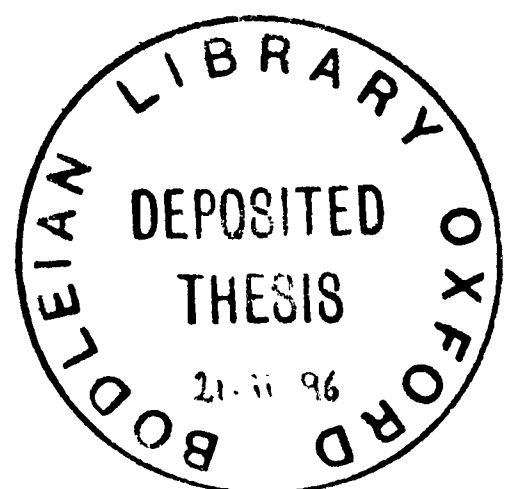


**The problems and possibilities for interns of  
gaining access to  
experienced teachers' craft knowledge**

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A thesis submitted for the degree of Doctor of Philosophy  
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## **Abstract**

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### **The problems and possibilities for interns of gaining access to experienced teachers' craft knowledge**

This thesis is concerned with the problems and possibilities of student teachers' access to the professional craft knowledge of practitioners within the Oxford Internship Scheme. The study builds on previous research by Brown and McIntyre (1986, 1988, 1993), and is set within the wider context of recent research on teachers' thinking and on student teachers learning from experienced teachers.

The investigation reported in this thesis is broadly conceived as an action research study, focusing on the theoretical and practical questions raised by the attempt to institutionalise student teachers' access to experienced teachers' craft knowledge within a PGCE programme. A number of investigations were conducted over a period of two years and together they constitute preliminary studies in the light of which the research problem was revised and developed. The main study investigated the effectiveness of plans for enabling interns (student teachers within the Oxford scheme) to gain access to teachers' craft knowledge.

Post-lesson conversations between interns and experienced teachers were audio-taped and content analysed. The main finding from the content analysis is that it is possible for student teachers to access experienced teachers' craft knowledge through the adoption of procedures broadly similar to those used by Brown and McIntyre (1993) when interviewing teachers following observation of their teaching.

Semi-structured interviews were conducted separately with a sample of the interns and teachers involved. Analysis of these interviews focuses on teachers' and interns' interpretations of the conversations, on this general approach to learning about teaching, on the use which interns made of craft knowledge they accessed, and on wider views about acquiring the knowledge needed for teaching. Further analysis of six cases explores the relationships between the two sets of interviews and the content analysis of the conversations.

The concluding chapter explores implications of the research findings for the accessibility of teachers' craft knowledge, wider issues about the conditions necessary for the potential of school-based initial teacher education to be realised, and future research in the field.

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# **Chapter One**

## **Introduction**

### **Autobiographical context**

This thesis has its roots in the author's work as a member of the 'development group' of teachers seconded from Oxfordshire LEA secondary schools to work with tutors at the Department of Educational Studies at the University of Oxford in the development of a new postgraduate teacher education programme which came to be known as the Oxford Internship Scheme.

At the time of her secondment, the author was Head of Sixth Form and Professional Tutor in a large comprehensive school. In the latter role, she had responsibility for student teachers, newly qualified teachers (for whom, at that time, the first year of teaching was a probationary one), and staff development. While she thoroughly enjoyed working with beginning teachers, it was the professional development of established teachers that was of particular interest to her. It was in pursuit of that interest that, two years prior to joining the 'development group', she had undertaken a small scale research study of the relationship between teacher appraisal and staff development.

Being a member of the development group was a very stimulating experience, not least because of the uniqueness of the situation in which the only full-time innovators were school teachers, charged with the task of developing an initial teacher education programme that entailed changing the nature of university teacher educators' work and introducing a major role for practising teachers. This social reality reflected the overt principle on which the new scheme was to be built of giving at least equal importance

and status to the knowledge and expertise of practising teachers as to the academic knowledge and expertise of university-based teacher educators.

Each member of the development group took an aspect of the new scheme as their special area for study and development, in most cases through small action research projects. The author's choice was to work on that part of the planned curriculum which was to be based on the most distinctive aspect of teacher expertise, the knowledge that they used in their day-to-day practice in classrooms. Although substantial progress was made during the year of the development group, the need and the possibility for research and development in this area has continued, and has formed the basis of this thesis.

## **The Internship Scheme**

It is necessary to provide some basic information about the Internship Scheme, both so that this thesis can be satisfactorily located within a wider framework of thinking about teacher education and also, more mundanely, so that practicalities of organisation and nomenclature can be readily understood by the reader.

- Student teachers, known as interns and working in subject pairs, are attached to the same school for most of the PGCE year. There are usually 8-12 interns (4-6 subject pairs) in each of the Internship schools.<sup>1</sup>
- Structure of the year: J (Joint weeks) - from late September until the end of January the interns work both in the university and the school; S (School weeks) - from the end of January until May, the interns are full time in school with occasional days in the university; J (Joint weeks) - originally, in the final weeks of the course following the school summer half-term, the interns went back to

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<sup>1</sup> In this thesis the terms interns, student teachers and students are used interchangeably.

working both in the school and the university. This second period of J weeks has now been replaced by the Alternative Experience, with interns going full time to an alternative school.

- The two main components of the course are the Curriculum and General Programmes covering both university and school work. Curriculum programmes are organised on a subject basis and deal with all classroom-related work. The General Programme is concerned with non-subject specific whole school or cross curricular issues.
- In relation to classroom teaching, each pair of subject interns works closely with a university-based Curriculum Tutor and a school-based Mentor; and in relation to whole school issues, with a General Tutor based in the university and a Professional Tutor based in school.
- The Internship year is divided into two major stages or phases. During Phase 1, from the beginning of the course until around Easter, the emphasis is on the attainment of basic classroom competence. When the criteria for Phase 1 have been satisfied, the interns enter Phase 2 with the focus on interns' individual agendas as they learn to become self-developing, self-evaluating teachers. In this second phase the primary task for interns in the curriculum programme is an extended self-evaluation assignment, the focus of which is determined by the individual intern.
- The relationship between university and school contributions to the learning of the interns is based on the assertion that there are no absolute right answers about good teaching; rather there are useful ideas from a variety of sources, all of which need to be critically evaluated by interns against diverse criteria of practicality and quality. Sources of knowledge seen as valuable for interns include research and theoretical argument, and **equally** ideas embedded in the practice of

experienced teachers, the latter of which have first to be accessed and articulated. It is the accessing by interns of the knowledge embedded in the practice of experienced teachers that is the focus of this thesis.

## **The structure of the study and of the thesis**

This introduction is followed by a review of the relevant literature focussing first on research on teachers' practical thinking, and then on student teachers' learning from experienced teachers.

The rationale for Chapter Three - Preliminary Studies - can best be understood in the light of a brief explanation of the several kinds of development that took place during the course of the three years of the enterprise:

- (a) Conceived as a very practical developmental exercise, during the course of the first year (the year of the development group), it began to be seen as a potential Masters thesis. It was some time later before it was regarded as a potential D.Phil.
- (b) The author, with no previous training as a researcher learned to think as a researcher as she grew in experience. Thus, the quality of evidence gathered gradually improved from the first through the second to the third year.
- (c) As with many action research projects, there were times when actions had to be taken before data from the previous phase had been satisfactorily analysed. This was especially the case between the second and third years of the work.
- (d) The development generated a considerable volume of data of varying quality, and which was analysed with varying degrees of thoroughness and rigour. In

retrospect , it seems that there was simply too much data to do justice to it all. The main study is seen as that conducted in the third year: in that year, the questions asked were the most important; the circumstances were the most propitious; and the research procedures used the most satisfactory.

The studies of the first two years, therefore, are reported only summarily in Chapter Three. Any claims made for them are properly limited; and evidence from them is not presented to justify conclusions that are reached. Although as much work was done in the first two years as in the third year, that work is presented here as preliminary studies, the implications of which are relevant to an understanding of the context of the main study.

Chapter Four focuses on the research methodology of the study. Following a discussion of different conceptions of action research and of the decision to adopt an action research mode at the level of broad strategy, the implications of this decision for the conduct of the research are explored. The decision to adopt both quantitative and qualitative approaches is explained in terms of their respective appropriateness for different aspects of the main study. The rationale for the use of content analysis for analyzing teacher student conversations is explained; and the chapter ends with a discussion of the conduct of the interviews of interns and of teachers, and of the procedures for the analysis of the data collected.

The next two chapters are concerned with the quantitative strand of the research. Chapter Five traces the development of the content analysis system with which to analyse the conversations between interns and teachers following observation of the latter by the former. The results of that analysis are presented in Chapter Six.

Chapters Seven and Eight report the findings from the qualitative strand of the study, the results of the semi-structured interviews of interns - Chapter Seven - and of teachers in Chapter Eight.

Chapter Nine is the last of the four data-based chapters. The results from both strands of the research - involving three sets of data - are synthesised for six teacher/student teacher pairs.

The final chapter summarizes the main findings of the research and the conclusions which can be drawn from them; and it discusses the implications of these findings and conclusions for our understandings of student teachers' learning in schools, for policy and practice in initial teacher education, and for future research.

# **Chapter Two**

## **Review of the relevant literature**

### **Introduction**

The previous chapter has explained the historical context and the broad purpose of the research to be reported in this thesis. In this chapter the need is to elucidate more fully the intellectual context within which the research was undertaken and the previous research and thinking on which it built.

Fundamental to the research is the concept of teachers' 'professional craft knowledge'. The first main section of the chapter is concerned with clarifying this concept in relation to other kinds of knowledge on which teachers depend and to other ways of talking about teachers' knowledge and thinking. While it would not be helpful to attempt a comprehensive review of the large body of research conducted in recent years on teachers' cognitions, a brief overview of that field is necessary in order to define as clearly as possible the kind of teacher expertise with which this thesis is and is not concerned. The relatively small body of research specifically focused on teachers' professional craft knowledge is examined with a view to making clear the tentative research-based assumptions made in this thesis about that knowledge.

The second main section of this chapter focuses on initial teacher education and especially on how student teachers learn from experienced teachers in school. The enterprise of helping student teachers to gain access to the professional craft knowledge of experienced teachers is explained in relation to what is known about what student teachers learn from established ways in which experienced teachers work with them.

Thus, both the different kinds of things that may be appropriately learned through different procedures, and the limitations of established procedures as a means of gaining access to teachers' craft knowledge, are examined in order to clarify the rationale for the enterprise with which this research is concerned.

## **Teachers' professional craft knowledge**

The focus of the first half of this chapter is on the research literature about the knowledge and thinking of experienced teachers that is embedded in their classroom practice. The knowledge in question is that which informs their teaching and which is not necessarily adequately represented by how teachers talk in de-contextualised ways; of concern, therefore, is teachers' practical knowledge as opposed to their theoretical knowledge.

Teaching has been the subject of research throughout this century. During the first half of the century researchers focused primarily on teachers' characteristics and on 'methods' of teaching, but in the 1950s this began to give way to a broad interest in teachers' classroom behaviour. A further development occurred in the 1970s when concern began to shift to teacher thinking, to their cognitive processes. It is not possible to pinpoint the particular year which witnessed the birth of research interest in teacher thinking, but it is worth noting that Clark and Peterson (1986), Clark (1986) and Calderhead (1987) all point to the 1974 Conference of the US National Institute of Education as an important step in the growing concern of educational researchers with understanding how teachers themselves saw their work. The deliberations of Panel 6 - 'Teaching as Clinical Information Processing' chaired by Lee S. Shulman - produced a report (NIE 1975) that outlined a rationale for a programme of research on teachers' thought processes. While this particular event may not have been critically important on an international scale, it certainly reflected very well a growing concern among classroom researchers with the inadequacy of attempts to understand teachers' (and indeed pupils') behaviour without

attending also to their perceptions, understandings and thinking (see, for example, McIntyre and Morrison, 1977). In the last twenty years, research on teachers and teaching has been increasingly dominated by a concern with teachers' cognitions.

When referring to this burgeoning field of research one is confronted with a problem of semantics since the umbrella title of teacher thinking does not adequately represent a diverse field of research and theory that includes work on teachers' thought processes and on the substance of teachers' thinking; teacher cognition would seem a more appropriate name, embracing as it does both teacher thinking and teacher knowledge. There is a tendency within this field of teacher cognition for researchers and theorists to emphasise either thinking or knowledge. So, for example, the focus of studies concerned with teachers' planning and decision making (e.g. Peterson and Clark, 1978, Yinger 1977, MacKay and Marland, 1978, Morine-Dersheimer, 1977, Borko et al, 1988), as with those investigating expert/novice contrasts in teaching (e.g. Carter et al, 1987; Housner and Griffey, 1985; Peterson and Comeaux, 1987) is teachers' selection and use of different kinds of information. On the other hand, Shulman (1986) and those who have followed his lead (e.g. Wilson et al, 1987) formulate their research projects more in terms of the nature of the different kinds of knowledge that teachers use. Since the dividing line between process and content is at best untidy, for the purposes of clarity the ensuing discussion of research and theorising in teacher cognition will focus on both teachers' knowledge and the cognitive processes in which they engage.

While it has been argued that it is not helpful to make sharp distinctions between teacher thinking and teacher knowledge, there is a case for distinguishing between different kinds of teacher cognition. In their extensive and widely-respected review of research on teachers' thought processes, Clark and Peterson (1986) suggest three broad categories: teacher planning (both pre-active and post-active thoughts); teachers' interactive thoughts and decisions; and teachers' theories and beliefs. There are thus two major distinctions: one between teachers' theories and beliefs and teachers' cognitions while engaged in

teaching work; the other between teachers' cognitions during classroom interaction, and their cognitions while planning or reflecting on their teaching before or afterwards.

Both these distinctions are not only widely accepted but are also of considerable theoretical significance. The first distinction has been strongly emphasised by Argyris and Schon (Argyris and Schon 1974; Argyris 1982; Schon 1983) in terms of the contrast between 'espoused theory', the knowledge learned and accepted by professionals as prescribing what ought to happen and used by them to justify their actions, and 'theories - in-use', the knowledge that guides their action, knowledge that has been developed through practice, and which is usually tacit and rarely needs to be articulated. Whether or not the distinction between 'espoused theory' and 'theories - in use' is quite so sharp in relation to teachers as Schon's (1983) rhetoric in particular would suggest must be open to question. Nonetheless, it is a highly plausible and potentially important distinction which at the very least has a considerable heuristic value for researchers.

The second distinction has no doubt been made by teachers for centuries, but in the modern research literature was made most influentially by Jackson (1968) in his seminal work on life in classrooms. He and subsequent researchers have emphasised the strikingly different conditions within which teachers' thinking during lessons and their thinking at other times has to be conducted, and have shown the implications of those different conditions in, for example, the 'immediacy' of teachers' concerns while engaged in interactive teaching.

Although both distinctions are widely accepted, there is no suggestion that they are inviolate: clearly, teachers' actions reflect their beliefs, and their interactive teaching is carried out within a framework of planning and evaluation. The distinction the researcher would want to make - which combines both those made by Clark and Peterson (1986) - is between the knowledge and thinking of teachers engaged in interactive teaching and their knowledge and thinking when not engaged in practice. As it is the former which is of primary interest to the researcher, it is to a closer examination of the

ways in which researchers and theorists have categorised the different kinds of knowledge and thinking teachers use in their interactive practice that the discussion now turns.

During the last fifteen years a considerable body of research has been published on teachers' cognitions during interactive teaching as evidenced, for example, in the major publications of ISATT (International Study Association on Teacher Thinking), containing selected papers from their international conferences (see, for example, Halkes, R. and Olson, I. (eds), 1984; Ben-Peretz et al (eds) 1986; Lowyck, J. & Clark, C. 1989; Day, C. et al, 1990; Day, C. et al, 1993; Carlgren et al, 1994). The volume and especially the variety of this work, in the questions asked, methods used, and in the intellectual traditions - from North America and Europe - on which it has drawn, is exciting and not a little confusing. It is difficult to map out this work with any clarity. Two of the most influential strands in it, however, have been those associated with the names of Lee Shulman and Donald Schon.

Shulman (1986) in breaking down teachers' content knowledge into three categories, introduced the notion of pedagogical content knowledge, defined as 'the ways of representing and formulating the subject that make it comprehensible to others' (p.9). This concept of a particular kind of subject matter knowledge that is distinctively important within classroom teaching has been developed subsequently in other studies (for example, Wilson, Shulman and Richert, 1987; Grossman and Richert, 1988). The popularity of the concept of pedagogical content knowledge among researchers engaged in studies concerned with the knowledge base of student teachers and experienced teachers, while attesting to its attractiveness, can lead to inflated claims about its usefulness in enhancing understanding of what teachers are doing and the ways in which they are thinking when teaching. Shulman (1986) himself points out that 'to conduct a piece of research, scholars must necessarily narrow the scope, focus their view, and formulate a question far less complex than the form in which the world presents itself in practice' (p.6); and he and his research associates at Stanford would not perhaps claim

that the idea of pedagogical content knowledge adds to understanding of what teachers do, but go no further than to claim - with some justification - that their work has brought to the attention of educational researchers and theorists an important but hitherto neglected area of teaching. In addition to an apparent assumption in the studies of novice teachers carried out by the Stanford team (Shulman, 1987) that there is a correlation between effectiveness in the classroom and the ability to talk of subject matter and pedagogy at length and in complex ways, the concept of pedagogical content knowledge needs to be treated with caution because there is the hint in most of the research studies employing it of an ideological preference for certain modes of teaching over others. The emphasis, for example, on teachers' explanations, use of metaphor, analogy and example, suggests a didactic role for the teacher and a transmission model of teaching.

The work of Schon (1983, 1987) has had an even greater impact on ways in which teachers' cognitions are perceived. His rejection of the notion of intelligent professional practice as an application of scientific theory and techniques to instrumental decisions, in favour of a view of professional expertise as a 'kind of knowing' that is 'inherent in intelligent action' (Schon 1983, p. 50) has been warmly received among those engaged in education, especially teacher educators. Schon (1983) distinguishes the knowledge embedded in the normal skilled action of the professional - knowing-in-action - from reflection-in-action, thinking about what one is doing while doing it. At the heart of Schon's theory of reflection-in-action (derived from case studies of practitioners in various professions not subject to the same time constraints as are teachers) is the notion that professionals when confronted with 'divergent' situations engage in reflective conversations with such situations, framing and re-framing a problem as they test out interpretations and possible solutions.

The ideas of Shulman outlined above are important not least because, in the words of Morine-Dersheimer (1990), 'his interpretation of teacher thinking as a process of formulating pedagogical content knowledge presents yet another positive image of

teachers' mental constructions' (p. 11). Similarly, Schon's work in drawing attention to the wide difference between academic knowledge and the complex and subtle kind of knowledge on which professional action depends, and to the importance in professional decision-making of the recall of situations from prior experience, and of comparisons drawn between present and previous situations, has represented the mental activities of teachers as professionals in a positive way. It is necessary, however, for the purpose of this study to be cautious about the distinctions drawn by both of them. First, while they are interesting, their validity has yet to be demonstrated through research, and their value, therefore, remains to be established. Secondly, in both cases they are distinctions formulated for persuasive purposes with a clear intention of explaining how professionals *ought* to work. Clark and Peterson (1986) in rejecting as 'premature' models of interactive decision making by Peterson and Clark (1978) and Shavelson and Stern (1981), urged researchers to 'first do more descriptive research on how teachers make interactive decisions' (p. 278), before formulating new models or revising existing ones. The distinctions formulated by Shulman and Schon may similarly be premature for those who wish to understand teaching rather than to prescribe: the feasibility and the usefulness of disentangling pedagogical content knowledge from general pedagogical knowledge, or teachers' reflection-in-action from their knowledge-in-action has not yet been established through empirical research.

In rejecting these distinctions and the language in which they are couched, one must raise the question as to what language is appropriate to describe teachers' cognitions in the context of interactive teaching. Tom and Valli (1990) in their examination of teachers' professional knowledge in terms of issues concerned with epistemology and the relationship between theory and practice, describe a craft view of teaching as a 'fugitive though popular orientation' (p. 377) outside the three formal epistemologies, positivistic, interpretive and critical. While they are perhaps overstating the case in their assertion that there is 'great confusion over how craft knowledge ought to be construed' (ibid., p. 378), it remains true that different terms are used to describe teachers' cognitions in the context of interactive teaching - for example, 'professional craft knowledge', 'practical

knowledge', 'personal knowledge', 'personal practical knowledge', 'practical wisdom', each term arising from a different set of interests and assumptions. It is, however, the commonalities rather than the differences among them that bring them within the realms of the interests of this study: all acknowledge that teachers' interactive knowledge and thinking comes from experience, is used in complex ways, and is usually tacit. As different researchers have offered different concepts for describing craft knowledge, the focus now turns to a discussion of some of the most influential empirical studies representing these various approaches.

Elbaz (1981, 1983) in her case study of a high school English teacher called Sarah, suggests five categories for describing practical knowledge in teaching - self, milieu, subject matter, curriculum and instruction. In addition she identifies five orientations of practical knowledge - ways in which the knowledge is held and used - namely, situational, personal, social, experiential and theoretical. Three structured forms to reflect three levels of generality in teacher practical knowledge are offered; rules of practice; practical principles; images. A rule of practice is a brief, clearly formulated statement of what to do in particular situations when purposes are clear. A practical principle is a broader construct that embodies a rationale and the use of which involves reflection. Images are general orienting frameworks:

The teacher's feelings, values, needs and beliefs combine as she forms images of how teaching should be, and marshals experience, theoretical knowledge, and school folk-lore to give substance to these images (Elbaz, 1983, p. 134)

Elbaz (1981) claims that the term 'practical knowledge' reflects the fact that 'teachers' knowledge is broadly based on their experiences in classrooms and schools and is directed toward the handling of problems that arise in their work' (p. 67). The value of her study is in its demonstrating that teachers' practical knowledge is acquired, tested and developed through experience.

