*
2.1 S	*Subject*
2.1 MCA	*Mediating Cultural Artefacts* internal and external tools used by Subject to 'work on' the Object to achieve the Outcome(s). Tools mediate between the Subject and Object, and they both enable and constrain. They provide the Subject with access to the knowledge and skill that have been historically inscribed in them but they also shape and limit the subject's interaction with the object.
2.1 Div Lab	*Division of labour* *mediates between object and community* *the explicit and implicit organisation of the community as* *related to the transformation process of the object into the* *outcome*
2.1 Comm	*Community*
2.1 R&N	*Rules and norms* *mediate between Subject and Community* *"Rules cover both explicit and implicit norms, conventions,* *and social relations within a community"* *rules define how the subject must behave to fit into the* *community*
2.1 PH	*Participants' histories*
2.1 HofA	*History of the Activity*
2.2	*individual teachers*
2.2 goals	*goals*

2.2 acts	*actions*
3	**PPSG Community of** "those who share the same object" - an activity is carried on by/within a community
3MPV	**multiple points of view**
3MInts	**interests**
3MTrads	*traditions*
4	*Learning initial coding category, subsequently recoded/subdivided as in 6 & 7 below*
5	*Developments and changes in teaching practices*
5.1 Con/ten	Contradictions/tensions within or between activity systems
6	*Forms of learning*
6A	*adaptive*
6I	investigative
6E	expansive
6Ext/Int	Externalisation/internalisation
7	**Expansive learning**
7CE	Collective effort
7RO	Reconceptualisation of the object
7Changes	Changes in some/all constituents of AS
7NWP	Emergence of new working practices

Extracts from coded interview transcripts (using NVivo): 6.I Investigative learning

Description:

<Documents\Interviews\Alison Interview 1>   §   2 references coded [2.73% Coverage]

Reference 1 - 1.76% Coverage
6.I Alison: individuals adopt different roles in the learning process

¶74: Chris generates more ideas than me. He is so creative, in a meeting, "I know what..." he'll say and I can see him thinking, and he'll suddenly think of something. He is amazingly creative and Ben is again a more of a doer once he's been told what to do. So it's an interesting split, we've got Chris and I kind of going, "We could do this or we could do this or we could do this," and the others are going, trying to go "Right, well, we'll just get the printing done for that bit and we'll see that bit through and

organise that." I'm useless, I can barely wash my cups up. I don't do... I get, I move away and start to move on to something else. So we've got, in the team, definitely, Chris and I are sort of thinking, "Oh let's change the whole curriculum, now, this minute!" And the others are sort of, sort of then, sort of going behind, it feels like going behind and picking up the bits and going "They want to do this, and right, let's move this on and..." and they, but they, I think they're quite happy and they don't seem to want to generate loads of ideas and I think they feel very, I hope, quite valued in that role, because I can't do that other bit because I just move on and wouldn't do it and Chris's probably a bit better at doing the other, thinking other bits, but he's not, he still moves <?? - 0.19.44> the ideas. So in a team I think it's quite an interesting split.

Reference 2 - 0.97% Coverage

¶78: I'm not saying it's wrong not to not want to generate ideas it's just that I don't, that's how we work best and the best sessions, sometimes Chris and I just sit in the room and we'll just bounce ideas around without the others there because, you know, that's not their thing. So Friday night I wanted to go home and we ended up talking about the curriculum and I didn't even realise the time had gone, and we looked at... quarter to six and we're sitting here thinking how we could input more clinical teaching into the OSDIP programme to make it quite innovative and that just out of the blue, from nowhere, and yet it wouldn't have been something that Fran or Ben would have particularly been involved with, even though they make be the one of the teaching of it,

<Documents\Interviews\Alison Interview 2> - § 2 references coded [3.56% Coverage]

Reference 1 - 2.70% Coverage
6.1 Alison: the value placed on experiment and change
¶129: Well, yes, because sometimes we'll try something and then we'll bring it back to the group that it didn't really work, maybe, and things like that, so there's a lot of that, what we want to do is when we have a lecture, to do some small work group teaching in big lectures and we're always constantly thinking of ways you can do that easily in a big lecture theatre where we're trying to get people to engage with some small group teaching in a lecture theatre, and things like that, and how you can do that.

<Documents\Interviews\Ben interview 1> - § 3 references coded [3.07% Coverage]

Reference 3 - 1.12% Coverage

6.1 Ben: newcomers can contribute to investigative learning/all contributions are respected
¶391: and in some respects I think when I can throw in a new, for me being new to it, I can throw a different viewpoint on things that they may not have considered and certainly obviously their experience within the environment helps me understand you know, if I throw a question at them that I get an answer which is based on experience.