Lampert's (1981, 1984) focus is on personal knowledge which brings together the 'knowledge of self' of Elbaz, with knowledge of pupils or students. In conducting case studies of two elementary teachers and of her own teaching (1985), Lampert set out 'to describe those elements of practice which are unconsonant with theoretical principles' (p.179). She argues that in teaching, 'trying to solve many common pedagogical problems leads to practical dilemmas' (ibid, p.181); the teacher, rather than seeking resolution by choosing between dichotomous alternatives, develops ways 'of submerging the conflict below an improvised, workable, but superficial resolution' (ibid, p.189) and thereby manages the dilemma and accommodates competing goals - such as the need to deal with a group of students and the desire to work with a particular student. Lampert's work is helpful, not only as a reminder of the complex and untidy nature of classroom teaching, but also in furnishing a perspective on the way teachers teach without making the either/or choices that some models of them as cognitive information processors would suggest.

Clandinin and Connelly, in common with Elbaz and Lampert, suggest that teachers' practical knowledge is 'experiential, embodied and reconstructed out of the narratives of a user's life' (Connelly and Clandinin, 1985, p. 183). A key emphasis in their work (e.g. Clandinin 1985, 1986; Connelly and Clandinin, 1985; Clandinin and Connelly, 1986) is that teachers' personal practical knowledge takes the form of images. An image in this sense is an experiential construct with moral and affective dimensions - 'the glue that melds together a person's diverse experiences, both personal and professional' (Clandinin, 1985, p. 379). They offer as an example a primary teacher with an image of 'classroom as home', a powerful metaphor that impacts on how she perceives her work and which, therefore, affects her interactions with the children in her class, ways in which she manages the class, and the kind of physical environment she creates. The idea of 'images' as being important in shaping teachers' classroom knowledge and practice has been highly influential (e.g. Calderhead and Robson, 1991; Johnston, 1992), and through such related concepts as 'metaphors' (e.g. Munby, 1986; Russell et al, 1988) links with

Schon's (1983) emphasis on professionals' use of *analogies* in thinking about problematic situations which face them.

Carter (1990) while pointing out that research of this kind reveals more about the characteristics of teachers' knowledge than about what teachers know, argues that it provides

a rich picture of the effects of experience and the conditions under which teachers use their knowledge to make sense of a complex, ill-structured, classroom world of competing goals and actions (p.302)

Earlier it was pointed out that models of classroom decision-making had been criticised as 'premature' by Clark and Peterson (1986); without doubt the usefulness of these models in increasing understanding of what real teachers do and think in real classrooms is limited. Leinhardt's work, however, although similarly rooted in cognitive psychology is empirical, being based on classroom observation and teachers' stimulated recall of their interactive teaching; and it offers useful ways of conceptualising the nature and structure of teachers' interactive decision making. In their study of the knowledge structures that teachers need to be successful in classrooms, Leinhardt and Greeno (1986) suggest that a 'skilled teacher has a complex knowledge structure composed of interrelated sets of organized actions', adding that these organised actions - called schemata - 'are applied flexibly and with little cognitive effort in circumstances that arise in the classroom' (p.75). They hypothesize that guiding the overall conduct of the lesson is an operational plan - lesson agenda - made up more of implicit information about what is to be done and why than an explicit lesson plan. The lesson agenda is broken up into activity structures, the schemata for which include general features such as goals as well as components specifically selected for the individual lesson. Routines, described as 'small, socially scripted pieces of behaviour that are known by both teachers and students' (p.76), are seen as essential supporting features of classroom activities. In a related study of how expert teachers introduced and integrated classroom routines

(Leinhardt, Weidman and Hammond, 1987), it was found that teachers developed more complex routines by combining simple ones and that:

by the end of the first week of school, the effective teacher... had put together and rehearsed a group of routines which singly and in combination, allowed the class to move through the year in a fluid and carefully organized manner ( p.173)

Characterizing teaching as a complex cognitive skill that 'requires the construction of plans and the making of rapid on-line decisions' and as one that takes place 'in a relatively ill-structured, dynamic environment', Leinhardt and Greeno (1986, p.75) suggest that schemata enable teachers to deal with all the information that is available and relevant to the teaching in such a way that they are able to focus on a limited number of decisions.

For the purposes of this study, the term 'craft knowledge' has been chosen as the most appropriate to describe teachers' cognitions while engaged in interactive teaching. It is, however, a term used by diverse researchers and theorists conveying diverse meanings. It is used by some (e.g. Wise et al. 1984; Elliot, 1989) to denote pejorative connotations, with craft knowledge set in unfavourable comparison with professional knowledge. Elliot's (1989) continuum of professional development goes from 'craft teaching' at one end by way of 'teaching as a reflective practice' to 'teaching as an art'. He argues that:

Reflective practice focusses on problematic areas while leaving the unproblematic to the tacit craft knowledge of the teacher. Teaching as art depends on a whole range of personal qualities but does not totally negate the reflective and craft aspects of teaching. (p. 81)

The meaning Tom (1984) attributes to the term 'craft knowledge' could not be more removed from Elliot's above; for him teaching is a moral craft and craft knowledge is to be celebrated. Tom's concern is both to demonstrate what teaching is like and to prescribe what it should be like; his use of 'craft knowledge', therefore, is as value laden as is Elliot's. Neither of these value judgements is intended by the use of the term in this study. The term craft knowledge is used to describe whatever knowledge and thinking is

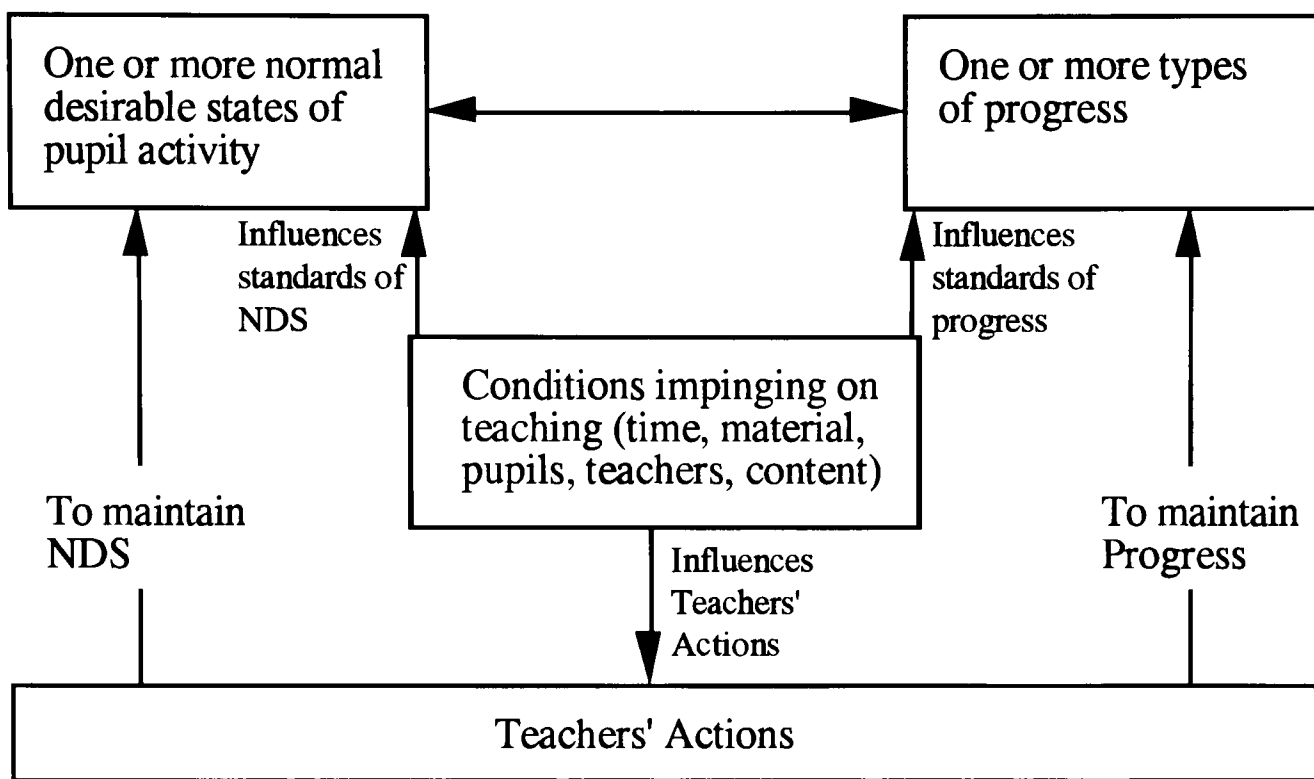
involved in what Buchmann (1989) calls 'teaching as usual' - day to day interactive classroom teaching.

As this study has grown out of an extensive exploration of the practical part of experienced teachers' professional craft knowledge carried out by Brown and McIntyre (1986, 1989, 1993), their definition of such knowledge has been adopted by the researcher. They describe it as knowledge that is:

- (i) embedded in, and tacitly guiding, teachers' every day actions in the classroom;
- (ii) derived from practical experience rather than formal training;
- (iii) seldom made explicit;
- (iv) related to the intuitive, spontaneous and routine aspects of teaching rather than to the more reflective and thoughtful activities in which teachers may engage at other times;
- (v) reflected in the 'core professionalism' of teachers and their 'theories in use' rather than their 'extended professionalism' and 'espoused theories' (1986: 36)

Their study focussed on the nature of 'good teaching' of four primary school teachers and twelve from a secondary school, 'good teaching' defined as that judged to be good on the particular occasion by the individual teacher and his or her pupils. Each teacher was observed teaching a unit of work of two to six hours' duration. Following each lesson and again at the end of the unit the teachers were asked to talk about 'those aspects of their teaching which had particularly pleased them, they felt they had done well or had given them satisfaction' (1993, p. 32). The accounts of how each teacher evaluated and talked about his or her teaching were rich and varied, but the researchers' main interest was in determining common concepts across teachers in order to formulate and test generalisations. Figure 2.1 shows their model of the four main generalizable and interrelated concepts:

**Figure 2.1 The concepts which teachers use in evaluating their own teaching**



(ibid, p. 70 )

The teachers evaluated their teaching in terms of the attainment of normal desirable states of pupil activity, and types of progress. The teachers' actions and the standards they felt were appropriate for evaluating the extent to which their goals were achieved were profoundly affected by a variety of conditions, the most prominent of which were those relating to the pupils.

Following this, the researchers carried out a more detailed study of the teaching of five of the teachers with the aim of refining their initial understandings and of seeing whether it was possible to help the teachers articulate how they achieved their successes in their teaching. At this stage in the study the interview following the lesson involved the discussion of the 'routines' - strategies used to achieve their goals - identified from the previous phase of the study as characteristic of the individual teacher. Although the teachers were unable to make explicit the mental processes involved in their interactive decision-making, they did add to the researchers' understanding of their actions and the reasons for them. They found that the teachers 'rarely took single actions to attain single

goals' (ibid, p.106), but rather that goals and actions were interdependent in complex ways:

Actions would... be chosen with several Goals in mind, and several Actions might be undertaken with the same Goal in mind. Goals, and therefore the Actions to attain them, might be dependent one on another, or mutually compatible, or in conflict....teachers were choosing Actions from extensive repertoires in view of a large number of possible Conditions; they were also choosing various kinds of combinations of actions to attain various kinds of combinations of Goals (ibid, p. 112)

Brown and McIntyre's study is important in two respects. First, they appear to have come up with an answer to the question they set themselves when first thinking about the research - 'How can one discover the knowledge and thoughts which underlie the actions of a person who is engaged in a complex interaction with others?' (ibid, p.108). Their study suggests that with a suitable approach it is possible to gain access to teachers' professional craft knowledge. Secondly, while it does not add to understanding of the processes of teachers' interactive thinking, it offers an empirically grounded model of the substance and logic of teachers' professional craft knowledge.

Brown and McIntyre conclude the reporting of their study with a discussion of the implications of their findings for teachers' professional education and development, curriculum planning, teacher appraisal, teachers' conditions and effective schooling, and with a call for further research to explore this knowledge more fully and widely. A number of researchers were quick to respond to this call.

Using a methodology similar to that developed by Brown and McIntyre, an Australian group of researchers (Batten, Marland and Khamis, 1993) carried out an exploration of the professional craft knowledge of twenty teachers in three Australian States. As in the earlier study, the focus was on the positive aspects of each of the teacher's work as defined by the teacher. An interesting aspect of this project is that each of the three researchers used their respective data sets in different ways. The researchers claim that the subsequent diversity of interpretations added 'a richness to the findings and to the

exploration of the concept of professional craft knowledge' (p. 7); it may also account for some of the findings being at odds with those of Brown and McIntyre. In common with the Scottish study, they found that teachers in describing teaching strategies and the claimed reasons for their adoption talked in terms of student behaviour or response, and that they also talked about the conditions that impinged on the lesson. In addition the researchers claim that they found differences in the approaches to, and perspectives on, teaching of teachers from different curriculum areas. Marland, for example, claims that the Australian studies reveal the importance of constructs not considered by Brown and McIntyre, namely beliefs, metaphors for teaching and conceptions of subject matter and learning; but this claim needs to be considered in the knowledge that his study was of only three teachers and more especially that in interviews he specifically asked the teachers about the origins of their practices.

Cooper and McIntyre's (1995) study of the professional craft knowledge of eight teachers of English and five teachers of History teaching year 7 pupils in the context of the National Curriculum and of the learning strategies of those teachers' pupils, was planned as a direct follow up to the research of Brown and McIntyre (1993); indeed, the researchers assert that a valuable outcome of their study is that it endorses Brown and McIntyre's claim that, given a suitable approach, it is possible to gain access to teachers' professional craft knowledge. They also claim correspondence with the earlier study in relation to their findings: for example, they found that teachers in taking pedagogical actions considered a wide range of conditional factors. In broad terms Cooper and McIntyre's study offers support for Brown and McIntyre's model of teachers' craft knowledge. However, in their findings that in certain conditions (for example, implementing recent innovations ushered in by National Curriculum) teachers seem to relate their craft knowledge more explicitly to their espoused theories, especially in relation to their longer term plans for pupils' learning, there is the reminder that Brown and McIntyre's model still needs to be treated tentatively.

An endemic problem in studies of teachers' practical classroom knowledge or professional craft knowledge arises from the tension between the concern to *understand* experienced teachers' teaching and the ambition to *prescribe* the nature of 'good' or 'expert' teaching. Thus Brown and McIntyre (1993), although determined not to import their own conceptions of good teaching into their study of professional craft knowledge, nonetheless felt obliged to study *good teachers*; and they went to considerable lengths to select such teachers on the basis of pupils' reports, and to justify this procedure. This approach of relying on relevant others' judgements of individual teachers' expertise appears to be one of two main ways of dealing with the issue. Berliner (1987), for example, was similarly concerned, in comparing novice and expert teachers, to choose expert rather than merely experienced teachers and he relied on judgements of expertise made by school principals and 'knowledgeable observers'. The alternative approach widely adopted, for example as already suggested by Shulman (1986) and by Schon (1983), is to build ideological ideas of expertise directly into one's approach to describing and analysing professional activities.

Buchmann (1984, 1989) offers a philosophical analysis of conceptions of teacher knowledge. Pointing out that good practice rather than truth is the goal of action, she asserts that the purpose of practical knowledge is to inform wise action rather than to advance general understandings of teaching. She posits the view that teachers' knowledge is both dependent on and restricted by the folkways of teaching; teachers learn how to teach through a combination of custom, tradition, habit and imitation that serves to link up the history of the individual teacher with the collective traditions of teaching. She argues that the folkways are attractive because 'they are known *by* acquaintance, *through* participation in everyday life, and *as* common sense, which caters to people's belief that they are on top of things' (1989, p. 105). In contrasting teaching expertise with the folkways, Buchmann emphasises the different way in which knowledge is held and used. She claims that although teaching expertise can build on the folkways, it goes beyond their mastery or skilled performance by including:

(1) judgements of appropriateness, testing of consequences, and considerations of ends, not just means; and (2) less typical modes of practice, such as explanation, discussion and the deliberate management of value dilemmas by the teacher (ibid, p. 103)

The tension apparently experienced by researchers quite generally between understanding teachers' professional craft knowledge and this kind of articulation of what is seen as necessary for expert classroom teaching is inevitably shared by those like the researcher exploring ways of improving initial teacher education. Teacher education is surely concerned with understanding, but even more obviously with learning good practice. It is to questions of initial teacher education that the discussion now turns.

### **Student teachers learning from experienced teachers**

In this second part of the review of the literature, the focus is on student teachers learning from experienced teachers in the context of school. While noting that the knowledge of experienced teachers is - as suggested in Chapter One - a neglected source of knowledge for student teachers, it is not claimed that it is the only or most important one. Other elements of initial teacher education programmes, such as academic work or practice in classrooms, are potentially major aspects of their learning. In addition, the growing body of research on the beliefs, attitudes and knowledge student teachers bring with them to their initial teacher education programmes (see, for example, Calderhead and Robson, 1991; Lacey, 1977; Lortie, 1975; Knowles, 1988; Ross 1987; Zeichner, Tabachnick and Densmore, 1987), serves as a reminder that, as McIntyre (1988) has argued, the learning of student teachers is significantly influenced by factors other than their programmes of initial teacher education. The concerns of this study, however, come within the domain of student teachers learning from experienced teachers .

Desforges and McNamara, (Desforges and McNamara 1977, 1979; McNamara and Desforges 1978) asserting that the prime goal of initial teacher education should be

'practical competence', argue for a classroom-located definition of that competence which takes as its starting point the particular strategies adopted by teachers in their classrooms 'as it is the only "model" that takes seriously the practical constraints of the job and offers resolutions which, for the majority of teachers, children, parents and other interested parties actually *work*' (McNamara and Desforges, 1978, p. 24). Thus, runs their argument, student teachers need access to the wealth of expertise residing in teachers' practical competence or craft knowledge. It follows, therefore, that the second goal of initial teacher education is to 'develop with students and schools the articulation, objectification, critical testing and refinement of this craft knowledge as a genuine classroom-centred, research-based applied science of instruction' (ibid., p. 25). It is interesting to note that while acknowledging the potential importance of teachers' craft knowledge to student teachers, the terms in which Desforges and McNamara describe it - for example, 'conservative', and with 'serious limitations' - and their professed aim of objectifying it so that it may be 'examined, analysed and modified' (ibid., p.25) suggest that they are not concerned that student teachers absorb this knowledge uncritically.

In their description of the setting up of a practical procedure to enable student teachers to explore with teachers their thinking about teaching (Desforges and McNamara 1979), they emphasise the need to:

- fully brief all participants to ensure that the conversations between student teachers and teachers take place;
- determine a focus for the conversation;
- ensure that the student teachers undertake observation or some other preparatory exercises in order to generate questions for the ensuing conversations;
- equip the student teachers with the requisite conversation skills.

With respect to this latter point it is worth noting that they saw the establishing of procedures for the discussions, which were to enable the student teachers to access the teachers' craft knowledge 'whilst at the same time maintaining constructive working

relationships between participants' (Desforges and McNamara 1979, p. 151) as the biggest problem facing them. Nonetheless, their tone was a confident one as they explained that the project involved a group of student teachers who had volunteered an interest in it, co-operating college tutors, and teachers who were 'prepared to talk about the practical realities of their job, how under these circumstances they see their problems, how they come to their decisions and how they judge the outcome of these decisions' (ibid., p.149). Whether their professed hope that the project would 'enable the various participants to achieve their different aims' (ibid., p.152) was realised remains a mystery since there have been no subsequent publications about the project, merely hearsay that there was no final report because of the considerable problems that were encountered in that the teachers involved were either unwilling or unable to articulate their craft knowledge.

For Desforges and McNamara, the discussions between student teachers and teachers about how the latter engaged in and construed their teaching was the first (albeit critical) step in the development both of 'a corpus of materials...describing alternative professional practices and providing critical commentaries ...(and) professionally grounded theories, especially theories of instruction, which are both intellectually rigorous and practically relevant' (ibid., p. 152). Support for the notion of a case literature, and for the potential value of such a literature in initial teacher education, comes from Berliner (1987):

The performance of experienced/expert teachers, while not necessarily perfect, provides a place to start from when novices are instructed. The experts' performance provides us ...with a temporary pedagogical theory, a temporary scaffolding from which novices may learn to be more expert. (p.77)

The idea of a case literature also finds favour with Carter (1990) who, in talking of the knowledge base for teaching, states categorically that:

teachers' knowledge is not highly abstract and propositional. Nor can it be formalised into a set of specific skills or preset answers to specific problems. Rather it is experiential, procedural, situational, and

particularistic. It will be necessary, therefore, to develop forms of representation that capture these essential features of what teachers know with a high degree of situation and task validity (p. 307)

Notwithstanding her appreciation of the complexity and context-dependence of teachers' knowledge, Carter is at pains to distinguish between 'natural' settings which, she claims, can be 'confusing', and 'constructed and guided experiences designed on the basis of an analytical understanding of teaching events, because the essential cognitive dimensions are more easily accessible' (ibid., p. 307).

For Berliner (1987) and Carter (1990) then, a case literature of teachers' professional craft knowledge would be an invaluable resource in initial teacher education; where Desforges and McNamara differ from them is in seeing student teachers, rather than social scientists, as the obvious data collectors.

Although programmes of initial teacher education vary quite considerably (Feiman-Nemser and Floden, 1986; Lanier and Little, 1986; Zeichner and Gore, 1990), a feature common to all is the practicum, the main purposes of which are generally assumed to be opportunities for the student teachers to learn from their own experience in classrooms and opportunities to learn from teachers, especially those in a supervisory role. Within such a framework, how do student teachers, or how might they, get access to practising teachers' craft knowledge?

From the prevalence of observation of experienced teachers by student teachers it seems reasonable to infer that it is a valuable way of enabling the latter to access at least some aspects of the former's practical competence or craft knowledge. In the light of research evidence, however, it may be necessary to put on hold any such inference. Student teachers enter initial teacher education already having spent a large part of their lives in classrooms, serving an 'apprenticeship of observation' (Lortie, 1975), but significantly one in which they have looked at teaching and at teachers from the perspective of pupils. The pervasive nature of this 'distorted' knowledge of teaching

acquired as a pupil in school is highlighted by Kagan and Tippins (1991) who, in a study looking at the differences in how student teachers and experienced teachers process and interpret classroom stimuli found that, whereas the experienced teachers tended to define good teaching in terms of clear lesson structure and components such as guided practice, explicit objectives, and examples, the student teachers talked in terms of 'fun, student involvement, positive reinforcement, and affective elements of a teacher's personality' (p.14), thereby, argue the researchers, revealing a pupil rather than a teacher perspective. Moreover, difficulties the student teachers had in interpreting lessons on video tape were compounded when they came to observe live classroom practice. Kagan and Tippins in discussing the implications of their study suggest that:

It may be wise for teacher educators not to assume that preservice candidates interpret field observations according to particular pedagogical principles or with any degree of consensus. The interpretation of non-direct forms of instruction by pre-service teachers may be puzzling at best, miseducative at worst. (ibid., p.17)

The idiosyncratic nature of the perspective that individual student teachers bring to their own and others' classroom practice is underlined by Calderhead and Robson (1991) in their study of twelve student primary teachers. Using the concept of 'image' to describe the thinking of the student teachers, they found that each of the twelve held distinctive images of teaching that influenced their interpretation of classroom practice. There are also a number of studies that suggest that student teachers often find it difficult to cue in to classroom processes when observing, especially in the early stages of their course when typically observation of practising teachers is a major component of their programme in school (see, for example, Copeland, 1981; Calderhead 1983; 1984; 1988).

The evidence is straightforward: student teachers are unlikely to access the craft knowledge of experienced practitioners through observation, even when, as Calderhead (1983) points out, the observation is carried out with schedules or instruments such as FIAC:

these schedules have often been designed for research rather than training purposes and may be of little value in sensitising students to the most relevant cues, from the point of view of understanding observed practice. The use of FIAC ...may serve to make students aware of such features as the amount of time teachers spend talking in comparison with pupils, and the proportion of time spent by teachers in questioning, lecturing, etc., but seems unlikely to sensitise students to the instructional and managerial strategies and routines that teachers employ. .. for beginning teachers to understand what teachers are doing... and to appreciate the information and concerns that guide their actions , requires consideration of teachers' cognitions (p. 4-6)

The observation and debriefing of student teachers by teachers - commonly referred to as supervision - is another established feature of school experience in initial teacher education. How valuable are such supervision conferences and in particular what kinds of teacher knowledge are revealed in them and effectively communicated to student teachers? The literature of supervision and supervision conferences presents a number of difficulties. First, the research literature on supervision in initial teacher education is substantially smaller than that on inservice supervision (Glickman and Bey, 1990). Second, the focus of much of the literature on the supervision of student teachers is on university or college-based personnel (see, for example, Procter, 1993). Third, the concern of much of the literature is the structure rather than the content of the debriefing or feedback (see, for example, Cogan, 1973; Stones, 1984), and the training of teachers in supervisory skills (e.g. Killian and McIntyre, 1986; Koelher, 1986). Fourth, a number of the studies that do focus on what teachers and students talk about in supervision conferences are not as revealing as one might hope for because descriptions are dominated by assumptions about what the teachers *should* be saying (see, for example, O'Neal & Edwards, 1983).

In their study of nine mentor/student teaching pairs in an articulated teacher scheme (an innovative largely school-based trial scheme in England), Elliot and Calderhead (1993) report that mentors rarely claimed to articulate their craft knowledge as a result of observing the articulated teacher or by comparing the observed teaching with their own. These mentors tended to emphasise their 'active listening' to the student teachers and their support for the student teachers' own learning from experience.

The study of supervision conferences carried out by Ben-Peretz and Rumney (1991) is interesting not only because of its focus on substantive issues in the talk between teachers and student teachers in the post-lesson conferences, but also because the report reveals the attitude of the researchers to teachers' craft knowledge. They were not surprised to find that evaluative comments by the teachers dominated the conferences as 'one of the main duties of the co-operating teacher is to improve the teaching of student teachers' (p. 521), but their disappointment at finding no mention by any teacher of innovations or of any references to theory is very clear. That they were not seeking evidence of the teachers' articulation of craft knowledge in the post-lesson conferences can be seen in their comments comparing the talk of the teachers with that of University staff:

Cooperating teachers seem to rely mostly on their own wisdom of practice, and transmit traditions of 'successful' teaching modes. On the other hand, in the conferences attended by the University or seminar tutors, instead of the cooperating teacher, alternatives were suggested on content, method, educational theory, and issues concerning pupils. (ibid., p. 521-522)

It is difficult to know to what extent, within traditional teacher education programmes, student teachers gained access to experienced teachers' craft knowledge in the course of supervision conferences, or more generally what kinds of knowledge they gained access to. As noted above, little research has been directed at understanding what experienced teachers talked about in those conferences, and even when there has been a focus on this, descriptions have generally been in deficit terms about what was not focused on. The best kinds of understandings available, then, are based on evidence such as that from Booth et al (1990) into the initial professional education of history teachers. They report that:

Overwhelmingly...the teachers saw their role in limited terms. They were essentially there to provide practical 'chalk-face' advice: their concerns and the concerns of the students were with the day-to-day management of the classroom, with 'action teaching' (p.104)

and again

Yet the learning ends of teaching were not what teaching supervisors in the main discussed with their students. The research asked the students to indicate how far general issues such as classroom management and disciplining disruptive pupils featured in their discussions with their teacher supervisors as against subject-specific issues such as using and evaluating historical sources, devising empathy exercises and developing a sense of time. It was the former which were the most frequent topics for discussion. More than this, a majority of teacher supervisors (c. 55%) never held regular meetings with their students but relied on casual meetings, for example during break (ibid, p.106)

These teachers might or might not have been giving student teachers access to their craft knowledge: it is difficult to tell from reports framed in such preconceived and deficit terms (even as late as 1990). It does seem possible, however, that much of the teachers' talk was in the form of generalised and decontextualised maxims about good practice, with an emphasis on coping, and conveying little of the expertise embedded in the teachers' own teaching. Nor would this be surprising, given the typical lack of clarity of the supervising teacher's role and the fact that engagement in initial teacher education was not among teachers' contractual duties.

It is not evident, however, that the move towards school-based initial teacher education has significantly changed supervising teachers' practice. The study by Elliot and Calderhead (1993) referred to earlier was of a non-traditional course in which the cooperating teachers had an enhanced role and increased responsibilities as mentors; and Feiman-Nemser, Parker and Zeichner (1993), reporting on an 'alternate route' programme in the United States in which teachers are trained as mentors to support beginning teachers, are even more discouraging about the mentoring of alternate route candidates. In their study of three mentors at work in this school-based programme, they found that when giving feedback to their charges, the mentors not only seemed relatively uninterested in what the beginning teachers were thinking, but failed to share their own thinking about the lesson:

What do they think about the value of the content, the appropriateness of the teaching, or the likelihood of learning? Though they give suggestions

and materials, they do not provide a rationale or make explicit the connections they see. (p.162)

Their criticism of the training manual (Little and Nelson, 1990) on which the training of mentors is based, is trenchant:

The training downplays the 'wisdom of practice' in favour of procedural knowledge derived from research. Presumably these procedures can be applied to generic problems experienced by generic beginning teachers...it is curious that a programme premised on the valued contribution of experienced teachers pays so little attention to mentors' own ideas about teaching and learning to teach. The training runs the risk of de-skilling mentor teachers by substituting neutral procedures for collective practical intelligence in the solution of practical problems (ibid, p. 152-153)

As yet then, there is no empirical evidence that in the new, non-traditional programmes of initial teacher education the post-lesson supervisory conferences between novices and experienced practitioners are markedly different from those that have always taken place. Nor does there appear to be much consensus about what could or should be happening in such conferences. On one hand, some academics appear to be disappointed that teachers are teachers and not academics. Guyton and McIntyre, D.J., (1990), for example, in their review of the literature on student teaching and school experiences quote from O'Neal and Edwards' (1983) conclusions that in cooperating teacher-student conferences 'there was no evidence of an articulated knowledge base regarding either the context or process of teaching ...' and that the basis of most discussions is 'craft knowledge' and 'common sense' (p. 35 quoted in Guyton and McIntyre, 1990, p. 525). Their own summing up of the literature ends on a somewhat disdainful note: 'craft and experiential knowledge and efficiency are rationales for most recommendations' (ibid., p. 525). On the other hand some researchers (e.g. Feiman-Nemser et al, op. cit.) appear disappointed that the promise of more meaningful conversations in which teachers articulate their craft knowledge has not yet been fulfilled. McIntyre and Hagger (1993), for example, suggest that the task of supervision can be transformed and be made much more valuable for student teachers if teachers 'take advantage of the distinctive strengths of their situation' which they explain is teachers' knowledge of such things as:

The behaviour patterns, the strengths and weaknesses, the problems and needs of individual pupils; the resources available in the school, where they are, and how to get access to them; the history of particular classes, what they have become accustomed to, what they have done, what their normal responses are... (McIntyre and Hagger, 1993, p. 92)

The model offered is a speculative one, its feasibility still to be put to the test of empirical research. However, even if the validity of such models were to be accepted, critical differences remain between the contextualised knowledge offered to student teachers in such situations and teachers' craft knowledge - that is the knowledge and thinking embedded in their classroom practice. When giving feedback to student teachers, teachers will necessarily, in the interests of making it appropriate for the student teacher, articulate a generalised and simplified version of their contextualised knowledge to the extent that the dividing line between craft knowledge and espoused theory would necessarily at times become very blurred.

It has been suggested that neither of the two major ways in which student teachers engage with teachers when in school enables them to gain access to the fine grain of teachers' craft knowledge. There is, however, some evidence to suggest that collaborative teaching - when student teacher and teacher take joint responsibility for the planning and teaching of a given lesson - entails the teacher making explicit their implicit planning (Burn; 1992; Jacques, 1992). Burn (op. cit.) elaborates this point, explaining that joint planning involves talking about purposes and the means selected to achieve them:

In planning with the intern (student teacher), the mentor can share his or her knowledge of the particular class and context; for example, the mentor's estimate of how long a suggested task might take different individuals, so reminding the intern of the need to plan extension activities for some... (collaborative teaching) can usefully show an intern how an experienced teacher fleshes out an outline plan, and adapts resources to the particular context in which a topic is to be taught. (p. 135)

From all the available literature on initial teacher education, collaborative teaching between experienced teachers and student teachers does seem to be one of the most

promising ways in which student teachers can gain access to teachers' professional craft knowledge. Such learning is, however, clearly not the prime purpose for which people engage in collaborative teaching. Whenever they are actually engaged in the process of teaching pupils, the priority concern for both teachers and student teachers should be, and almost always is, with the effective teaching of those pupils; and in so far as the purpose of collaborative teaching is one of teacher education, the main rationale offered by Burn (op. cit.) and others is that of providing an appropriately simplified, protective and supportive environment for the student teachers' own teaching efforts. Gaining access to teachers' professional craft knowledge is at best an incidental benefit.

The idea that gaining access to teachers' practical thinking should be an element of initial teacher education has been increasingly voiced in North American literature in recent years. One limitation of such writing, however, has been a tendency to put faith in the hope that such access will be achieved *incidentally*, in the course of established ways of doing things. Yinger (1987), for example, in discussing how the language of practice may be learned, suggests that

The acknowledged purpose of practicum and induction experiences is to demonstrate and communicate the practical knowledge of teaching. These are times, then, when implicit knowledge or action may come to the surface to be passed on to beginners (p. 134)

An even more marked limitation of the North American writing has been a tendency either to ignore, or to be judgemental and to seek to control, the practical thinking of practising teachers. Clark (1989), for example, writing about the contribution that research on teacher thinking can make to teacher preparation, suggests that

the teacher educator who tells it like it is, who abandons the fiction that teaching can become a technically exact scientific enterprise, and who has the courage to reveal how he or she agonizes over real dilemmas and contradictions - that teacher educator is likely to be successful at helping prospective teachers to prepare themselves for uncertainty (p. 319)

Remarkably, however, that message is directed unambiguously at university-based teacher educators, and Clark makes no mention of the possibility that practising teachers might be very much better placed to reveal the truths with which he is concerned, far less discussing how that might be done.

On the other hand, Chastko (1993), for example, does focus on 'the nature of post-lesson discussions between experienced and novice secondary science teachers during an early field experience' (p.169), the lessons having been taught by the experienced teachers. Chastko's interest was especially in pedagogical reasoning and

the discussions constituting the data in this study offered a significant opportunity to explore how novice and experienced teachers communicate about comprehension and transformation reasoning activities (p.172)

In arranging the discussions,

we explicitly requested that both groups of teachers use the STTF to guide their...discussions (p.172)

the STTF being a framework devised by the researchers based on Shulman's (1987) writing about pedagogical reasoning. The data were analysed and reported by contrasting two types of post-lesson discussions: Type I discussions, which focused on the specifics of the lessons, reflected the suggested framework, and contained many interactions between novice and experienced teachers; and the negatively evaluated Type II discussions, which focused on broader aspects of teaching, did not reflect the suggested framework, and involved little participation by the novice teachers. Chastko suggests that the main factor differentiating the two types of discussion was that those of Type I generally occurred when teachers were dealing with an unfamiliar curriculum, whereas those of Type II reflected the 'relatively unproblematic' teaching of teachers dealing with a very familiar curriculum.

It is clear that Chastko was concerned with something quite similar to student teachers getting access to professional teachers' craft knowledge. Yet that similarity of concern is over-ridden by her stronger concern to impose a model of good pedagogical reasoning, and by her readiness to view the teachers' talk primarily in judgemental terms, with regard both to their use of the model and to their ways of relating to the student teachers. Such imposed prescriptive frameworks and judgemental reporting limit the amount that can be learned from such research; and no North American research has been identified which is relevant to student teachers accessing experienced teachers' craft knowledge and which does not share these characteristics.

In relation to student teachers learning from the practical thinking of experienced teachers, a search of the relevant literature perhaps leads one then to share the uncertainty expressed by Clark (1989):

The field of research on teacher thinking is thriving and growing. But what is not so clear is how (or whether) the research can be informative and useful to teacher educators (p.305)

Yet if researchers can gain access to, and thence describe, the professional craft knowledge of teachers, is it not possible to learn from their approaches in order to give guidance to student teachers? It was this question that was most fundamental in shaping this thesis, leading as it did back to the work of Brown and McIntyre (1993). Not only does that work add considerably to understanding of the nature of teachers' professional craft knowledge, it also demonstrates that it is possible, given an appropriate strategy, to gain access to that knowledge which is not generally made explicit and which teachers are not necessarily always conscious of using. The successful research procedures employed in their study served as the foundation of the empirical study in this thesis: in order to access the craft knowledge of the teachers with whom they worked in schools, could interns use the same general approach as had been used by Brown and McIntyre (op. cit.)?

They summarise that approach as:

- Emphasising what was good about the teaching, in the eyes of the teachers and pupils
- Focusing on specific classroom events which occurred when both teacher and researcher were present
- Determinedly avoiding the imposition of any researcher preconceptions about good teaching or about how to make sense of teaching
- Helping teachers to remember what was involved in doing the things they did well, the most important element in this being to interview the teachers very soon after the observed lessons (ibid., p.48)

It is not at all self-evident that student teachers could successfully use such an approach. The above summary greatly simplifies the procedure adopted by the researchers, and gives little indication of the detailed preparation, extensive preliminary negotiations and high level of expertise which characterised the research approach. Furthermore, even if student teachers were able - and indeed willing - to replicate key features of the approach, there was no guarantee that experienced teachers would respond at all in the same way to these novices as they had done to mature and respected researchers.

It is also important to recognise the limitations of what the researchers themselves were able to claim. Brown and McIntyre (1993) are quite explicit in their report that they failed to gain access to the thinking *processes* of experienced teachers engaged in classroom teaching. The most they could claim was to have accessed the ways in which teachers made sense of the situations they faced and what they had taken account of in taking the actions they had taken. And even in that respect it is difficult to contest Huber and Mandel's (1984) argument that when teachers are asked retrospectively to explain

the thinking that underlies their observed practice, there is no way of knowing whether their talk is an authentic account of the practice or a retrospective commentary on it. However, whichever of the two such talk might be, if it provides a plausible account of the observed lesson then it is of value. It is, after all, the teacher's account employing the teacher's constructs; at the very least one is learning how the teacher construes his or her actions.

## **Conclusions**

This research project depends very heavily, then, on the work of Brown and McIntyre (1993). The initial inspiration for the project came from their articulation of the concept of professional craft knowledge and their suggestion of its potential importance as a source for student teachers' learning. Even after a review of relevant literature, however, it is their definition of teachers' professional craft knowledge, their findings about the nature of such knowledge, and their approach to accessing such knowledge which provide the main foundations on which this thesis is built; no other literature has been found for significantly improving on these foundations.

Nonetheless, the present project is of a very different kind to that of Brown and McIntyre (1993). The concern of this study is with student teachers and their professional learning. The interactions which are of primary interest are those between experienced teachers and student teachers, not those between experienced teachers and their pupils. The aim is not to understand more about teachers' professional craft knowledge, but rather to understand how student teachers can gain access to such knowledge and what factors and processes influence such access.

The setting for the present research, that of a close school/university partnership for initial teacher education in which student teachers spend most of their time in schools, is a relatively new kind of setting, and was almost unique at the time when the data were

gathered. The practical goal of the enterprise, that student teachers should gain access to experienced teachers' craft knowledge, was also entirely new, as therefore was the suggested procedure for attaining this goal and the research questions related to it. With so much that was new about the research, it is perhaps not surprising - even though it was disappointing - that so little in the substantive literature, apart from the work of Brown and McIntyre, had a direct relevance to the research questions or to the conduct of the research.

# Chapter Three

## Preliminary studies

### Introduction

The broad concern of this thesis is then with the possibilities and the implications of student teachers effectively gaining access to experienced teachers' craft knowledge, and more specifically with exploring the possibilities of building on the Scottish work of Brown and McIntyre for this purpose. The questions to be investigated were concerned with procedures for gaining access to experienced teachers' craft knowledge as an integral part of an initial teacher education programme, in particular the Oxford Internship programme.

To this end a number of studies were conducted over a three year period, mostly but not exclusively by the researcher. Since the purpose of these studies was to collect evidence and thereby acquire understandings leading to successive developments in the procedures to be used, or in the choice of contexts within which they were used, this series of studies can best be understood as following a classical action research pattern. However, attention in this thesis is focused primarily on the research conducted in the third year of this three year programme. There are four reasons for this:

- (i) there is simply not space within this thesis to report in detail all the studies conducted over the three year period;
- (ii) one of the earlier studies, although important in the programme as a whole, was not conducted by the author of this thesis;
- (iii) the thoroughness and rigour with which the studies were conducted, and especially with which the data were analysed, varied a good deal; and it is the

data for the final year's research that has been most fully and rigorously analysed;

- (iv) the research carried out in the third year represents the culmination of the three year programme, with procedures and contexts for their use being chosen and shaped in the light of considerable evidence and experience: it was questions about the use of these procedures and contexts which seemed most important.

The remainder of this thesis, after this chapter, will therefore be concerned with the research conducted in the final year of the three. Since, however, what was done in that year was considerably influenced by the earlier studies, these studies and what was learned from them are summarised in this chapter. Although a great deal of time and thought went into these earlier studies, they are presented here in commonsense terms, with very little attention being given to methodological issues: the methodological discussion in the following chapter will, as with the thesis as a whole, be almost exclusively concerned with the research of the third year.

The structure of this chapter follows the chronology of the different studies that were conducted during years one and two, and discussion is organised under the following headings:

The pilot studies

The Scottish study

Institutionalising the proposed procedures: first attempts and initial evidence

An interview study

The chapter concludes with a discussion of the implications of these preliminary studies.

## The pilot studies

Of interest to the researcher was whether teachers could articulate their craft knowledge to student teachers within the constraints of everyday life in school: thus the question being investigated was:

Given how busy the practising teacher normally is, how can student teachers get access to practitioners' craft knowledge?

And in relation to this central question were four subsidiary questions:

1. What are the environmental and organisational conditions that encourage articulation?
2. How is it possible to get teachers to talk about their teaching with candour? (i.e. report what they are doing in a non-defensive way that is genuinely responsive to the ways in which they do things, and untrammelled by any theoretical models)
3. Are there some elements of craft knowledge that are more accessible than others?
4. Are there distinctive problems and/or possibilities associated with teachers articulating their craft knowledge to *student teachers* ?

At the time of the pilot studies the researcher was the Professional Tutor in a local secondary school, seconded to the Internship Development Group for the academic year during which she remained in close contact with her school and colleagues. As a preliminary to the first phase of the pilot studies and for the purpose of sensitising herself to issues concerning student teachers learning from the teaching of experienced teachers, she interviewed two teachers from her school who were generally acknowledged to be good practitioners and whom she knew to be effective student supervisors. The focus of these lengthy but informal interviews was how the teachers worked with student

teachers, their suggestions for improving the ways in which teachers and student teachers worked together, and their views on the researcher's tentative plans to enable student teachers to get access to teachers' craft knowledge. In addition, with four groups of student teachers and as part of their programme of general professional studies, the researcher led a session on observation in which the student teachers were asked to write about the most interesting things they had learned from observation and the advice they would give to student teachers to enable them to get the most from observation. The interviews and the written responses of the student teachers served to reinforce the view that if student teachers were to access teachers' craft knowledge they would need considerable help. That such help would be valuable and necessary seemed clear on a number of grounds:

1. There was a widespread view apparent among student teachers and their supervising teachers that observation of the latter by the former, while of some value in the first few weeks of the PGCE year, was of limited value overall and was therefore rarely undertaken in the middle and later stages of the year.
2. Available evidence suggested that, even when observation was undertaken, little time if any was given to teachers' explanations of what they had been doing and why; teachers seemed widely to believe that what happened in their lessons was 'obvious' and generally not very interesting.
3. From Brown and McIntyre's study in Scotland it was apparent, from the pleasure shown by teachers who had been helped to talk about the knowledge and expertise they had used in observed lessons, that despite their experience in supervising student teachers, the articulation of such knowledge was a new experience for them.
4. The complexity, sensitivity and incisiveness of teachers' accounts of their use of knowledge in specific observed situations contrasted with a tendency

towards simplicity and over-generalisation in their decontextualised talk about teaching.