I might throw in something which is based on inexperience but can be equally valuable and I feel that, you know, it's all given and received with a positive light.

<Documents\Interviews\Chris interview 1> - § 2 references coded [4.22% Coverage]

Reference 1 - 1.70% Coverage
6.I Chris: opportunities to propose changes and team discussion of these
¶79: I: Yeah, yeah I think so. I enjoyed that and I like the idea that, you know, next year will be different from this year and you know they'll be an opportunity to say, "Well, I think this would be a good idea for us to put forward" and I like the fact that, you know in the team as it stands there's a good chance that that will happen. However there are the people just like, you know, to say "Well, actually that's probably not such a good idea" and I think we have a reasonably open dialogue and, you know, if it isn't a very good idea then I'll be told that, you know, and I can sort of argue back again, but it does at least mean that, you know, it's not my own... I'm just making the decision, going ahead and doing it and it's falling down for a reason that could have been predicted by somebody else who's looking at it objectively. So I think that's very useful.

Reference 2 - 2.52% Coverage

6.I Chris: enthusiasm for change/review and development of OSDIP
¶91........So, you know, I'm interested in sort of looking at how that can be changed or, or, or meddled with a bit, just, just to improve, you know, this sort of response for the students because I think that's, that's the ultimate thing it doesn't really matter what we do. I think, you know, it's what students get out of it. But the nice part is in that, I think if you can look at it that way, it does, it makes it much easier to enjoy the changes, you know, because you're actually saying, "Yeah I think this would a be a great idea, I'm using my own creativity but also at the end of it, the ultimate aim is that it improves it for the students as well." ....we're certain to make some changes with the OSDIP course, I think, because again two cohorts we've have gone through now, we've learnt, we learnt something from the first cohort, we'll learn something from the second cohort and we'll look into whether what we're doing is the best we can be doing at the moment, so that will change....."

Appendix 5: Data display: the types of learning that occurred

This appendix contains an extract from a basic data display I used at an early stage in the analysis to collate examples of and thoughts about some of the different types of learning which occurred during the case study.

Different types of learning

Evans et al (2006, p28) conclude that "the metaphor of 'learning as participation' has become the dominant approach to understanding workplace learning" (see also Lee et al, 2004; Hager, 2004; Sfard, 1998). They argue that adopting this metaphor allows "allows research to address how people learn at work in what appears to be a relatively naturalistic way, through participatory activities such as interactions between employees, undertaking tasks and through playing their work roles."

Engeström's metaphor defines learning as:
1 participation
2 creation and use of intelligent tools
3 criticism of the given and the transformation of working practices

Keep in mind that learning is oriented to the object/outcome, and different types of learning have a different relation to the object.

Engeström's definition	1 Adaptive but with potential for Investigative or even Expansive
1 (3) Internalisation of 'models'	**Shadowing, observing, helping out** a mode of learning Ben especially favoured Ben, Chris and student volunteer recruitment (see shadowing & helping out above) Creams and ointments class
1 2 & 3 critique Externalisation to Internalisation	Formally convened meetings - recalling, reviewing, evaluating, adapting and rehearsing (and learning to recall, review, evaluate and adapt) *Field notes* *On several occasions in the first meeting members of the group jointly constructed a narrative of how they had organised and enacted a particular teaching session the previous year. In the process they drew lessons from their experience and decided how to adapt or amend the procedure for the forthcoming iteration. These narratives seemed to serve as a rehearsal in which the group constructed a shared understanding of how duties and responsibilities would be carried out, and also enabled Ben and Ella in particular to learn about activities they had not experienced. I also wondered if there was an element in this process of 'compiling the family history' - constructing a shared memory, sense of identity and shared values.* (Some very significant and rich passages of data in the formal meetings. They again raise the Q of where modes of conversation are to be located in the model of the Activity System, and their relation to different types of learning. I think the kinds of conversation that particular groups

engage in – their discursive repertoire– are part of the MCA – or are they part of the Rules and Norms? Trowler et al (2005) note, discourse "both limits and enables thought and actions, structuring the way projects and tasks are conceived, discussed and pursued." (p437))

Two aspects of particular interest:
1) the speculative conversations are part of exploring the bounds and are related to investigative and expansive learning
2) some key concerns (tensions) may require a lot of circling around and building up a head of steam before they can be addressed/resolved.