In the first phase of the pilot studies the researcher herself tried to gain access to teachers' craft knowledge in order to find out how to facilitate teachers' readiness and ability to reveal their craft knowledge in a way that took account of time constraints in a 'normal' school week and was not dependent on recording the lesson, and in so doing to develop understandings that could feed into guidance for the student teachers. Adopting the role of professional tutor, the researcher observed three of her colleagues each on four occasions, and within twenty four hours of each observation engaged in a discussion with the teacher about the observed teaching. The main principles of the successful strategy used by Brown and McIntyre (1993) in helping teachers to talk about how they made sense of their teaching were employed: thus, the emphasis in the conversation was on what was good about the teaching, as seen by the teacher, and the focus was on specific events of the observed lesson.

As in the studies carried out by Brown and McIntyre, teachers' talk of particular classroom situations and actions revealed a richness of knowledge use which went well beyond what the observer had surmised from observation, and which pleased and excited the teachers themselves. These early attempts held out the promise then of gaining access to teachers' craft knowledge through the relatively simple procedure adopted. However, a question to be considered was the replicability of this kind of conversation when student teachers were conducting the interview; the readiness of teachers to reveal their thinking seemed in this case to flow from their sense of security with a trusted colleague and from their knowledge that the researcher would, as a respected fellow-teacher, understand and sympathise with what they had been doing. The trials had also indicated that access to teachers' craft knowledge would depend on skilful, disciplined and thoughtful behaviour on the part of the observer/interviewer: from her own experience the researcher was acutely aware of the temptation to ask generalised questions such as 'Is this a feature of your teaching?', and of the difficulty for the

interviewer in refraining from offering one's own preconceptions about how to make sense of teaching. If these were problems for the researcher, it was anticipated that they might also be problems for the student teachers.

On the basis of this experience plans were formulated for helping student teachers to observe teachers and to have follow up interviews about the observed teaching. The second phase of the pilot studies involved three of the teachers who had previously been observed and interviewed by the researcher, being observed and interviewed on two occasions by the student teachers with whom they had been working. In the third phase, a further three teachers, who had not been observed and interviewed by the researcher, were to be observed and interviewed on two occasions by their respective student teachers. The plan therefore was for twelve interviews to be carried out involving six teachers and eleven student teachers (ten of whom worked in pairs). The illness of one of the teachers, and the decision of two of the student teachers (working as a pair) to seek employment outside of teaching meant that only one of the three teachers in the second group was observed and interviewed twice; thus, a total of ten interviews were carried out.

The notes initially given to the student teachers and discussed with them at length focused on three aspects of observation and follow up discussion: the purpose of engaging in it; the difficulty for experienced teachers of articulating their craft knowledge and the important role that student teachers could play in helping them to articulate it; and appropriate ways of conducting the follow up discussion. In relation to the discussion, the guidelines emphasised the points which have already been identified: the importance of focusing on what had gone well in the lesson; the need to stick to events from the specific observed lesson; and the importance of restricting the amount of talk they did and of avoiding the testing of their own hypothetical understanding of events. It was also suggested that they should agree in advance with the teachers whose lessons they were observing upon a general aspect of the teaching of concern to them and relevant to the particular lesson upon which their observations would focus.

After three teachers - those who in Phase 1 had had rewarding experiences of articulating the craft knowledge used in their observed lessons - had been observed and interviewed once, it became clear from the audio-recordings of the follow up discussion that the student teachers' questions - most of which did not conform to the guidelines - were not enabling the teachers to talk about the observed teaching and the thinking underlying that teaching in a way that was helpful to beginning teachers. Although this first attempt by the student teachers had ended in failure, the verbatim transcripts of the follow up discussions were very helpful in enhancing the researcher's understanding of the ways in which the student teachers' concerns and preconceptions had made the discussion difficult and unrewarding for the teachers. In light of the evidence from the audio-tapes it was possible to formulate more concrete operational advice - partly through the use of telling examples - relevant to the distinctive position and problems of the student teachers. Among the points which emerged and the consequent actions taken were the following:

- (a) Types of conversation The student teachers were eager to acquire generally helpful information and ideas, for example about the differences among pupils, about the qualities that a good teacher needs, about how to motivate pupils, or about how to make lessons interesting. They therefore tended to seek the kinds of conversations in which they could learn such things and in which the talk is not tied to specific contexts. The indication was that they did not recognise that the kind of conversation they would have about a teacher's teaching following observation of that teaching would be different from the other kinds of conversations that as student teachers they were likely to have with experienced practitioners. To value this kind of conversation does not imply any devaluing of the other kinds of conversations, but it does imply a recognition of its distinctiveness and of the necessity of it not getting mixed up with the other kinds. This was one of the more important insights gained, and arguably the most difficult one to act on, because it suggested that success was dependent on student teachers both understanding the

differences among types of conversation, and also valuing teachers' craft knowledge to the extent that they would be prepared to restrict themselves on given occasions to the appropriate context-bound kind of conversation.

Revised guidelines included commentary on the notion of different kinds of conversations with experienced teachers. In addition, in discussion both with the student teachers and the teachers, it was pointed out that as the conversation following observation would be much more useful if confined to this distinctive context-bound kind of talk, it might well be more formal in tone than other kinds of conversations.

It was also recognised that any future plans should take account of the need for more time to be given to helping the student teachers to gain a fuller understanding of, and to place greater value on, the idea of professional craft knowledge.

- (b) Sticking to specifics The student teachers had found it very difficult to relate all of their questions to the particular observed lesson. To address this, the general rule was formulated that all the questions asked of teachers should be in the simple past tense. Secondly, in addition to exemplification of the rule, examples were given of the kind of questions to be avoided, such as 'Do you think lots of gestures are important for teachers?' and 'Do you always arrange pupils in groups like that?' It was also pointed out that, in answer to a question about a specific event in the observed lesson, the teacher might very revealingly move away from the starting point in the lesson under discussion by talking about how they might have acted differently had the topic, or time of day, or phase of the lesson, or the pupils involved been different; but that such talk, in response to a specific question, was very different from the talk that would be prompted by the question being posed in general terms.

- (c) Student teachers' own agendas The student teachers found it difficult to accept that experienced teachers might formulate and think about issues in ways quite different from their own. Such was their concern with the issues as they saw them that they had great difficulty in avoiding closed either/or kinds of questions, and in asking instead the open kinds of questions to which teachers can more easily respond. A pervasive concern of the student teachers in this pilot - which took place towards the end of their course - was with planning as opposed to spontaneity. Questions such as 'Did you decide to do that on the spur of the moment?' and 'Is that what you planned to do?' were frequent, and the teachers generally seemed to find such questions confusing and unproductive. Since access to craft knowledge seemed clearly to depend on the avoidance of closed questions of this kind, attempts were made to explain more fully to the student teachers why this was so, and relevant examples of open and closed questions were added to the guidelines.
- (d) Teachers' defensiveness It was not difficult for teachers - including those who had already had successful experiences of articulating their craft knowledge and who had been working amicably with their student teachers for several months - to be put on the defensive by the substance and tone of the student teachers' questions. The student teachers, themselves very sensitive to criticism of their teaching, seemed to have little understanding of the vulnerability to such criticism of their supervising teachers. The general demeanour of the student teachers could easily lead to questions which were seeking explanations to be experienced as demands for justification; and sometimes indeed the student teachers were making such demands. Faced with such situations, teachers could quickly become prickly, and switch from revealing the thinking behind their practice to standing on the dignity of their status and experience.

It was evident that earlier attempts to explain the importance of their role in helping teachers to talk about their observed teaching had failed. This time the discussion about the importance of their contribution to the exercise focused on extracts from

the audio-tapes of their conversations with the teachers. In addition, the difficulty for teachers in unpicking the practices that are normally taken for granted, and the ease with which they could feel threatened were underlined. More specifically, an additional rule was added to the guidelines: a favourite question of the student teachers - 'Why didn't you...?' was banned.

As part of the attempt to overcome this problem of teacher defensiveness, the teachers themselves were reminded of the great value that the researcher - acting on behalf of the group developing a new PGCE course - placed on their professional craft knowledge, and they were urged not to undervalue it themselves. Finally, it was suggested to them that it was not unusual for student teachers to give the appearance of being critical when in fact they were simply eager to understand.

- (e) The complexity of teaching Taking her lead from the researchers in Brown and McIntyre's study, the researcher had noted how teachers' initial response to questions about what they had done in the observed lesson tended to be brief, but that with patient probing they had a great deal more to say. In their conversations with the student teachers, however, this initial reticence was not so easily overcome; the student teachers - if they did not have suggestions of their own to make about the teaching - were ready to accept the first response as representing the totality of the teachers' use of their craft knowledge. Efforts were made, therefore, to persuade them to pursue most issues further, and not be shy of probing for explanations or elaborations. 'Could you tell me what made you decide to do that?', 'Could you say a little more about that?' were offered as examples of questions that could be helpful in getting the teachers to elaborate on initial responses.

On the basis of revised and extended guidelines, and of their experience of, and feedback on, their own first attempts, the student teachers tried the procedure a second time, again with their supervising teachers. At the same time the third phase of the pilot studies got

under way as the revised guidelines were tried with student teachers and teachers who had had no prior experience of the procedure.

Although results were mixed and, with small numbers involved, the effects of different factors could not be disentangled, the revised guidelines certainly seemed to have offered effective guidance. Several of the student teachers had learned to use the procedure skilfully and productively, making it relatively easy for teachers to share their craft knowledge with them. It was also noted that some of the teachers, having become fully convinced of the value of the enterprise, became less dependent on the student teachers' questions. For example, they would convert closed questions into open ones which they could more usefully answer, suggest questions which they thought might be asked, or ignore the aggressiveness which might have seemed implicit in a question.

The one entirely unproductive follow up conversation suggested that, even with clear guidelines, the attitude of the student teachers when interviewing the teacher was of crucial importance: a judgemental stance could undermine the possibility of teachers being able to articulate their craft knowledge. In this particular case the two student teachers made it clear that they had no interest in knowing how their supervising teacher went about maintaining the kind of working classroom atmosphere she saw as desirable as they did not 'approve' of it.

At a theoretical level, the second and third phases of the pilot studies highlighted the fundamental difficulty of the task of enabling student teachers to gain access to the craft knowledge of experienced practitioners. The difficulty could tentatively be articulated in terms of three propositions. First, not only is it easier for student teachers and teachers to concern themselves with more generalised and decontextualised kinds of knowledge about teaching, it is also considerably more attractive. Secondly, experienced teachers take for granted the expertise and thinking embedded in their day to day teaching, do not easily or 'naturally' recognise its complexity or importance, and often find it difficult to unpick it in any detail. And finally, for their part, student teachers are primarily

concerned with their own very differently structured problems, seek general solutions to these problems, and tend to be unaware of the sophistication, subtlety and importance of teachers' craft knowledge. In their ignorance, and at this stage in their learning the craft of teaching, the questions they want to ask are not generally related to the craft knowledge of teachers.

The pilot studies involving the student teachers had then served to remind the researcher of the multi-faceted complexity of the problem in which she was interested; they had also indicated that it was both possible and useful to enable student teachers to gain access to the craft knowledge of experienced teachers. From them she had learned that:

- (i) student teachers could gain access to the craft knowledge of experienced practitioners within the constraints of everyday life in schools;
- (ii) in so far as student teachers can recognise that they do not know what they need to know, their very ignorance can help experienced teachers to articulate what they usually take for granted;
- (iii) by articulating their craft knowledge teachers could help student teachers to learn from them;
- (iv) both teachers and student teachers could come to see engaging in the procedure as a valuable use of their time, and to welcome it as a valuable way of learning about effective teaching;
- (v) both teachers and student teachers recognised the process as something they had not experienced before. This newness was important indicating as it did that both teachers and student teachers not only would have to learn how to engage in this kind of conversation, but also would have to be persuaded that it was valuable and perhaps the only source for a particular kind of learning.

The culmination of this first stage of the study was the production of a package of training materials, including a training video-tape showing negative and positive models,

intended both to be persuasive and to give practical guidance about how to engage in observation with follow up discussion.

## **The Scottish study**

Earlier it was pointed out that this study was designed as an extension of the work of Brown and McIntyre in Scotland. Their major research project - 'Qualities of teachers: building on experience' was of four years' duration, and was entering its third and final phase as this study was beginning. There was, therefore, the opportunity for a period of active collaboration between the two projects. Accordingly, the Scottish team made use of the training materials that had been developed in Oxford as a basis for testing in Scotland the adequacy of the procedural guidelines for student teachers.

The focus of interest was in the effectiveness of the guidelines and the training materials in preparing student teachers to engage in observation with a follow up interview of the teacher. More specifically, the two main questions to be asked were:

- (i) Would student teachers, given such an introduction to the proposed procedure, recognise its purpose as valuable, be persuaded of the need for the procedure as prescribed, and be able to use it in practice when interviewing experienced teachers about lessons they had taught?
- (ii) In so far as the student teachers varied in their use of the proposed procedures, would the hypothesised relationships be apparent between the extent to which these procedures were used and the extent to which teachers articulated the craft knowledge they had used in the observed lessons?

These questions were investigated with student teachers and experienced teachers who had had no previous association with such work. The investigation was conducted as an

isolated experiment, using the contexts of the normal training programme, but not as a planned or integrated element of that programme.

Three groups of student teachers were involved: one group of eight, during their induction block of school experience, in the same school, but in four different subject areas; a second group of four, during their second block of school experience, all student teachers of science, but in four different schools; and a third group of four who happened to be on teaching practice with four of the teachers who had been involved in an earlier phase of Brown and McIntyre's research, in which researchers had sought access to their craft knowledge. The purpose of the study and the proposals for its conduct were explained to the student teachers at meetings held at their colleges prior to their school placements. The value of gaining access to experienced teachers' craft knowledge and the suggested observation and interviewing procedures were explained through a brief presentation, a showing of the video-tape, distribution of the written material and a general discussion. At separate meetings held on in-service days, the background to, and purpose of, the research was explained to the teachers. In addition, the value of teachers' expertise embedded in their routine practice, and the difficulty of making it explicit were discussed.

Because these studies and their findings have been reported in full elsewhere (McAlpine, Brown, McIntyre and Hagger, 1988), they will be summarised only briefly here.

Having had two opportunities to use the proposed procedure, most of the sixteen student teachers were ready to acknowledge the value of observation with follow up interview, although they were much less certain about the merits of a formal interview as opposed to informal conversations, especially if these could be carried out during the course of the observed lessons.

It seemed clear that the brief training had been sufficient to persuade and enable student teachers to focus on the strengths of the observed teaching and to base their interviews

on the specific events of the observed lessons. It was also clear, however, that the training had not been sufficient to persuade and enable them to ask open questions, to probe, to restrict their questions to the specific events of the observed lessons, or to avoid testing their own assumptions about what had happened. There was the suggestion in the comments of some of the student teachers that their problems did not stem from their lack of understanding of the guidelines or their unwillingness to accept them, but rather from the paucity of their interviewing skills. Difficulties were experienced, for example, in remaining silent while waiting for responses to questions, others in formulating on the spot appropriate probing questions, and others simply in being sufficiently articulate. Pressure of time was offered by some as contributing to these problems. However, the pervasiveness of the pattern of asking generalised questions left little room for doubt that these student teachers considered it sensible to seek generalised answers. Since the vast majority of teachers' replies were also generalised it would appear that they were unconcerned with the student teachers' lack of interest in the specific events of the lesson. Indeed, it was in relation to focusing on specific events of the observed lessons that the greatest disparity was revealed between the suggested procedure and the actual conduct of the interviews.

The results were not entirely disappointing; on the contrary, in two respects they were encouraging. First, there was a strong correlation between the use of the suggested procedures by student teachers and teachers' apparent revelation of the craft knowledge used in the observed lessons; in particular, 'appropriate' questions almost without exception gave rise to what were judged as responses of an appropriate kind. The second encouraging result was that the lack of perfect correlation between the quality of the student teachers' questions and that of teachers' responses was almost entirely due to the fact that some teachers were willing and able to articulate their craft knowledge even when the questions they were asked were unhelpful.

## **Institutionalising the proposed procedures: first attempts and initial evidence**

Concurrent with the testing of the procedure in Scotland - as described above - its efficacy was being investigated by the researcher in Oxford. The context of this investigation was very different from the 'experimental' conditions pertaining in the Scottish study. At Oxford, concern with student teachers gaining access to the craft knowledge of experienced practitioners was one of a number of elements in Internship, then (i.e. in 1987-88) in its first year.

In testing the adequacy and usefulness of the preparation of interns and mentors, the questions to which the researcher was seeking answers were as follows:

- (i) Do mentors and interns understand what they are being encouraged to do? If not, why not?
- (ii) Do those interns who do understand get the opportunity to engage in the procedure?
- (iii) Are the interns able to translate that understanding into action?
- (iv) If they are able to, does such action lead to the kind of mentor talk deemed desirable by the researcher and recognised as useful by the interns and mentors?

With the goal of preparing them with the appropriate attitude and understanding for this particular kind of observation and interview, the procedure was introduced to the interns in two-hour meetings (each intern attending one meeting) in the university department during the two-week period of induction to the PGCE course. An initial oral presentation emphasised the contrast between interns' conscious and deliberate planning for teaching and teachers' routinised and largely hidden use of craft knowledge, and the importance and difficulty of getting access to it; it also emphasised the complexity of teaching and the skilled teaching which would usually underlie an apparently

straightforward lesson. The final part of the presentation leading up to a showing of the training video-tape focused on learning to teach; here the emphasis was on the pitfalls of learning through trial and error, and the value of learning from the teaching of experienced practitioners. Written materials were distributed and there was considerable discussion of the procedures and their purposes<sup>1</sup>.

Mentors and university tutors had been introduced to the procedure and to the thinking behind it at a series of seminars held as part of a two day conference during the previous summer. Through the office of the PGCE Course Tutor, copies of the materials given to the interns were now sent to the mentors who were encouraged to engage in the procedure with the interns on a regular basis, perhaps once a fortnight<sup>2</sup>. Curriculum tutors were also reminded of this element of Internship and were asked to encourage the mentors in their subject areas - it being the curriculum tutors to whom mentors related most closely in the university department - and their interns to use the procedure on a regular basis.

One further point was important about the initial guidance given: interns were strongly encouraged to audio-tape the post-lesson interviews with mentors or other teachers. Although it was mentioned that the tutor (the researcher) who had introduced the procedure would value the opportunity to listen to the tapes in order to assess the adequacy of the advice given, this was not offered as the major reason for audio-taping. Earlier experience had suggested that a good deal of student teachers' talk during such interviews was aimed at checking that their understandings of what the teacher had said were correct; and so the suggestion that the interviews should be recorded was aimed primarily at giving the interns later opportunities to listen to what had been said and to reflect on it, and it was in these terms that the suggestion was explained.

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<sup>1</sup> A copy of the written materials given to the interns is in Appendix 1

<sup>2</sup> See Appendix 2 for a copy of the letter that was sent to mentors by the PGCE Course Tutor

The initial response of interns to the meetings about gaining access to teachers' craft knowledge seemed very positive, as did that of the university tutors who attended. Furthermore, reactions from the schools were encouraging: as a follow up to the letter from the PGCE Course Tutor, five schools asked for an opportunity to view the training video-tape, while an additional four schools invited the researcher - as Internship Field Officer - to talk to mentors about teachers' craft knowledge and ways in which it might be accessed by interns. It was therefore with a growing sense of disappointment that the researcher came to realise that the suggested procedure was being used very rarely; and, despite informal encouragement in various ways of both interns and mentors, this continued to be the case throughout the first term of the course. The primary task for the researcher at this stage, therefore, was to understand why this was so.

Unsystematic evidence derived from participant observation suggested that the pressures on time for interns and mentors had been grossly underestimated: with hindsight the initial suggestion to both interns and mentors that they engage in the procedure on a fortnightly basis, seemed naïve in the extreme. Furthermore, this initiative was jostling with many others in the new PGCE course for the attention of interns and mentors; a feature of two of the curriculum programmes, for example, was the need for interns to carry out audio-taped interviews with their mentors.

The first structured attempt at gathering evidence to help in this task was the distribution of a brief questionnaire to interns early in the second term. This was also seen as an opportunity to encourage them to engage in the procedure during the coming weeks: the letter accompanying the questionnaire reminded them of the presentation during the induction period, was sympathetic to their not having engaged in the procedure, and suggested they observe and interview a teacher - and audio-tape the interview - on two occasions before the end of the term.<sup>3</sup>

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<sup>3</sup> See Appendix 3 for copies of the questionnaire and covering letter

Of the cohort of 143 interns, 120 returned completed questionnaires (a response rate of 84%) of whom only six took up the explicitly offered possibility of returning it anonymously. The first question reminded interns of the presentation in October and offered five options about what they had done in relation to it; they were invited to chose the statement that best described what they had done. The results are presented in Table 3.1 below.

**Table 3.1 Results from questionnaire survey of interns**

Interns' reported activities in relation to October lecture	Percentage frequency
1. I have a tape of an interview with my mentor (or other teacher) following an observed lesson.	12
2. I have attempted to follow the procedure outlined, but I have not taped an interview.	23
3. I observed my mentor (or other teacher) and talked with her/him afterwards, but did not restrict myself to the kind of interview suggested.	59
4. I have not attempted to observe and interview my mentor (or other teacher), but the way in which I have approached teachers has been influenced by what was said in the lecture about the professional craft knowledge of teachers.	7
5. I do not think I have been influenced in any way by the lecture in October.	0

To begin with, it was encouraging that none of the respondents chose the fifth and most negative option, 'I do not think I have been influenced in any way by the lecture in October'.

The fourth statement, 'I have not attempted to observe and interview my mentor (or other teacher), but the way in which I have approached teachers has been influenced by what was said in the lecture about the professional craft knowledge of teachers', had been

included because of the frequency with which headteachers, professional tutors and mentors commented on the sensitivity and awareness of interns in comparison with student teachers of previous years: few of them thought they knew it all or that there was little that experienced teachers could teach them. Even had the researcher accepted the validity of this general impression, it would not have been reasonable to believe that such attitudes on the part of interns had stemmed from the October presentation and written materials about teachers' craft knowledge. 7% chose this response which served neither to support nor contradict the general impression received from schools. Nor was it important; what was important was that it appeared that the interns' attitude to teachers and to their expertise was not a barrier to their gaining access to teachers' craft knowledge.

The dominant response, from 59% of respondents - 'I observed my mentor (or other teacher) and talked with him/her afterwards, but did not restrict myself to the kind of interview suggested', sent out a clear message: two-thirds of the interns had not been persuaded to try and adopt the kind of procedure that had been developed.

Ninety per cent of the respondents accepted the invitation to comment on their reasons for doing what they had done. Fifteen per cent of the comments indicated that the guidelines or at least the ideas behind them had been useful, for example:

After some initial embarrassment, the interview proved to be honest, illuminating and very helpful in terms of understanding the methodology and management techniques of an experienced teacher. I also found that the questions asked were directed in such a way (because of the formal setting) that they would not have been asked in our normal exchanges with our mentor.

A useful exercise and the lecture was helpful in stressing the need for the intern not to seem antagonistic during the interview.

Almost all the other comments fell into three clear clusters, of roughly equal size, concerned with time, taping and formality.

Time Interns commented simply that there was not enough time to use the procedure. While some pointed out that 'teachers don't have time to talk after lessons' or that 'We have so many other things to observe and think about in the J weeks that we just haven't had time to organise the interview', in most cases it was not clear whether the perceived problem was with the mentor's or the intern's lack of time.

Taping Three main kinds of problems with the taping were mentioned, all with more or less equal frequency. First, interns themselves said they considered taping unnecessary or inappropriate, and that they preferred taking notes.

...it would be a rather artificial kind of interview which would be altered fundamentally by the 'silent presence' of the tape recorder. I get all I need from notes and they don't get in the way.

I'm not happy about this taping business.

Secondly, mentors were reported as not liking to be taped.

They don't like being taped, it makes them react unnaturally - they try and give us the answers they think the Department would like them to give us...

And thirdly, there were practical problems like the need for a quiet room, the lack of a tape-recorder, or technical problems when recording was tried.

It seemed unduly intimidating to actually tape the interview - I was quite relieved when we couldn't find a power point in the room.

In addition, several of the interns who had been set specific tasks in relation to their curriculum programmes which involved taping conversations with their mentors, commented that it would be unreasonable to ask for any more taped conversations.

Formality Interns reported that they found it easier, preferable and more useful to talk with their mentors informally. The formality of the suggested procedure was artificial

and contrived, mentors did not see the need for it, and the guidelines could be followed roughly in an informal way:

I feel that any useful information can usually be picked up in a casual 5-10 min. chat after the lesson, and so I haven't bothered with the more structured and formal approach.

My mentor does not seem to be the kind of person who would enjoy this type of close analysis after a lesson. Also I feel it would be a rather artificial kind of interview.

These problems of time, taping and formality were closely inter-related. In schools, teachers' time - other than that timetabled with pupils - is rarely available in clear, structured units. The tendency is for time to be found when doing something else - having coffee, walking to the next lesson, preparing apparatus, marking books; talking 'on the hoof' is a commonplace. Given such a situation it is not surprising that structured and disciplined conversations among adults are the exception rather than the norm. It was clear that the kind of formalised interviews that interns had been encouraged to engage in with their mentors was alien to the culture of school life; and the taping of those interviews had served to exacerbate their alien formality.

### **An interview study**

The questionnaire evidence had been gathered in January, at the end of the first phase of the Internship programme and before the interns had spent any weeks working fulltime in schools. To get a fuller and broader picture, a more in-depth study through interviews was conducted towards the end of the year's course, with the purposes of:

- exploring the replicability, and generalisability to the whole year, of the questionnaire findings, and seeking elaboration of them

- finding out how mentors and interns construed teachers' expertise and learning about teaching
- finding out how access to teachers' craft knowledge - whether by the proposed procedure or in other ways - fitted into a totality of what there was to be learned and how it could be learned.

It was clear that the recommended procedures were not being widely followed, and the interviews were seen as an opportunity to stand back and take stock. More specifically, the questions to be investigated were:

- (i) What did interns and mentors believe about the possibilities for interns in learning from experienced teachers?
- (ii) What did interns and mentors believe the interns had learned from mentors and from other teachers?
- (iii) How had they learned what they had?
- (iv) What factors had constrained or facilitated such learning?

A stratified random sample of twenty four interns and of twenty four mentors, representing four interns and four mentors from each of the six curriculum areas were interviewed in June, the final month of the PGCE course. Since the overall study concerned the institutionalising of a procedure it was important that all university curriculum tutors were kept fully informed of the progress of the research. To this end - and lest any tutor should regard the interviewing of interns and mentors in his or her curriculum area as an unnecessary intrusion - they were circulated with a list of all those who were to be interviewed together with explanations of how they had come to be selected, and of the purpose of the interviews.

Since one of the purposes of the interviews was to find out how interns and mentors construed teaching expertise and learning to teach and about teaching, it was most

important in the interviews for the researcher to refrain from introducing any concepts about that expertise and the learning process that could have influenced the respondents' thinking. Consciousness of this need to maintain an open stance led to her being slow to probe and unsure of where and how to draw boundaries of relevance. In the interviews with the mentors in particular this was something of a problem: they had a lot to say and the researcher, grateful to them not only for giving up some of their non-contact time to be interviewed, but also for agreeing to the interview being audio-taped, was reluctant to attempt to exercise any control over the interview in any way. The difficulties that ensued in analysing the data for the mentor interviews are attributable in part to the way in which they had been carried out.

The intern data set was the first to be analysed. Given the openness of the questions, the only basis for this analysis was the data itself, from which understandings had to be inductively generated.

The first step in analysing the data was a thorough reading of verbatim transcripts of five of the interviews in order to get an initial broad picture of what the interns were focusing on, their starting points, and the kinds of distinctions they were making. The second step was cautiously to look for generalisations - were the interns making similar distinctions and connections in their assertions? At this stage there were a number of false trails: for example, at one point it looked as if it would be productive to focus on the different kinds of knowledge that the interns talked about, and to explore what kind of knowledge had priority for them. However, the categories and the relationship between them generated for one intern did not reflect the distinctions and logic of the others. Difficulties also arose from the wide-ranging nature of the interviews: intern talk covered specific issues such as the way in which they had observed teachers and whether they had engaged in the procedure, as well as far broader concerns such as their notions of good teaching and their aspirations as beginning teachers. As the researcher tried to make sense of the interview data, the disadvantages of the lack of a clearly defined focus for the interviews became increasingly clear.

Eventually, it seemed possible to represent the thinking of each of the five interns with a collection of broad propositions related to the interview questions. These propositions were then tested and refined through a process of listening to the recordings of the remaining nineteen interviews.

The clearest things emerging from the data at this stage were the interns' concern primarily with how they could learn from experienced teachers, and distinctions they made among the different ways in which they learned from experienced teachers, namely through general informal conversations, observation, observation and follow up discussion, and being observed and given feedback on their own teaching.

The propositions that emerged from examination of all twenty four interviews offered some tentative insights with regard to a number of factors on which student teachers' access to experienced teachers' craft knowledge might depend.

#### ideas about alternative methods of learning

If one believes that experienced teachers' teaching can be understood through observation alone, or that experienced teachers can pass on all their valuable knowledge through giving advice to student teachers, then discussion of observed teaching is rendered superfluous.

#### conceptions of how the knowledge accessed could be used

If useful knowledge is seen by a student teacher as that which can be used immediately in one's own teaching rather than that which adds to one's understanding of teaching or is such that it can be stored for future use, then the student teacher's motivation to gain access to it is not high.

### conceptions of good teaching

The tendency to see teaching in 'holistic' terms and to think in terms of overall teaching styles leads easily to the belief that it is only possible to learn from the kind of teacher of whose style one approves.

### recognition of the complexity of teaching

Only when a student teacher recognises that 'rules of thumb' are of limited value, and that skilled teaching depends on taking account of multiple impinging conditions in each situation, can that student teacher appreciate what it is possible to learn from the teaching of experienced practitioners.

### own experience of teaching

The capacity and motivation of some student teachers to learn from observation and follow up discussion of the observed teaching appears to increase in so far as they can relate experienced teachers' observed actions or remembered actions to situations they have faced in their own teaching.

### suspension of one's perceptions

It is only in so far as student teachers can set aside their own ways of formulating the issues of concern to them and listen to the ways in which experienced teachers construe situations that they can learn from those teachers' craft knowledge.

### good relationships with experienced teachers

As student teachers are anxious to get on well with and be accepted by the teachers with whom they work, they tend not to press teachers to reveal their craft knowledge if the teachers themselves do not seem keen to do so.

When turning to the mentor interviews, the researcher first looked to see if the broad framework developed for the interns could also accommodate mentor talk. Within a short time it became clear that this framework was unhelpful in making sense of what the mentors had to say. The mentors talked of the teacher's wider role whereas the interns had focused exclusively on classroom teaching; and for the mentors the starting point in thinking about teachers' expertise and intern learning was the nature of the things to be learned rather than the channels through which they are learned. Mentor talk about intern learning was characterised by vagueness, and few connections were made between the whats and hows of learning, due in part perhaps to the researcher's failure to be more insistent and forceful during the interviews. An interesting aspect of the data was that although they were not explicitly asked to, virtually all of the mentors talked about the professional benefits they saw accruing to them through working with interns. By far the most striking feature of the mentor data set, however, was the distinctiveness of the concerns and logic of each individual mentor. It was, therefore, difficult to develop a framework that captured and did justice to the talk of all twenty four mentors. As a result, only a small number of propositions could be formulated and sustained as reflecting the thinking of mentors generally, as revealed in the interviews with them:

### recognition of one's own craft knowledge

Teachers' motivation to make their craft knowledge available to student teachers depends on their recognition of the expertise used in their daily teaching and the realisation that it is embedded in their teaching rather than available to them in term of prescriptive generalisations.

### recognition of the importance of long-term learning

Teachers are less likely to take time and trouble to make their craft knowledge available if they are overwhelmingly concerned with the student teachers' capacity to cope adequately with their immediate teaching responsibilities.

### recognition that understanding can lead to autonomy

Teachers are frequently sceptical of the merits of student teachers observing them or other teachers because they reject any idea of student teachers learning by imitation; they are more likely to be motivated to make their craft knowledge available through observation followed by discussion if they recognise that student teachers are better placed to develop their own autonomous practice through understanding how experienced teachers engage in their teaching.

In the process of reaching these conclusions, which especially in relation to mentors' thinking seemed somewhat limited, the researcher had learned a great deal more about possible barriers and facilitators to interns' access to practitioners' craft knowledge. However, because of the diverse nature of the things that mentors (and, to a lesser extent, interns) talked about, and the variety of their ideas even when talking of the same things, it was difficult to see how this further learning could be understood or represented as anything other than a large collection of individual perceptions and concerns, of questionable general significance. Furthermore, the analysis had already proved very time-consuming, and the researcher was conscious of the time constraints impinging on her work: a new cohort of interns would be arriving within a month, and there was a need to make new plans, reconsidering the procedure and enabling the interns to engage in it. While no doubt further analysis could have extracted much more of interest from the interview data, its likely helpfulness for the present investigation seemed at best uncertain, and so the decision was made to spend no more time on it.

## **Implications of the preliminary studies**

The findings from the experimental study in Scotland, the results of the questionnaire, and the insights from the interview data together led to modifications being made to plans for the forthcoming academic year and a fresh cohort of PGCE students. It was clearly necessary to create the conditions which would make it relatively easy for interns to engage in the suggested procedure, to persuade them to take the time to do it, and to help them to use in a productive way the expertise that they might get hold of. To that end, it seemed necessary to effect change in three areas.

First, the procedure should become an integral part of the curriculum programmes. In this way it would not have to compete with all the other demands on interns and mentors, as it would have its place in a programme jointly planned by curriculum tutors and mentors. Secondly, there was a good deal of evidence to suggest that the kind of questions that interns were being encouraged to ask following observation were more meaningful for them in the second half of the Internship year when they were engaged in learning how to evaluate their teaching; moreover, it was much more likely that in the second half of the year they would be in a position to appreciate the complexity of teaching. Thirdly, it seemed that interns were more likely to be motivated to gain access to teachers' craft knowledge in relation to an aspect of teaching that was of particular concern to them, rather than to teachers' craft knowledge in general; it was, therefore, important to take much more account of the agenda of the individual intern.

It was for these reasons that the researcher worked in the following year through curriculum tutors. The curriculum tutors in History, Maths and English were especially sympathetic to the changes to the PGCE course brought about by Internship, and it was not difficult to enlist their support in making this aspect of the scheme - the accessing of teachers' craft knowledge - part of the programmes that were jointly planned by

curriculum tutors and mentors. It was also agreed that the interns in these three areas should engage in the procedure as part of the self-evaluation task that was set and assessed by the university. The cooperation of the mentors in History, Maths and English was sought by the curriculum tutors with whom they worked. It was explained that the interns were being asked to carry out this procedure as part of both the self-evaluation process and assignments, and that the audio-taping of the conversations following observation would not only help the interns to reflect on what they had learned, but would also assist the researcher who would use the taped conversations as data.

In the lecture delivered by the researcher and a colleague at the beginning of the year greater emphasis was given to the use to which interns might put the accessed craft knowledge, using concrete and authentic examples from the questionnaire and interviews with interns. Following the lecture, the interns watched the training video, had follow up questions to discuss in seminar groups, and were given revised guidelines. Then as part of preparation for the self-evaluation assignment, interns in the three areas were given towards the end of their second term a much more elaborated explanation of the rationale and the procedures for getting access to teachers' craft knowledge, following an outline prepared by the researcher.

Having thus in the light of the preliminary studies been able to structure the context for the use of the suggested procedure in a way that seemed as optimal as was realistically possible, the researcher planned the research strategy for the following year.

# Chapter Four

## Research methodology

### Introduction

As discussed in the preceding chapter, the arrangements made for the third year of the study were substantially different. They were designed to answer the following research questions:

1. Is it possible, through generalised explanation and demonstration of models, to give interns an adequate understanding of the value of gaining access to the professional craft knowledge of experienced teachers, and an understanding of how this may effectively be done?
2. What are the problems for the interns of finding the opportunity to observe and interview teachers in the way suggested?
3. What are the difficulties encountered by interns in observing and interviewing teachers in the way suggested?
4. To what extent does the interns' use of the various suggested questions and behaviours correlate with the teachers' articulation of the craft knowledge they have used in the observed lesson?
5. Apart from articulating the craft knowledge used in the particular lesson, how else do teachers talk about their teaching, and how does that relate to the part the interns play in the post-lesson conversation?

6. What are the various ways in which interns react to, and make use of, the craft knowledge used in the observed lesson and articulated by the teachers?

The broad framework within which these individual research questions fall is concerned with the efficacy of an innovative procedure devised by the researcher with the purpose of enabling student teachers to access the craft knowledge of experienced teachers. The core question is a closed one: is the researcher's hypothesis valid? The posing of such a question necessitates adopting an action research strategy; thus, at a broad strategic level, this study may be seen as an action research study. Therefore, in the next part of this chapter the focus is on action research. Following a discussion of the different ways in which action research is characterised, the methodological implications of adopting action research, including the tensions inherent in the dual role of researcher and actor, are explored. Subsequent sections of the chapter will deal successively with: quantitative and qualitative traditions as they affect this study; the conversations and the adoption of a content analysis approach; the conduct of the interviews; and the analysis of the interview data.

### **The action research strategy**

The first use of the term 'action research' is attributed to the American social psychologist Kurt Lewin (1946, 1952), who believed that improvement in social conditions could best be effected by involving people in enquiries in their own lives. Lewin saw the process of such an enquiry as a self-reflective spiral of overlapping cycles of planning, action and the evaluation of the outcomes of action taken; thus the actors are in a position to plan for changes in their actions as a result of evaluation of previous actions. Corey (1949) is generally regarded as the most influential of the early exponents of action research in educational settings. The term has since become something of a slippery concept in educational research, a common phrase with diverse

meanings, and any attempt to provide a definition of action research that would satisfy its many and various advocates would prove a fruitless task. For Somekh (1995) such diversity is to be welcomed as 'the right and proper consequence of action research being grounded in the values of the individuals or group who are carrying it out' (p. 340). She explains:

...underpinning action research is a set of democratic values, which endow the action researcher to take control of the research process and make decisions about the full range of methodological issues on the basis of careful judgement and contextual knowledge; and ... since life's contexts are richly varied, this autonomy of the researchers precludes the development of 'schools' of action research in the sense of a group of adherents to a single, clearly-defined methodology. (ibid., p.340)

Hustler, Casey and Cuff (1986) also see virtue in this eclecticism arguing that it is for those interested in action research 'to make up their minds as to what it is' (p. 1). Their reluctance to give it a sharp definition together with their criticism of other forms of educational research as irrelevant, and in its written form, 'verbose' and 'abstract' (ps. 7-8), give the impression that they regard theorising and generalising as superfluous. There is an obvious danger in such a stance: fuzziness about the discipline of the research strategy could easily lead to diluted concern with rigour in the conduct of the research to the extent that the use of the word research would seem inappropriate. In their work, as in the writing of other champions of action research (see, for example, Elliot, 1991; Kemmis, 1988; Rudduck, 1987), there is the suggestion that the uniqueness of action research in integrating research and action, thereby bridging the gap between research and practice, makes it in principle superior to other strategies in the social sciences. It is interesting to note, for example that Somekh's five defining characteristics of action research are all described in terms of comparison with other forms of research. Action research is different because:

- it is carried out by those directly concerned with the social situation that is being researched
- the findings are fed directly into practice with the aim of bringing about change

- its orientation is highly pragmatic
- its momentum is towards collaboration
- it raises difficult and distinctive ethical problems

Carr and Kemmis (1986) are at one with other proponents of action research in seeing as two of its salient features concern with improvement and the fact that it is carried out by practitioners, but their conception of critical action research as a means by which teachers can achieve emancipation through taking more control of policy and their professional lives, sets them apart from those such as Nixon (1981) and Hustler, Cassidy and Cuff (1986) who have a very broad and less theoretically developed view of practitioner action research. The model of action research offered by Carr and Kemmis is both demanding and restrictive, and appears to be more an expression in an educational research context of their ideological position in relation to achieving participatory democracy, than a research strategy for approaching particular kinds of research problems.

More generally, proponents of action research tend to discuss it and to argue its merits primarily in ideological terms, with an emphasis on its value in empowering practitioners, extending their professionalism, and making research more relevant to practice. It is rather less common for action research to be viewed in a less inherently evaluative way, but more as a distinctive kind of research strategy appropriate for investigating certain kinds of research questions and for certain kinds of contexts. It is in this latter way that action research is viewed here, and it is on methodological rather than ideological grounds that it is adopted as an overall strategy. Brown and McIntyre (1985) offer a clear definition of action research in which they underline the importance of generating hypothetical solutions to the central research question that are both coherent and justifiable:

...the emphasis is on the researcher's role as an actor in a situation which he is endeavouring to **improve** (if that were not the case the word 'action' would not be used), where hypotheses are being tested about how to improve practice and those hypotheses are based on **theory** (if they were

not, the word 'research' would not be used) and the extent to which the problems and hypotheses are **generalizable** to other situations is explored.

In his discussion of the kind of research problem that lends itself to action research, McIntyre's (1986) emphasis on 'how to do things' finds resonance with the central question posed in this study:

Action research is a research strategy which is most effective when one is concerned to test ideas about how to do things, when the tasks to be done are fairly circumscribed, when one aspires to generalisable solutions, when one is as interested in understanding one's failures as in documenting one's successes, and when one is prepared to explain both one's successes and failures primarily in terms of what oneself as researcher has done or has failed to do. (Internal document, OUDES)

McIntyre's elaboration in the same document of criteria for judging whether or not action research is an appropriate strategy for a researcher's problem and context, can usefully be compared with this research project:

1. The problem being investigated should be such that:
  - the core research question is about how it is possible to achieve a desirable state of affairs that constitutes an improvement on the existing state
  - a practical solution seems conceivable
  - a possible solution to it can be offered by the researcher's actions
  - any such possible solution is derived from an explicit understanding of the problem
  - any hypothesised solution offered is both explicable and generalisable

This researcher's aspiration to solve the problem of how to help student teachers to gain access to the craft knowledge of experienced teachers seemed to meet the criteria precisely.

2. There are two facets to the problem: the development task of achieving the desirable outcome; and the research task of investigating how it is possible to achieve it.

In this study, the development task is to enable interns to access the craft knowledge of experienced teachers; the corresponding research task is that of establishing principles to guide the actions which need to be taken to enable such access to be achieved, and of understanding processes and factors which can influence such access.

3. The goal of the development and the criteria by which goal attainment can be claimed must be clear. There are also possible additional conditions to be satisfied about acceptable means for attaining the goal, or undesirable consequences to be avoided.

In this case one of the criteria, for example, in deciding whether or not interns access teachers' craft knowledge is to ask if in their conversations with interns teachers talk about their pedagogical actions in the observed lesson. One of the conditions to be met is that the desired conversations between interns and teachers can take place within existing time constraints, and a consequence to be avoided is that when student teachers do gain access to teachers' craft knowledge they put little value on it.

4. The role of the action researcher must be identified, and since the meaning of actions is dependent on who is taking them the validity of the research is affected by the credibility of the researcher in that role.

In this study, the researcher is acting in her usual role of Internship Field Officer based at OUDES.

5. It must be plausible to suggest that the researcher has the requisite power to solve the problem.

In relation to this particular case, this characteristic of action research will be explored below as part of a wider discussion about the researcher's role.

6. Since the focus of interest is in the consequences of the researcher's actions, the causal links between the actions of the researcher and the desired outcome should not be over extended.