Engeström's typology combined with the three-part definition of learning makes it easier to recognise that this kind of process or conversation involves different kinds of learning on the part of different participants

Field notes
Alison begins by asking "What did we do with GI dispensing last year?" then the group begin to reconstruct the session in detail, with Alison taking a leading role. As in the first meeting, the group reconstructs the session and redesign it as they do so. This seems to be partly a way of articulating a shared understanding of what they are trying to achieve with the students - the main outcomes - and partly determining how best to actually organise and manage the session, including the assessment aspect - how to improve what they have previously done. Between them, they systematically revise the practical, including how they will prepare the students for the session, using virtual-anon, and how they will manage the assessment and feedback stages. Chris remarks to Ella at the end of this process "You're very quiet, Ella." Ella replies, "That's cos I'm taking it all in." I noted she has appeared to be listening intently and there is no sign of irony in her response. As in the previous meeting, it does seem that she and Ben learn - or believe they do - from these narratives. My impression is that they learn:
– how particular sessions are managed
– what their colleagues see as the important aspects of particular sessions (Values)
– the ways in which particular sessions are changed to improve them and the reasons for specific changes

given the detailed and complex nature of the discussions it is notable that very little was written down during these discussions. Instead, individuals seemed to internalise detailed 'scripts' for the various classes that were discussed, including sessions they have not directly experienced (there seem to be similarities here with the descriptions by Eraut of the 'scripts' that are reported to guide the actions of medical staff.)

What functions do these rehearsals perform? Do they perform the same function for all those who participate in/are present during them - or different functions for different individuals?

	E.g.: 1 to induct/inform the newcomers 2 to remind all concerned of what happened, what went well and what needs changing 3 to reconstruct the knowledge that informs and emerges from working tasks and their outcomes
1 2 (3) Externalisation to Internalisation	**marking dispensing practicals** The immediate discussions about marking are about establishing and maintaining a common understanding of values and judgements in complex circumstances, and consistent decisions. So this seems to be mainly about reproduction/maintenance/adaptive learning? Can we call it maintenance? Closely associated with the marking of particular dispensing practicals here are the continuing concerns about assessment that Alison and Chris in particular are vexed by and discuss. But these underlying tensions/concerns tend towards investigative or expansive learning?
	2 Investigative but with potential for Expansive **considering problems, concerns and puzzles - speculative**
1 2 (3) Externalisation to Internalisation	**Kite-flying** (trying ideas out) what if/suppose we/we could Opportunities to fly kites are important, especially in relation to expansive learning. But some individuals may lack the personal disposition or their training may militate against it – or the MCA of their discipline (see Alison's comments about Ben's training in particular. Some are good at generating ideas, some better at carrying them through,
1, 2 (3) Externalisation to . Internalisation	**Café-coffee and Lunchtime office meetings – assessment problems** The repeated conversations about the same themes that seem to come to nothing. AT provides a set of concepts for trying to understand these, the functions they perform, esp the A/I/E forms of learning – these may be an important part of 'probing the bounds', of finding possibilities and building up a 'head of steam' for expansive learning – paving the way/breaking the ground. They may be a form of investigative learning – finding out how elastic the current AS is and if it will 'permit' the desires change(s) – with the potential to become expansive learning. Data indicate that learning and participation are closely related, as in turn are participation and talk. Moreover, different kinds of talk seem to be closely related to different facets of learning.
1 , 2, (3) Externalisation to Internalisation	**Designing the new OSDip course**
2, 3 Externalisation to Internalisation	**3 Expansive?** **Alison takes over from Graham** ***Extract from Head of Division interview*** *¶115: I: ......So as soon as Graham left, well almost before he'd left the building the amount of formal, I think the phrase is didactical sort of, to tell the students "This is how you put on a label on a bottle. This is an*

overdose, if you don't pick up that overdose you will then get zero," and so on. That changed overnight and it became much more, when I say flexible, you still can overdose and poison people, but "Think about what you're doing, you've got to dispense this prescription, what things do you need to look at or what do you need to tell the patient," rather than learning your lines by rote. So that was the major change, it was moving it up from the old technical college teaching to university and then adding a Masters type deliberate area of uncertainty.....

This passage describes a complex set of circumstances that occurred when Alison took over from Graham. At this point, there is a generation shift - see HoDiv re 'the elder statesmen' and the CDT for the second MPharm, these mark both a change in generation and a reconceptualisation of the Object (Alison's own narrative suggests the reconceptualisation had already begun covertly but with the movement of power from one generation to another it is overtly formulated and inscribed in the new practices.)

Engeström, cited in Fuller and Unwin, 2003, p412 In the process of expansive learning a community begins "to analyse and transform itself." Expansive learning is a "long term process of refining the objects, tools and structures of the workplace
The key to expansive learning is change in the conceptualisation of the object/outcome – hence the importance of criticising the given

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