In this case, the researcher is giving very specific guidance and making very specific arrangements in order to guide and persuade the student teachers to act in distinctive ways; and in so far as the student teachers do act in these desired ways, it would be implausible not to attribute this to the researcher's actions. Much of the research will be focused on the next links in the causal chain, between the student teachers' actions and *their* consequences, and these latter links will be examined in detail.

7. Any hypothetical solution to the problem must not be so context-dependent that it ceases to be explicable and generalisable.

Here, the researcher is acting within the specific context of the Oxford Internship Scheme, but the proposed solution to the problem is formulated in the widely generalisable terms of student teachers gaining access to the craft knowledge of experienced practitioners during their initial teacher education; and an important part of the research design is to understand any contextual factors which have an influence on the effectiveness of the proposed solution.

8. The researcher, occupying her usual role, must have access to any evidence needed.

As Field Officer working in the University and in schools, the researcher is in a position to gain access to informal evidence through, for example, conversations with interns, mentors and university tutors, attendance at meetings of mentors, and in the course of conducting seminars with groups of interns; and to formal evidence such as audio-taped conversations and questionnaire returns. Consideration needs to be given, however, to the possible impact on the desired effects of the actions taken of the collection and possession of the evidence. Equally, consideration of the effects of the researcher's action on the quality of the evidence gathered is necessary. Ways in which the researcher in this study attempted to deal with these problems are discussed later.

### **Actor/researcher**

The primary defining characteristic of action research is that the two roles of actor and researcher are located in a single person. There are obvious tensions inherent in this dual role: as actor, immersed in the messy world of practicalities, one usually has recourse to flexibility and intuition; as researcher, one is guided by the need for rigour. It is not surprising, therefore, that at times the actor/researcher in this study experienced bouts of discomfort and frustration, usually occasioned by the need to remember that in making any plans the research task as well as the development task had to be given due consideration.

In most respects it was possible in practice to fulfil the two parts of the role without them interfering with each other in terms of the disciplines to be adopted. Thus, for example, when the actor/researcher as actor was explaining to the interns about teachers' craft knowledge, the importance of gaining access to it and how that might be done, she was

able to use all her skills as a teacher without feeling at all constrained (except in terms of her goals) by her researcher role. Similarly, when interviewing teachers and student teachers for the purposes of the research she felt able to act unambiguously as a researcher without on these occasions needing to give attention to pursuing any of her practitioner goals. Sometimes, however, minor tensions arose: thus, for example, while persuading the interns to engage in the observation and follow up conversations as a valuable part of their course did not involve any conflict between action and research, persuading them to tape record their conversations in order to listen to them again at their leisure afterwards, and incidentally to provide the researcher with evidence, did lead to just a little ethical discomfort.

It is also suggested that the action researcher faces a problem of 'research neutrality' (see, for example, Powley and Evans, 1979). Setting aside the question of whether it is plausible for any researcher in the social sciences to be neutral in the sense of being 'value-free', Kelly (1985) argues that it is both 'unethical and condescending' (p. 144) to feign neutrality about issues one considers important. Certainly, in this study there was no attempt at pretence: the researcher's commitment to, and interest in, trying to find ways in which student teachers within the Internship scheme might gain access to the craft knowledge of experienced teachers were known to university tutors, teachers and interns. This did mean, however, that in collecting and analysing the data it was necessary to be sensitive to the fact that the respondents' perception of the researcher was unlikely to be different from their perception of her as Field Officer. There was, for example, the very real possibility that they would edit their accounts to fit in with what they believed a representative of the University and of the new scheme would want to hear. This and other potential problems are explored later as part of a discussion of the ways in which the interviews were conducted and analysed.

Earlier it was pointed out that one of the characteristics of good action research design is the plausibility of the researcher having the power to solve the problem. The status, power and influence of the researcher in the role of Field Officer were far from clear. To

begin with it was a new role that had been created in 1987, mainly as a way of retaining the researcher as a member of the Internship team; the Field Officer role was clearly a child of the revolution. There was, therefore, no history of the relationship of that role to other roles, and this at a time when, in accordance with the principles of Internship, the institutional relationship between the University and the schools and, as part of that, relationships between University curriculum tutors and subject specialists in schools acting as mentors - were changing dramatically. And, no one was in any doubt that the necessary changes would result in an increase in power for the schools and the teachers with a corresponding decrease for the University and its curriculum tutors. In some respects this led to the Field Officer being in a very powerful position. The newness of the role coupled with the lack of a detailed job description meant that the researcher was free to develop the role as she saw fit; at this time the Field Officer role can best be described as 'free-wheeling' which carried with it advantages and disadvantages. Untrammelled by the past, the Field Officer, unlike her University colleagues, did not have to renegotiate relationships with teachers. Furthermore, although she worked at the University, there was a tendency for teachers to see her more as a fellow teacher engaged in implementing Internship, rather than as a University tutor. In schools, then, her voice was an influential one: it was backed by the authority of the University but was free of association with University/school relationships of the past.

In the University her position was more ambiguous. As a relatively new, non-tenured tutor occupying a position that had not existed before Internship, she was outside of the established power base at OUDES. However, this was a time of institutional innovation when established ways of working - and established hierarchies - were being called into question. There were, in effect, two agenda in operation at the University. The official one involved curriculum tutors not only in developing and delivering curriculum programmes that embodied the principles of Internship and that were thus radically different from earlier programmes, but also in working together in order to achieve significant levels of commonality across different subject programmes. The reality was somewhat different: a number of curriculum tutors, waving the banner of academic

autonomy, produced programmes that were very similar to those they had used in the past and that bore little relation to programmes in other subject areas. Acting as General Tutors, however, each with responsibility for a group of interns attached to the same school but from different subject areas, the University tutors were content to deliver a programme that was common to all and had been developed centrally. However, whatever the rhetoric about commonality, the importance of the General Programme and of the school group of interns, most tutors, teachers and interns continued to identify themselves in terms of their subject specialism; and the ownership of interns and mentors in their subject felt by curriculum tutors is exemplified in their talk of 'my interns' or 'my mentors'. Such a situation presented the researcher with both problems and opportunities. On one hand, she had no interns or mentors that were 'hers'; on the other, unlike her University colleagues, as Field Officer she had access to all interns and mentors whatever their subject specialisms.<sup>1</sup> Above all, in the eyes of all concerned - teachers, interns and tutors - she was associated with Internship. It is, therefore, plausible to suggest that the researcher had both the power and the resources to provide a solution to the problem; it was also clear that the exercising of that power would not be straightforward.

## **Quantitative and qualitative research methods**

As outlined earlier, at the level of broad strategy the decision was made to adopt an action research mode, which is generally seen as belonging to those approaches which carry the label qualitative or interpretive since it is rarely possible, for example, to take action with pre-specified populations or random samples of them. However, whereas all of the research questions fall within a broad action research framework, some of the individual research questions are relatively closed while others are relatively open. For

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<sup>1</sup>For two terms during the third year of the study the researcher also worked in the English curriculum area, taking the place of a tutor on sabbatical leave.

example, the following question is a closed one formulated in terms of pre-established concepts:

To what extent does the interns' use of the various suggested questions and behaviours correlate with the teachers' articulation of the craft knowledge they have used in the lesson?

On the other hand, questions such as :

What are the problems for the interns of finding the opportunity to observe and interview teachers in the way suggested?

and,

What are the various ways in which interns react to, and make use of, the craft knowledge used in the observed lessons and articulated by the teachers?

are open questions and expressions of the researcher's wish to understand the perceptions of other actors rather than to analyse their thinking in terms of her own preconceived ideas. With such a combination of research questions this study stubbornly refuses to be labelled as qualitative or quantitative since it necessarily embraces both approaches to educational inquiry.

This is not to suggest that the issues separating the two approaches are insignificant. Anderson and Burns (1989) may or may not be correct in suggesting that the bitter schism between quantitative and qualitative approaches that surfaced in the 1970s probably owed more to the concern of members of the opposing camps with 'playing partisan politics than understanding the value inherent in each methodology' (p.47). Another view would be that qualitative researchers, in seeking to establish the legitimacy of their own approaches and in pointing out the unexamined assumptions which

quantitative researchers frequently tended to make, aggressively caricatured the latter as unthinking 'positivists'; and that they, for their part, were equally aggressive in rejecting the caricatures and in questioning 'soft' qualitative research, while slowly and painfully learning to accept some of the valid criticisms. However that may be, twenty years later the debate is calmer and more concerned with the relation between quantitative and qualitative research (e.g. Hammersley, 1992) than with their relative merits.

One widely accepted difference between the two broad approaches is that quantitative research tends to be dependent on many more assumptions than qualitative research, with the consequence that researchers need to be even more self-critical about the assumptions they make.

Researchers adopting such approaches must, in advance of the inquiry, not only be confident that the categories they impose upon the situation being studied are appropriate, but also that they will be able to develop clearly-defined units in order meaningfully to quantify the categories. And the application of imported units and categories is critically dependent on an assumption that the understandings on which the units and categories are based are shared by the researcher and those being studied. While such an approach opens up the possibility of using the descriptive apparatus of statistics to make generalisations about populations in addition to looking at correlations between variables and to making quantitative generalisations, it is dependent on claimed assumptions; and the history of educational research is littered with the false starts of researchers who having made such assumptions found them to be invalid. Such disappointments and frustrations help to explain the attraction and current dominance of qualitative research which to a large degree developed as a rejection of the assumptions necessary for quantitative research. Here, the emphasis tends to be on interpretations of the social world, the researcher's purpose to understand the perspectives of those being studied and the meaning they give to actions and events. Since, with such an approach the researcher makes fewer assumptions, claims made are correspondingly more tentative and modest.

Although there are clear differences in the two traditions, in any study, decisions have to be made at different points in the chronology of the research and at different structural levels. Working within a qualitative framework, for example, one may well want to ask some quantitative questions and describe some data in quantitative terms; or one may want to employ quantitative techniques to analyse qualitative data. Moving back and forth between the two traditions is neither new nor rare: in ethnographic studies claims about the relative frequency of events or actions, or the typicality of cases constitute quantitative claims. To eschew the use of an instrument or technique that is the most appropriate for answering a particular question in the name of methodological purity seems foolish. Hammersley (1986) in talking of classroom research - and his comments can be seen as applying to all educational research - points out that decision-making is complex, adding that 'the appropriate analogy is not a fork in the road but a maze in which one is faced at every point with alternative routes' (p. 47).

In this study, within the simple overall action research design, the consequences of the researcher's actions were studied in two main ways. First, the conversations which the student teachers engaged in with teachers after observing their lessons were audio-taped by the student teachers and later transcribed by the researcher. As will be explained it was decided that a quantitative approach was appropriate for the analysis of this conversational data. Second, the researcher subsequently interviewed student teachers and teachers involved in the conversations, in a semi-structured way; and for this interview data, a qualitative type of analysis seemed appropriate. Finally, for six pairs of teachers and student teachers, the qualitatively analysed data from their interviews and the quantitatively analysed data from their conversations are brought together in order to seek the fullest understanding possible of these six cases.

## **The conversations and their analysis**

All but eight of the fifty six interns in English, Maths and History claimed to have audio-taped at least one conversation with a teacher following observation. Four of the tapes, however, were blank, three were inaudible, two were of conversations that had been carried out by interns operating as a pair, and on two the conversation with the teacher followed observation of the intern's teaching. Other tapes simply failed to materialise as the interns, having listened to them for the purposes of their self-evaluation assignment, became embroiled in end of course activities and mislaid the cassettes. For research purposes the final total was forty eight taped conversations. These included, however, two conversations for each of the majority of the interns and since analysis of the conversations proved very time-consuming, in the end analysis was restricted to twenty eight taped conversations, each involving a different intern.

Taken on their own, data from the audio-taped conversations between interns and teachers do not enable one to answer all of the research questions. They do, however, provide evidence to address the following two questions:

To what extent does the interns' use of the various suggested questions and behaviours correlate with the teachers' articulation of the craft knowledge they have used in the observed lesson?

and,

Apart from articulating the craft knowledge used in the particular lesson, how else do teachers talk about their teaching, and how does that relate to the part the interns play in the post-lesson conversation?

In addition, in relation to the final part of the following research question:

Is it possible through generalised explanation and demonstration of models to give interns an adequate understanding of the value of gaining access to the professional craft knowledge of teachers, and an understanding of how this may be done?

the data, while not being able to provide a full answer, do give one a purchase on the question and will complement the findings from the interview data. Finally, evidence from the data can help to shed light on the third research question:

What are the difficulties encountered by interns in observing and interviewing teachers in the way suggested?

The researcher was now left to face up to the central question of how she was going to set about analysing the data. As already indicated, a quantitative method of analysis, a content analysis system, was chosen, and it is to the reasons for the choice of such a system that we now turn.

### **Reasons for choosing a content analysis system**

At a broad level, the choice lay between an approach that systematically analysed all the conversations with certain categories of a pre-determined nature, or an approach which took as its starting point a desire to understand the distinctive concerns, understandings and conversation of each intern and teacher, thus enabling one to relate the story of each pair of individuals. The research questions listed above are, for the most part, closed questions formulated in terms of pre-established concepts, and such questions are best addressed through applying the same categories and procedures to all the conversations. The system of analysis had to be one that made possible the operationalisation of the hypothesis on which the research was based. The researcher's interest lay in what was common to all the conversations and in the nature of variation among them; and even in relation to the nature of variation, her interest was more in trying to define the variables so that they could be meaningfully applied to all of the conversations rather than trying

to highlight the uniqueness of each. This concern with issues of commonality as opposed to uniqueness can be more fully described through exemplification. One of the conversations opens with intern talk about the enthusiastic manner in which the pupils in the observed lesson contributed to class discussion, and the teacher gives an account of the various strategies she uses to bring this about. The focus of interest here is not with the particular substance of those strategies, but with whether the intern and teacher are talking about teaching strategies, and with how far this talk resulted from the intern's use of the suggested questioning procedures.

As well as needing to explore the validity of the hypotheses about facilitating teachers' talk about their craft knowledge - and a content analysis system would meet such a need - the understandings as to the nature of experienced teachers' craft knowledge gleaned from the previous research project of Brown and McIntyre (1986) would provide the basis for the framework for analysis. Above all, the real test for any system of analysis is whether the claims one can make following the analysis correspond with what the research study is designed to find out and with the concepts explicitly imported by the researcher. In this study content analysis procedures enable one to examine the extent to which interns' and teachers' talk in the conversations following the observed lessons corresponds to the desired patterns, and how the characteristics of intern talk are correlated with the desired patterns of teacher talk; and this is what the researcher is primarily interested in finding out from these data.

It has not been possible to identify a literature that specifically looks at the strengths and weaknesses of content analysis, but the same kinds of issues apply as for systematic observation of classrooms for which there is an extensive literature, and it is to an examination of the arguments for and against the use of systematic analysis procedures that this chapter now turns.

## Arguments for and against the use of systematic analysis

Criticism is levelled at the use of systematic analysis procedures on several grounds. For Delamont and Hamilton the use of predetermined categories for analysis 'risks furnishing only a partial description' (Delamont and Hamilton, 1976, p.9), and can lead to distortions since analysis of data is always in terms of the concepts used in defining the categories. Such criticisms are echoed by Hargreaves (1972) and Walker and Adelman (1976). It has to be accepted that in using systematic analysis procedures one neglects some information and one presents a partial view, but other than leaving verbatim transcripts untouched by analysis, that is the case whether the procedures of analysis are systematic or not. As McIntyre and Macleod argue in a robust defence of systematic observation:

The issue is *not* (sic) one of whether information is neglected, but rather one of how it is determined what information will be neglected. The competent systematic observer can be confident that he has decided what information he wants to collect and that he has not neglected any of this information. (McIntyre and Macleod, 1978, p.113)

Systematic analysis is also criticised on the grounds that in its concern with objective reality, the subjective understandings, perspectives and aspirations of the participants are ignored. Hargreaves, for example, complains that 'no account is taken of the meanings which participants give to their actions' (quoted in McIntyre and Macleod, 1986, p.15). This is another example of criticism of a procedure for not providing what it does not claim to provide. Nonetheless, such a criticism would be damaging if the use of systematic analysis procedures precluded the use of other techniques for obtaining evidence about perceptions, attitudes and subjective understandings. In this present study, the data from the conversations between interns and teachers are complemented by the interviews with teachers and interns conducted with the aim of getting their view of what had happened and what they had experienced. The interview data are analysed in a way consistent with this purpose, using a grounded theory approach.

Research that uses systematic analysis procedures is also charged with being overly concerned with quantification. Stenhouse (1975) views the attempt to provide quantitative data to support generalisations at the expense of achieving an understanding of the unique as a central weakness in any such scheme. For him, counting is not fruitful dependent as it is on treating all participants as engaged in the same operation, with the result that all that is interesting, important and human is lost. Far from accepting this as a weakness of systematic analysis, McIntyre and Macleod see it as a strength, arguing forcefully that:

...most observers base many of their conclusions about what happens in classrooms on quantification. What differentiates systematic observers from others is that their quantifications are precise, while other observers' quantifications are necessarily vague; and whereas systematic observers' generalisations *are* (sic) on a statistical basis, the basis of other observers' generalizations is far from clear. (ibid., p.17)

Another criticism frequently made of systematic classroom observation is that the observer's description of classroom activities in terms of defined units of behaviour entails 'placing arbitrary (and little understood) boundaries on continuous phenomena' (Delamont and Hamilton, 1984). 'Reality frozen in this way,' they add, 'is not always easy to liberate from its static representation.' (ibid., p.30) One infers from these dark warnings that systematic analysis precludes one from capturing anything other than the analyst's bias. While it is valid to suggest that units of categorisation if arbitrarily chosen are not helpful, to assert that the drawing of any boundaries or imposition of analytic units is misleading, is in itself misleading. McIntyre and Macleod while conceding that this is the case for those aspects of behaviour that fall outside of the concerns of the predetermined categories, claim that in relation to those aspects of behaviour that are reflected in the predetermined categories:

...the systematic abstraction of these aspects of behaviour greatly facilitates the recognition of chains of inter-related events, and of recurrent patterns of such relationships. (McIntyre and Macleod, 1986, p.16)

The criticisms of systematic observation procedures are not without foundation, but as Hammersley points out, it is important to distinguish between defects in the practice and weaknesses inherent in the principles of systematic observation.

It is true that, systematic observers do not collect data on the physical and temporal context of the behaviour they are observing, nor do they observe the behaviour of the actors in other settings than the classroom, or collect the actors' own accounts of their behaviour. Reliance on a single source of data is as unwise in this case as it is in others. Equally, a concern with specifying and counting observable indicators *can* lead to only those things being researched which are amenable to this kind of analysis. However, these failing are not *necessary* (sic) features of systematic observation (Hammersley, 1986, p. 46).

As suggested earlier, the key characteristics of systematic observation procedures are also to be found in content analysis procedures. It is not surprising, therefore, to find content analysis subject to criticisms similar to those levelled at systematic observation: breaking up the text into units destroys meaning; the use of pre-determined categories leads to a partial view; and subjective understandings are ignored. In relation to the present study, while pleading guilty to the accusation that some aspects of the conversations will not be attended to, the researcher stoutly defends the use of content analysis not only because, in the words of Holsti:

... some form of content analysis is often necessary when, given theoretical components of the data themselves, the subject's own language is crucial to the research problem (Holsti, 1968, p. 603)

but also - and most importantly - it allows for the operationalisation of the study's central hypothesis.

## **The interviews**

The second form of data collection involved interviews of interns and teachers. The interviews were undertaken in an attempt to find out the interns' and teachers' experience of the procedure, and their understanding and perception of the place of the procedure in

relation to other ways of interns learning from experienced teachers. It was anticipated that the interviews would provide evidence to address the second and sixth research questions:

What are the problems for the interns of finding the opportunity to observe and interview teachers in the way suggested?

and,

What are the various ways in which interns react to, and make use of, the craft knowledge used in the observed lesson and articulated by the teachers?

In addition, the interview data, in complementing the evidence from the intern/teacher conversations, would enable one to answer the first and third research questions :

Is it possible, through generalised explanation and demonstration of models, to give interns an adequate understanding of the value of gaining access to the professional craft knowledge of experienced teachers, and an understanding of how this may effectively be done?

and,

What are the difficulties encountered by interns in observing and interviewing teachers in the way suggested?

Within each of the three curriculum areas, seven interns from among those who claimed to have engaged in the procedure on at least one occasion and audio-taped the conversation were randomly selected to be interviewed by the researcher. In addition, one of the two teachers with whom each of the twenty one interns had carried out the

suggested procedure - including audio-taping the conversation following the observed lesson - was interviewed, selection to large degree determined by teacher availability.<sup>2</sup>

The decision not to listen to the audio-taped conversations between interns and teachers before carrying out the interviews was for reasons of principle and pragmatism. The final few weeks of the PGCE year was a busy time for interns and tutors alike. The interns were pre-occupied with the tasks they had been set for the final period of joint weeks, and with securing their first teaching posts or, in the case of those who had already been appointed, in visiting their 'new' school. The researcher was teaching (as curriculum tutor), visiting schools (as Field Officer), and attempting to contact interns in order to arrange a time for interviews (as researcher). It would have been difficult, therefore, to find the time to listen to the audio-tapes before engaging in the interviews. Nonetheless, that time was not found was due to the perceived benefits of interviewing the interns with no knowledge of the conversations they had had with teachers: the chances of the interns (and indeed the researcher) focusing on making clear *their* understanding of what had happened in the conversation seemed greater if the researcher had not independently listened to the recording of it.

Since the PGCE term ended some six weeks before the school term, all the intern interviews were completed before the teacher interviews got under way. Again, the decision not to listen to the intern/teacher conversations or to the interviews with the interns before interviewing the teachers was a principled one that also made practical sense because of time constraints. The researcher was not interested in seeking confirmation of intern claims through interviews with the teachers; her interest was in hearing the teachers' commentary on the procedure and their perception of how student teachers learned from experienced teachers. Knowledge of an intern's experience of

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<sup>2</sup>Fourteen interns had each engaged in the procedure - including audio-taping the conversation - on two occasions with different teachers; three had each carried out the procedure twice with one teacher; four had carried it out on one occasion.

engaging in the procedure might be helpful in so far as it could be used to set the scene for any teacher who had difficulty in recalling the specific occasion on which they had been observed and interviewed by the intern; and knowledge of the positive experience claimed by individual interns could be useful in helping to make the teachers feel relaxed. For these purposes, the researcher considered that the brief notes she had made at the end of each of the intern interviews, together with the fact that the intern interviews were fresh in her mind as all forty two interviews took place within a four week period, meant that she was adequately prepared. Each interview lasted for 35 - 90 minutes and was audio-taped. The interviews with interns took place in the researcher's office at the University, while all the interviews with teachers took place in their respective schools.

At a broad level the agenda for the interviews was the researcher's; she was seeking responses to pre-determined questions generated by her in an attempt to answer some of the research questions. Such an approach, with the structure emanating from the interviewer rather than the interviewee suggests that they were of the type classified by Powney and Watts (1987) as respondent rather than informant interviews. However, as Powney and Watts readily admit, not all interviews fit tidily into one or other of the two categories (p. 23). The questions were pre-ordered in that the researcher was interested in seeking the views of the interns and teachers on issues of interest to her, but they were not 'sharply worded' in advance as would normally be the case in respondent interviews (ibid, p. 24), as the researcher wanted to have the flexibility to shape individual questions in response to what individual interviewees had to say. Since the interviews contained characteristics of both respondent and informant interviews, they are more appropriately described as semi-structured: the overall agenda was the researcher's, but within that broad framework she wanted to be as open as possible to the views of the interns and teachers being interviewed.

The potential problems attendant on interviewing as a means of collecting data - for example, interviewer bias and the desire of interviewees to please the interviewer - are

compounded in an action research study in which the actor is the research instrument used to collect evidence from other actors about the impact of his or her actions. In this study there was no escaping the fact that the researcher was an enthusiastic advocate of the procedure about which she was interviewing interns and teachers; thus the normal problem confronting interviewers of respondents telling them what it is assumed they want to hear was magnified. In addition, the researcher's position as University tutor and Internship Field Officer gave rise to the possibility that both interns and teachers would be more concerned in the interviews with how they presented themselves than with giving authentic accounts of their experience. This problem was addressed in two ways.

First, the interviews were arranged to take place at a time when interns and teachers were less likely to be concerned about the researcher's reaction to their accounts: thus the interns were interviewed after all their work had been assessed and they knew they had 'passed' the course, and interviews with the teachers took place after the interns had left and the Internship year was over.

Second, serious consideration was given to the stance that the researcher should adopt in the interview and the tone that she should try to establish. One possible way of mitigating the effects of a problem of this kind is for the researcher to adopt a very 'open approach' in interviews by asking open-ended questions focusing on the informants' individual perspectives. In interviews of this kind, the researcher concentrates on probing and prompting and refrains from making any substantive contribution to discussion. However, the researcher's attempts in the previous year to conduct interviews in this open informant style had led to many respondents - especially the teachers - simply not answering her questions. Moreover, the researcher was generally well known to both interns and teachers.

It was decided, therefore, to tackle the problem by being transparent both about the researcher's agenda and the potential problems for interviewees of giving honest answers to questions put by someone they knew was not disinterested. To this end the

researcher sought to make the interviews more like conversations to which she contributed, and she explicitly asked the interns and teachers to be honest in their responses. In addition, the interns and teachers were constantly assured that it was their experience and their perspective that were of interest to the researcher. The following two excerpts exemplify these efforts and aspirations of the researcher, and more generally reflect the nature of the interviews:

Interviewer: Fine, so what did you find difficult? Can you - I don't know if it's possible for you to be more specific about what was difficult - you said it was a bit artificial and so on as you tried to follow the procedure as it was laid down.

Intern: Yes, well, one of the problems I had at the time with it being quite soon after the lesson was that I had thought that it wasn't a very good lesson ...

Interviewer: Right.

Intern: Which made it - on reflection it probably wasn't as bad as it was in my mind at that time it being quite so soon after the lesson. At that time I thought it wasn't as good as it might have been and I know that that teacher can do some really good lessons, so I knew she hadn't performed anywhere near her best. At the end of it that was quite difficult and I knew at the time that the main reason that we were doing it was for the benefit of the people in the Department (OUDES) as well as the self-evaluation, so we were there and we were conducting this interview, but we weren't that interested in what we were talking about.

Interviewer: Right, I see. Yes, you were sort of going through the hoops.

Intern: Yes.

Interviewer: So did anything useful come out of it? (Pause) Do be honest. If the answer is no, do answer no.

Intern: Not from the discussion. I definitely learned what I learned from observing the lesson rather than discussing it afterwards.

Interviewer: Go on?

Intern: In fact, in general I found that after I'd been teaching during the S weeks that it was very useful to observe lessons afterwards, particularly with a focus, and think - you know, I don't do that, why don't I do that? And the discussion element wasn't needed.

Interviewer: Why not - absolute honesty here, good. What about with the second teacher, was that the same sort of thing? What happened with that one?

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Interviewer: O.K. what about Andrew? (the observed teacher) You said he was relaxed...

Intern: Yes, he was, once he got going. When you listen to it (the audio-tape of the intern/teacher conversation) I think you'll find, yeah, he just makes my life easy. As I say, he flatters my questions by giving very open answers.

- Interviewer: Were your questions genuine? By that I mean did you actually want to know the answers to them or, 'cos after all you'd been encouraged by your curriculum tutor to do this?
- Intern: Yeah, I think - no I think actually there was one particular point in the session when I actually did want to know why he had chosen that approach, because I know I would have chosen another approach.

Most of the problems experienced by the researcher in conducting the interviews stemmed from the tension inherent in seeking views on specific issues while wanting respondents to be open and expansive, a tension aggravated at times by the researcher's concern as actor/researcher not to be seen as critical of, or disappointed with, their accounts. One of the ways in which this tension presents itself is as a dilemma for the interviewer who, in encouraging or discouraging elaboration on the part of the respondent, has to make judgements about what is 'relevant' and what 'irrelevant'. In these interviews the researcher was wary of attempting to discipline respondents lest she be seen as critical which in turn might lead the respondent either to give a sanitised version of her experience, or simply to become less forthcoming. Instead the strategy employed by the researcher was to wait until respondents had completed their account of a particular incident and then to bring them back to her agenda.

- Teacher And also to make me think why I was doing these things because, as I say, I did it automatically, and they're the things that we take for granted as a practising teacher. I was amazed - going off the track here - when I took a ski trip abroad and my boyfriend came with me, and he's never actually seen me handle children before and he saw me for the first time with a group of kids and he thought this was different, he'd never seen this side of me, he'd never seen me working before. That's just something that I took for granted and he tried - the boys' dormitory was a bit high the first night and he'd gone in to try to handle it the best way he could and he couldn't. And I went in and handled it and they went to sleep and he said, 'I couldn't do it. It was amazing.' And that really stuck in my mind that these were skills that you just do take for granted, and unless someone actually asks you, 'Well, what did you do? Explain why you didn't go in there and smash them all to pieces. Why did you just go and joke them into bed? - I don't know really.'
- Interviewer: You mentioned that you automatically talk to people after they've observed you and that you want to explain why you've done things and so on. And you also said that this was a much more formal set up, where time was actually set aside and presumably it was a longer conversation than

you'd normally have after a lesson. So, how was it different, in what ways?

Interviewees decide 'which layer of truth they will make accessible to the interviewer' (Powney and Watts, op. cit. p. 45) , and the researcher, working on the assumption that the more relaxed and less tense the interns and teachers felt the more likely they were to reveal multiple layers of truth, tried to make it clear that she empathised with and appreciated the respondents' concerns and views, whatever they were. As well as taking care to listen and to wait to get back 'on course' only when the flow of the conversation allowed, she frequently offered explicit reassurance to achieve this end:

Intern: I met the mentor at School X and was just talking to her for half an hour and I was quite inspired and I would really have liked to have had a mentor like that. I think that would make a terrific difference.

Interviewer: Right.

Intern: I mean, it may be very unfair to talk about Sally (her mentor) like this, because I've never...

Interviewer: You're talking about your mentor, that's all. You're not being - you're talking about your mentor, you're being honest.

Intern: I mean, maybe there are things that I could have done. I could have challenged her and been more specific, but I honestly felt she could have helped a bit more. I didn't tell her that because I think that would have been very rude.

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Teacher : So the starting point for people like Selina (intern) is that she knows that in order for good learning and teaching to take place something else must be going in. That's the starting point for Selina's observation, she's already there, and so the kind of questions that she's asking already from that experience show that she knows that there's an awful lot more to it. I'm beginning to ramble.

Interviewer: No you're not. No, you're not rambling at all, Karen, I would stop you if you were.

For interns and teachers alike the interview opened with straightforward questions about the observed lesson and follow up conversation - including, for example, the making of arrangements - as it was assumed that inviting them to talk in descriptive terms about their experience made it more likely that subsequent responses would be rooted in what had happened. This was especially important in the case of the interns as there was the possibility of their talking about what they had been asked to do rather than what they

actually did. In the interviews with the teachers - who were less likely to remember the occasion in detail - these opening questions and responses gave them time in which to 'warm up'; to freshen their memory and to become confident and relaxed. The second sequence of questions focused on the place of the procedure in relation to other ways of interns learning from experienced teachers. With the interns emphasis was put on their perception of the value of what they claimed to have learned from the procedure and they were asked to contrast it with other ways of learning from teachers. The teachers were asked about the kind of knowledge and understanding of their teaching that had been revealed through engaging in the procedure, how they saw it in relation to the rest of their knowledge and expertise and whether it was useful knowledge for beginning teachers to get hold of. The final sequence of questions for the teachers focused on the practicability of the procedure.

In the intern interviews, the researcher was also interested in testing interpretations gleaned from the questionnaire and interviews carried out as part of the preliminary studies. Some interns introduced these topics in their talk of other matters, but in the case of those who did not, the understandings were tested at the end of the interview to ensure that they did not affect the interns' responses to other questions. In keeping with the conversational style of the interviews, the standardised statements were introduced in a fairly informal way:

- Interviewer: O.K. Is there anything else you want to say? Anything to add to what you've said so far? The reason I'm asking that is because I am going to ask you some other questions and I don't want them to influence this part.
- Intern: I don't think so.
- Interviewer: Sure?
- Intern: Yes.
- Interviewer: Right. I'm going to make a few statements, and I want you to disagree, agree or say, 'Well, I agree a bit, disagree a bit, I think they're ridiculous statements'. O.K? Right, first of all - you've already touched on this, someone like yourself beginning teaching can learn mainly or largely from a style similar to one's own. You can't learn from a style that's not similar to your own.
- Intern: No, I don't think that's true.

The validity of teachers' and students' accounts of the conversations and of related events could be checked against each other and against the audiotapes of the conversations; and in the six case studies reported in Chapter Nine, questions about the similarity and mutual consistency of the information from these different sources will be examined. However, the most important information from the interviews concerned teachers' and students' perceptions, understandings, reactions and beliefs in relation to their experiences of the procedure, and ultimately there is no way of knowing how valid the information they provided about these was. The researcher's access to other information about what happened was likely, it was thought, to encourage honest and authentic expressions of views; and as has been explained, the rooting of the interviews in the recalled experiences of the lessons and conversations, together with other aspects of the interviewing, were designed further to encourage this.

The questions about validity which can be asked are those about whether respondents themselves are satisfied with the ways in which they have expressed their views and with the interviewer's interpretations of what they have said. Various approaches to achieving such 'respondent validation' are possible. In the context within which these interviews were conducted, it was thought to be neither practicable nor likely to be acceptable to the teachers and students to ask them at a later date to comment on either transcripts of their interviews or abstracted accounts by the researcher of what they had said. The emphasis was therefore put on respondent validation *during* the interviews, with the researcher every so often summarising what she understood a respondent to have said and asking the respondent to confirm, to correct or to add to that interpretation.

Interviewer: O.K., so you're saying a lot of things here, let's see - observation, observation and discussion, planned teaching with a running commentary going, taking your plans to the normal class teacher ....

Intern: And teachers observing me as well.

Interviewer: Right, and teachers observing you as well. And you said that the joint teaching when you worked together was really good especially for learning about classroom management - is that right?

## Analysis of interview data

The ensuing discussion of the procedures developed to analyse the data gathered through the semi-structured interviews with interns and with teachers is organised under three themes: the criteria governing the analysis; stages of the analysis; and reflexivity - how the researcher took account of the fact that she was the main research instrument. The criteria and, for the most part, the stages in the process, are applicable to both sets of interview data. However, as the intern interviews were the first to be analysed, exemplification of the procedures comes from this set.

To begin with the requirements to be satisfied in analysing the data were identified.

These were as follows:

- account had to be taken of *all* the data: since concern was with the interns' way of making sense of their experiences, no data - with the exception of social small talk - could be deemed irrelevant and be discarded;
- when making a distinction, there was the obligation to look at every relevant case, and to ask if the terms in which the distinction was being made applied clearly to all these cases;
- generalisations or broad categories had genuinely to reflect the interns' thinking;
- all propositions had to be supported by evidence; and a thorough search had to be made for evidence which would falsify any proposition;
- categories had to be clearly defined, mutually exclusive and theoretically interesting.

It is useful to see the procedures for analysis in terms of a sequence of stages or steps. For Taylor and Bogdan (1984) analysis of qualitative data comprises three stages or phases: the discovery phase - reading the data and looking for themes; next, the coding phase when data is sorted into categories; and third, the discounting phase in which the developing concepts are checked for bias and contamination. Miles and Huberman

(1994) list a sequence of thirteen steps within their definition of analysis as consisting of three flows of activity which are concurrent: data reduction, data display, and conclusion drawing/verification. In this study the procedures adopted to analyse the interview data involved a sequence of ten stages.

### **Stage 1: Preparation**

Verbatim transcripts were made of the audio-taped conversations.<sup>3</sup> At any point during the period of analysis when the researcher felt that the data were unclear or ambiguous, she listened to the audio-tape of the relevant interview. This was especially helpful with regard to the relationship between the questions and the responses.

### **Stage 2: Familiarisation or 'getting in the mood'**

This entailed a straightforward reading of all twenty one transcripts partly to get an initial idea of the size of the task, but mainly as a way of getting attuned to the tone of the interviews, including the relationship between the questions and responses. There was also the opportunity for some initial brain storming; during the process of reading a note was made on the transcript of anything that caught the researcher's interest. For example, the following initial notes were made on the transcript of the interview with Intern K :

all over the place/lengthy talk about the class and lesson observed/enthusiastic belief in osmosis

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<sup>3</sup> See Appendix 4 for a copy of the transcript of one of the intern interviews, and for one of the teacher interviews.

### **Stage 3: Homing in**

With the intention of developing an initial framework for analysis by a close scrutiny of six transcripts, two of the seven transcripts from each of the three curriculum groups were randomly selected for detailed examination.

### **Stage 4: Clarification and elaboration of research questions and other issues**

The six transcripts were examined in relation to the predetermined research questions, and these questions were elaborated through the identification of different ways in which the transcripts indicated they might be answered. Then the question of what other issues that could not satisfactorily be encompassed by the research questions were discussed by the respondents in these transcripts; and a tentative framework for dealing comprehensively with the data was generated from the research questions and the newly defined complementary issues.

### **Stage 5: Allocating data**

Intern talk in each of the six transcripts was marked up according to the tentative framework. From the transcripts information was abstracted and coded under the heading of the relevant research question or newly defined issue. Although this was very time-consuming, the process of 'copying out' what the interns had said was useful in getting to know the data well.

### **Stage 6: Distillation of data**

Following a suggestion by Miles and Huberman (op. cit., pp. 239-244) a simple matrix was drawn up that encapsulated the data from the six transcripts. This enabled the researcher to see at a glance what data was where; in this way it acted as a 'guide' to the data copied from the transcripts.

## **Stage 7: First attempt at generating themes**

Within each research question the researcher cautiously set about generating themes.

For example, there appeared to be five facets to the first research question

- Is it possible, through generalised explanation and demonstration of models, to give student teachers an adequate understanding of the value of gaining access to the professional craft knowledge of experienced teachers, and an understanding of how this may effectively be done?

The facets were:

- intern conceptions of teachers' professional craft knowledge
- their reasons for engaging in the procedure
- their notion of what they were being asked to do
- their repertoire of ways of learning from experienced teachers
- ways in which they related the suggested procedure to other possible ways of learning from teachers

## **Stage 8: Testing and redefining the themes generated from the six transcripts**

This entailed reading and marking the remaining transcripts in relation to the provisional themes, and redefining themes to make them adequate to report the data by going back and forth between the individual transcript under scrutiny at any particular time and all the transcripts already marked up. In principle, the broad new framework, in so far as it went beyond the original research questions, was also open for redefinition at this stage, but in practice this was not necessary.

## **Stage 9: Storing the data**

Allocating the data from all the transcripts to the developed categories.

## **Stage 10: Refining the categories**

Since the themes were internally diverse, sub-themes were defined and redefined through a process of studying the data stored in its respective boxes.

These were the stages in the procedure adopted to analyse the interview data, but it would be misleading to suggest that the researcher moved swiftly and serenely through the sequence outlined above. Inspiration was important: as Anderson and Burns (1989) suggest, 'If the emergence of patterns and themes in the data sounds somewhat mysterious, the reason is that it is mysterious' (p. 203); things suddenly made sense. But this happened intermittently during a long process of worrying away at things, examining and re-examining broad categories and specific themes in relation to the idiosyncratic ways in which respondents recounted their specific experiences and expressed their distinctive concerns.

Notwithstanding the assertion that with qualitative data 'all analysis is a limited view chosen for a purpose' (Bliss, Monk & Ogborn, 1983 quoted by Powney and Watt, *op. cit.*, p. 161) it was important to monitor the process of analysis in relation to any implicit preconceptions that the researcher might be imposing. In this study, some broad categories were established in advance of the data in the sense that there was an agenda for the interviews and that there were research questions, but the intention was that, within that broad and explicit framework, the shape, structure and texture of the final account should be determined by what the respondents had to say. There remained, however, the danger of unconsciously forcing data to fit one's preconceived categories; and to counter this danger, there was a need not only to identify weaknesses in the fit

between data and categories, but also to use these instances as a basis for identifying one's hidden preconceptions.

The need for such reflexivity in analysing the data was of course enhanced by the fact that the researcher had played a major part in shaping that data. It was especially important to be alert to the danger of distorting what respondents were saying by the imposition at the analysis stage of preconceptions which the researcher might have already imposed while conducting the interviews. As discussed earlier, the questions asked were more direct and the researcher had more to say than is often the case in semi-structured interviews; and in interpreting during the course of interviews what respondents are saying, as a basis for probing or in summarising for purposes of respondent validation, it is clearly much more difficult to guard against importing preconceptions than it is when one can take time to examine carefully what has been said. It is hoped that awareness of these problems, combined with very careful examination and re-examination of the interpretations she had made and was making of respondents' talk, enabled the researcher to avoid the imposition of any seriously fallacious preconceptions in her interpretation of the interviews. Ultimately, however, especially in research of this kind where it is not possible to conduct further interviews to re-examine interpretations made of what has been said in initial interviews, the researcher must put trust in her shared commonsense understandings with the respondents as a basis for enabling her to make sense of what they said.

# Chapter Five

## The content analysis system

### Introduction

In Chapter Four the arguments for and against the use of content analysis were considered. It was also explained that the decision to use content analysis in relation to the data from the audio-taped conversations between interns and teachers following intern observation of teaching was based primarily on an operationalisation of the research questions.

The focus of this chapter is the development of the content analysis system<sup>1</sup>. The first section of the chapter is a description of the search for an appropriate unit of analysis, and an explanation of the decision to adopt the concept of a move from Bellack et al (1966). The Chapter then concentrates on the starting points for the analytic framework, with a discussion first of the pre-determined categories provided by the research hypothesis, and then of the supplementary categories grounded in the data.

A detailed account of the development of the system through a process of revision and refinement follows.<sup>2</sup> The next section focuses on the reliability studies: accounts are given of the first reliability study, the relatively minor modifications made to the system consequent on the study, and the second reliability study. The Chapter closes with a discussion of the questions to which one can seek answers through the content analysis system.

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<sup>1</sup> See Appendix 5 for a copy of the finalised content analysis system.

<sup>2</sup> See Appendix 6 for a transcript of an intern/teacher conversation, and an excerpt from the coding of this conversation.

## Unit of analysis

In any research design using content analysis, the central problem is the establishment of appropriate units and categories: the analyst must decide on the size of the units to be coded, and select and define the categories into which content units are to be classified. The degree to which content analysis is dependent on units and categories cannot be overstated:

Content analysis stands or falls by its categories. Particular studies have been productive to the extent that the categories were clearly formulated and well adapted to the problem and to the content. (Berelson, quoted in Holsti, 1968, p.644)

The task facing the researcher, then, was to find a unit of analysis appropriate to her purpose and to the data. 'Utterance' presented itself as a possible unit of analysis. Its appeal is in its simplicity - after all, it is not difficult to decide when an utterance begins and when it ends - but listening to some of the audio-tapes of the conversations forced the researcher to accept that it was too big a unit of analysis. The interest of Bellack et al (1966) 'in finding out which participant - teacher or student - speaks about what, how much, when, under what conditions, and with what effect' found echoes in the author's focus of concern in relation to these data from the conversations between interns and teachers. It was, therefore, from their research into 'The language of the classroom' (1966), that the notion of a move was adopted as the unit of analysis.

Taking their concept of meaning from Wittgenstein's view that 'the meaning of a word is its use in the language' (Wittgenstein, 1958, p. 20), Bellack and his team of researchers set out to identify 'the distinctive functions language actually serves in the verbal interplay between students and teachers and hence what meanings are conveyed through the words they use.' (Bellack et al, 1966, p. 2). They found it helpful to distinguish the pedagogical significance of what the speaker was saying from the content of the communication, and in attempting to operationalise these two dimensions of meaning turned again to Wittgenstein.

His notion of verbal games to explain the way in which linguistic activities assume different forms and structures according to the functions they serve in different contexts suggested a framework of analysis for their work on classroom verbal behaviour, and they set about attempting to identify 'the various types of verbal moves teachers and students make in playing the game of teaching and the rules they implicitly follow in making these moves' (ibid., p.4). In their system the verbal behaviour of students and teachers is coded into one of four moves, structuring, soliciting, responding and reacting.

Researchers in the relatively new discipline of discourse analysis drew on the work of Bellack et al., borrowing from them both the concept of a hierarchical structure for lessons and the move as a unit of analysis. Sinclair and Coulthard (1975) in their work on the functional and structural analysis of discourse in classrooms, developed a hierarchy of five units - lesson, transaction, exchange, move and act, while Stubbs (1976), building on their work, developed a more elaborate system of units. The latter's work, (as with that of Sinclair and Coulthard), while concerned with systematic analysis of discourse, is of greater interest to those with linguistic rather than substantive purposes, and will not, therefore, be further explored in this chapter.

The adoption of Bellack's conception of the move as an appropriate unit of analysis for the present study could be questioned on the grounds that whereas Bellack's concern is with the language of the classroom, the author's interest is in conversations about observed teaching. It is, therefore, worth examining the features common to both classroom discourse and the conversations between the interns and teachers. First, the kind of semi-structured interviews the interns were asked to engage in share with the verbal interplay of students and teacher in the classroom, the characteristics of a relatively formalised kind of conversation as evinced by the fact that in both contexts nearly all of the questions come from one role, and nearly all of the responses from the other. Secondly, the move as a unit of analysis enables one to look at the relationship between successive moves and to seek answers to such pertinent questions as: what questions do the interns ask?; what responses do they get?; are the responses systematically related to the characteristics of the

questions?; and, what are the reactions to the responses? In other words, using Bellack's framework of moves enables the researcher to achieve the purpose of looking at these data in terms of the advice given to the interns and the hoped for outcomes. And, on a practical level, the framework seemed to offer easily identified, reliable units to describe the verbal manoeuvres of the two speakers.

After examining a number of the transcripts of the conversations between interns and teachers, the decision was made to add a fifth move to the four in Bellack's system. In his framework, a clear distinction is made between, on the one hand, structuring and soliciting moves which are deemed initiating and, on the other, responding and reacting moves which are labelled reflexive. In applying this framework to the conversations between interns and teachers, a problem emerged. The interns had been advised to avoid 'moving on to another point after a brief response rather than helping the teacher to talk about the ordinary, everyday things that s/he usually takes for granted', and probing of the teacher's response was difficult to categorise. The following extract taken from one of the transcripts illustrates the problem:

- Intern: When you got them into groups, did you intend to get round all the groups?  
Teacher: Yes, I did. I think I got round all the groups, but I stayed much longer with some. In fact, the four girls in front of you, they work better without me. I think I got round to all the groups - but I didn't get round to the other two girls, I didn't get round to them.  
Intern: So you would deliberately start at one point and ...

'So you would deliberately start at one point' is both a reaction and a solicitation and as such is both reflexive and initiating. To accommodate probes of this kind, a fifth move reacting/soliciting - was added to the framework which is set out below:

**structuring moves** launch discussion in particular directions; they implicitly direct the conversation. They do not elicit a response, and are not in themselves direct responses to preceding move(s). Thus, the giving of information which is not in response to a preceding move constitutes a structuring move.

**soliciting moves** are intended to elicit a response, and are clearly directive in intent and function.

**responding moves:** a responding move occurs only in relation to a soliciting move and is directly elicited by a solicitation.

**reacting moves:** a reacting move is occasioned by a preceding move(s), but is not directly elicited by it. A reacting move may elaborate, clarify, expand, synthesise, rate or modify; it rates what was said in the move that occasioned it or modifies another move.

**reacting/soliciting moves** are reacting moves containing either explicit or implicit probing.

## **Dimensions and categories**

With the move established as the unit of analysis, the researcher could turn to the problem of categories. Preliminary listening to the audio-tapes had suggested that the conversations were rich and complex; for the researcher to get as full an understanding as possible of the conversations it was necessary, therefore, to develop a coding system comprising several different facets or dimensions on each of which several categories would be distinguished, with each move being analysed in relation to each of the dimensions.

The validity of any coding system is dependent on the derivation of that system's pre-determined categories; and any analyst needs to be able to demonstrate that the pre-determined categories, far from being fancifully plucked from the air, are operationalisations of the research problem. The starting point, then, for the selection and definition of categories was the central hypothesis of the research study: if intern does 'x', teacher is more likely to do 'y', with 'x' elaborated in the advice that had been given to

interns about observation of teachers with follow-up discussion, and 'y' emanating from the work of Brown et al. (1988), which provides an understanding of what the major components of teachers' professional craft knowledge might be like.

From the trialling of the procedures in Scotland - by McAlpine et al (1988) - it was possible to draw three tentative conclusions:

- (a) when student teachers followed the suggested procedures, teachers responded in the desired way, that is, they offered explanations of their practice relating to the observed lesson;
  - (b) teachers might respond in the desired way irrespective of whether student teachers followed the suggested procedures;
- and,
- (c) responding in the desired way in spite of inappropriate questions from the student teachers tended to be characteristic of individual teachers.

However, apart from it being a totally different context, these conclusions were based on a very holistic kind of categorisation of questions and responses in terms of their appropriateness or inappropriateness. In order to explore either the significance of each of the different pieces of advice given to the interns in Oxford or indeed the precise nature of the consequences of following or not following such guidance, a much more analytic categorisation of both intern question and teacher response was necessary. Furthermore, such analytic categorisation would offer far greater objectivity of the conclusions and therefore confidence in them. These more analytic procedures clearly should relate in the first instance to the precise nature of the guidance offered and to the research hypothesis. Interns had been advised to ask open questions, to probe and to focus their attention on the specific lesson observed. In addition, they had been encouraged to ask questions about the teacher's successes or achievements in the lesson; the actions taken to bring about any such achievements; and the reasons for the actions taken. From this advice came the broad categories - or dimensions - of openness, nature of reaction, level of specificity,

positiveness and nature of solicitation. From Brown et al.(1988) came the three content dimensions of pedagogical actions, goals, and factors of which account is taken, as well as the categories within the latter two. The pre-determined categories within the goals dimension were:

- (a) long term effect on pupils
- (b) short term progress
- (c) normal desirable state of pupil or of pupil activity

and those within the dimension relating to factors taken account of were:

- (a) pupils
  - 1. individual pupil
  - 2. identified sub-group
  - 3. class
  - 4. year/age group
- (b) time
  - 1. amount of time for, or within, lesson
  - 2. time of week, term, year
- (c) resources
- (d) content
- (e) teacher state

In addition to the central hypothesis - the main structuring device in the content analysis system - the researcher was also interested in being able to describe the main patterns of what took place between interns and teachers in the conversations, and so be in a position to answer the fifth of the six research questions:

Apart from articulating the craft knowledge used in the particular lesson, how else do teachers talk about their teaching, and how does that relate to the part the interns play in the post-lesson conversation?

Since the focus of attention goes beyond the hypothesis, the researcher was left with the problem of how to conceptualise for coding those things that were not formally specified in the research questions. There being no prior theoretical concepts on which any further categories could be based, these categories would necessarily be grounded in the data. This, however, should not be taken to imply that these categories simply popped out of the data; their development depended on the researcher bringing her own meaning-making competence to the transcripts. The process of developing those categories which were not pre-determined is illustrated in relation to the concept of 'use made of past experience'.

While the central hypothesis concerns both interns and teachers focusing on the specific observed lesson, it became apparent that teachers were inclined to refer to other lessons when talking about the observed lesson. In the transcripts, such statements as:

... I used to get genuinely irate when I explained things once and they didn't understand. Then I realised that I needed to get them to write things down...

and,

...It's always important to start off this topic with practical experience. When I taught it first, I used to kick off with definitions written up on the board, but that wasn't half as effective...

seemed to indicate a potentially interesting and valuable way in which teachers were elaborating on the craft knowledge used in the observed lesson. After reading a number of transcripts, the researcher therefore decided to introduce the dimension of 'use made of past experience' to take account of statements of this kind. Further reading of transcripts led to a number of distinctions being made among different ways of using past experience.

These distinctions (specified in detail in the section below 'from conceptualisation to operationalisation'), do not come from any theory of teaching or teacher thinking; they are commonsense distinctions carrying no theoretical weight, and the modest claim one can

make for them is that they represent - albeit somewhat crudely - the use interns and teachers made of past experience in the conversations. The same process applies to two further dimensions, namely, 'mental activities in relation to teaching' and 'how the teacher knows or understands'. These are aspects of the conversations that the researcher recognised as related to craft knowledge and as potentially useful to interns, but they had not been formally specified in the research questions, nor were the distinctions drawn based on theory; again, the categories were born of common sense logic.

Coding of this kind - for both the pre-determined categories and those emerging from the data - rests on an assumption of 'phenomenological validity' (McIntyre, 1980). When, for example, it is asserted that in the following extract from one of the conversations the teacher is evaluating her work, such an assertion is dependent on the researcher's interpretation of the words of the teacher:

I'd hoped they would have grasped more about the overlapping, but it's quite a lot to grasp going straight from pie charts and things when they're just describing one kind of information.' (coded as negatively evaluated outcome)

For the analysis to be phenomenologically valid, the understandings on which the categorisations are based must be shared by, on the one hand, the researcher, and on the other, the interns and teachers whose discourse is being analysed. In this study, the researcher, a former teacher whose present role involves working with both teachers and interns, would argue that she is sufficiently a member of the culture of the interns and teachers to validly interpret what is said in the conversations; at the very least she would claim to have as good a chance as the two interlocutors themselves of understanding what each said to the other.

## **Content analysis: from conceptualisation to operationalisation**

The process of development through which a final system was arrived at was both lengthy and detailed. As Holsti points out:

...the analyst is often faced with the task of constructing appropriate categories by trial -and-error methods. This process usually consists of moving back and forth from theory to data, testing the usefulness of tentative categories, and then modifying them in light of the data. (1968, p.646)

Since the research questions went beyond the central hypothesis, as well as extensively reading the transcripts to test and elaborate the a priori definitions in order that they could be made sensitive to the data without violating or distorting the initial concepts, the researcher was also refining those categories developed in response to the data. The process was further complicated by the need to develop categories that would encompass the ways of thinking of both interns and teachers, an especially challenging task in the light of the evidence from, among others, Calderhead (1983), Housner and Griffey (1985), and Berliner (1988), that suggests that they are likely to have different ways of thinking about teaching and use different language when talking about it.

In developing the categories, then, the researcher was attempting to make distinctions that were practically viable, preserved the clarity of the concepts, and were potentially useful in relation to the general concern of getting access to professional craft knowledge. This was no easy task, and issues of operationalisation abounded. Those of significance are now discussed within the context of the presentation of each of the dimensions of the final system.

### **Specificity**

Initially, it was seen as important to distinguish talking about the observed lesson from not talking about the observed lesson. In the face of the data, this seemed too crude a

measure, and in an attempt to achieve more subtle distinctions, the researcher considered the notion of degrees of specificity. This in turn was dismissed as in practice it proved unhelpful in dealing with the data. Instead, it proved necessary to distinguish between talk about the specific lesson and talk about other specific occasions. A further distinction made - and an important one in relation to the concept of teachers' craft knowledge - was between de-contextualised generalised talk, and generalised talk rooted in the particular observed lesson a distinction illustrated in the two examples that follow.

Intern: You certainly sounded enthusiastic in today's lesson.  
Teacher: Well, in this case I actually did believe it. There are times when I'm doing things with them that don't enthuse me much but I think are important, so I put on a mock enthusiasm, or indeed a mock anger at something which is not that important but is necessary to discipline the class.

(Coded (c) generalised talk rooted in the particular observed lesson)

and,

Intern: Would you ever shout in your classroom?  
Teacher: I have done, I would again but most of the time it isn't productive and it's very counter-productive. Usually all the kids see is a red-faced teacher kind of spluttering and getting annoyed you know.

(Coded (d) de-contextualised generalised talk)

Thus, the categories in the final system are:

- (a) particular action, event, section, phase or aspect of the observed lesson, including products of the lesson and thinking about the lesson
- (b) on another specified occasion or other specified occasions - including those in the future - focus on particular action, event, section, phase or aspect of the lesson or lessons
- (c) a move formulated in terms of a generalisation which is nonetheless concerned with, or is closely tied to, a specific aspect of the observed lesson which is explicitly mentioned in that move or in a related prior move

(d) a generalisation that is not directly related to an action, event etc., as above.

In addition to pedagogical actions, outcomes and instances of teacher knowledge and understanding coded for specificity, the highest level of specificity occurring in each move is also coded.

### **Nature of reaction**

Interns had been encouraged to help teachers to talk about the observed teaching by probing responses and asking for elaboration. They had, on the other hand, been expressly discouraged from asking questions which led teachers to try and justify their teaching. It was important, therefore, to distinguish between a probe seeking clarification and/or elaboration, and one seeking justification.

The most problematic aspect of coding reactions was in determining when the reacting move ended. The simple procedural rule of keeping reacting moves as short as possible was adopted. In the example that follows, the reacting move ends and a structuring move begins as new considerations are introduced:

Teacher: To a certain extent that's true, but classrooms are very unpredictable, and you can't always anticipate how pupils are going to react to something.

(To a certain extent that's true - coded REA c)

This dimension of the system applies only to REACTING and REACTING/SOLICITING moves and it is operated as a sign system rather than a category system, i.e. any of the types of reaction are perceived as occurring are recorded. For the move to be categorised as REACTING or REACTING/SOLICITING, there must be at least one type of reaction, but there may be several.

(a) assent or dissent

1. an expressed agreement or concurrence with the view to which it is a reaction

*Yes, I quite agree That's just how I see it Agreed Exactly*

2. an expressed disagreement or lack of concurrence with the views expressed to which it is a reaction

*No I disagree I can't go along with you there*

(b) affect - an expression of emotion in relation to what was said in the move occasioning the reaction

1. positive - expression of pleasure, enthusiasm, appreciation

*That's great Thank you That's very interesting*

2. negative - expressions(s) of displeasure, horror, anger, shock, alarm, disbelief

*What! You must be joking! You really believe that!*

(c) qualification - expression of a reservation about the adequacy or inadequacy of the view(s) which was being assented to or dissented from

*Yes, but it's not always that simple Perhaps Not in all cases*

(d) elaboration - that part of the reacting or reacting/soliciting move that extends or exemplifies a theme already present in the move that occasioned the reacting or reacting/soliciting move

(e) probing - that part of a reacting/soliciting move which digs into what has been said in the move occasioning it to seek either;

1. clarification and/or elaboration

*Could you say a bit more about that?*            **or**

2. justification

*Are you sure they were listening?*

### **Nature of solicitation**

The single distinction between solicitations seeking purposive explanations and those seeking procedural explanations with a residual category seemed sufficient, both in terms of the hypothesis and the data. At one stage, further distinctions were made, but they seemed in the end unhelpful.

#### **(a) solicitation seeking casual or purposive explanations**

*Example: When you actually started looking at them, the documents, did you decide to read them out yourself because you didn't want to allow any room for disruption, and them reading it out?*

#### **(b) solicitation seeking procedural explanations**

*Example: How did you manage to get that group at the back to take the work seriously?*

**(c) residual category**

*Example: So when you first started out teaching, did you ever follow an approach?*

**Openness**

The categories first developed within this dimension - (a) giving teacher choice of agenda; (b) focus chosen by the questioner, answer not known; (c) hypothesis-testing question - did not capture the distinctions evident in the data. The interns had clear ideas about what they wanted to find out about - which should have come as no surprise as the conversations were part of the self-evaluation phase of the PGCE course - thereby rendering the first category redundant. The partially open, partially closed question had not been anticipated.

The earlier categories were superseded by:

- (a) **open** - respondent free to construct a response

*I noticed that you let the pupils decide which groups to work in*

*and*

*What were your particular reasons for getting them into groups?*

- (b) **partially open** - either a solicitation to which the respondent is left to construct a response, but the solicitation only makes sense on the basis of an assumption made by the solicitor about the respondent's concerns or reasoning:

*When you asked that question why did you think it would motivate the class?*

or

a solicitation in which the respondent is offered a suggestion to assent or to dissent from and is also offered an open alternative:

*Did you let them pack up early because they'd finished or what?*

- (c) **closed** - a solicitation to which either the response could be simply 'yes' or 'no':

*Did you move him because he was misbehaving?*

or

a solicitation which invites the respondent to choose from among suggestions given by the solicitor

*Did you ask the girls at the back to lead the discussion because they're bright or because they were messing about?*

### **Pedagogical actions**

The final version of this dimension contains a single category (a) whereas initially there were five categories in an attempt to draw distinctions between: pedagogical actions or decisions taken in the lesson and those taken before the lesson; and alternative pedagogical strategies rejected, as opposed to alternative strategies described as desirable. Such distinctions were in the data, but it proved confusing to have within the same dimension categories concerned with what was actually done alongside others that were not directly related to actual decisions or actions. Issues of judgement that did not relate directly to actions taken or decisions made - and those included alternative strategies - were grouped together in a separate dimension under the heading of 'mental activities in relation to teaching'.

## Outcomes - intended and otherwise

To capture the diversity and complexity of teachers' talk in relation to goals, it was necessary to establish two facets within this single dimension. One of these distinguishes *desired* outcomes from *actual* outcomes, and further differentiates among the desired outcomes in terms of the degrees of confidence expressed in their achievement - expectations, goals, hopes. The second facet is concerned with kinds of outcome, and here two further categories were added to the original predetermined categories. The first focused on pupil teacher relationships and matters of 'rapport' and, as with the other categories, was couched in positive terms. The second was a residual category of 'other or unspecified outcomes' and catered mainly for unwanted outcomes as in the following extract from one of the conversations:

Teacher: Yeah if, if I'd said at the beginning we've got four or five documents here I want you to get into pairs, and here are the questions, and go away and sort them through, I'd have been in the situation that five or six of them wouldn't have concentrated at all, for a number of reasons. They wouldn't have understood what it was, and they weren't prepared to concentrate or even try and understand it. They partly couldn't understand it, but even with me reading, they weren't prepared to work.

### Types of Outcome

(a) short-term progress

expression of desire for change - actual or considered - in the pupils in terms of their attitude, learning acquired, skills mastered, artefacts produced, coverage of work. Such changes - actual or considered - are deemed to be short-term if related to the particular observed lessons or the particular topic, scheme of work or skill being taught within the particular lesson.

(b) long-term effect(s) on pupils

as (a) above, but relating to a time span that goes beyond the particular topic, scheme of work or skill being taught in the particular observed lesson.

(c) desirable state of pupils or of pupil activity

(d) desirable kind of lesson/atmosphere/teacher-pupil relationship

(e) other or unspecified outcomes

In relation to the five categories above (a) - (e) also code **nature of intentionality**, 1 - 3 below, and /or outcome

1. expectations                      these are not mutually exclusive - one can, for
2. goals (intended outcome)    example, both hope and expect
3. hopes or aspirations

### **Factors of which account is taken**

(a) pupils

1. individual pupil(s)
2. identified sub-group
3. class or part of class
4. classes
5. year/age group
6. pupils in general
7. consideration of differences among pupils - 'they're all individuals'
8. pupil state (tired, bored, noisy, finished work, way in which they're responding etc.)

9. pupils' knowledge, understandings, pre-conceptions, attitudes, aptitudes

(b) time

1. amount of time for, or within, lesson
2. time of day, week, term, year

(c) resources, including class size

(d) content

(e) phase

1. within lesson
2. observed lesson within a series of lessons with the class

(f) social acceptability - perceptions, attitudes, opinions of others such as colleagues, senior managers, governors, parents, local community

(g) teacher state - including perceived skills, ability, 'type' of teacher

Reading of the transcripts led to category (f) being added to the initial list, and to increasingly fine distinctions being drawn within category (a) that pertains to pupils.

As the number of sub-categories within (a) grew, the initial further categorisation of pupil characteristics in terms of their perceived stability, permanency or temporary nature, appeared redundant and was therefore dispensed with.

## **Mental activities in relation to teaching**

Within this dimension, differentiation in terms of operation rather than content is sought: the concern is with the kinds of processes the teacher is engaged in when making decisions rather than with what is decided. Thus, all issues of judgement that do not relate *directly* to decisions about what was actually done are grouped together into this dimension.

Initially, a separate dimension relating to positiveness - to reflect some of the advice given to interns - was established, but the development of 'evaluation of teaching' as a category in this dimension rendered it superfluous.

### (a) planning

1. planning or re-planning engaged in before the lesson
2. planning or re-planning engaged in during the lesson
3. future planning
4. residual category - disconnected planning

### (b) evaluation of teaching

1. positive
2. negative
3. qualified

This coding is on a sign basis for moves other than student soliciting moves.

(c) alternative - instead of another - when there is consideration of an action or intended outcome as an alternative to an action or intended outcome that has been explicitly mentioned within the move or a prior move.

1. action (s)
2. intended outcome(s)

*Example: Instead of dividing them up into groups, could you have achieved the same results with whole class discussion?* pedagogical action and alternative c1

- (d) hypothetical considerations - the option(s) available for the teacher in different circumstances.

1. action(s)
2. intended outcome(s)

*Example: If the group at the back of the class hadn't been so noisy, what would you have done?* hypothetical consideration - d 1; pedagogical action - a; factors taken into account - a 2

### **Use made of past experience**

As discussed earlier in the chapter, the categories developed in this dimension came from the researcher's common sense reading of the transcripts.

It is to be expected that in a conversation between a student teacher and an experienced practitioner, it is the latter who will talk in terms of past experience. Category (b) is interesting, therefore, in that it was developed to accommodate the talk of interns relating an aspect of the observed lesson to their own teaching as is seen in the example:

Intern: I can see now why I used to have so much trouble with those two - it's a question of being clear at the beginning, isn't it?

- (a) learning from experience

x. it worked before and so ...

y. it didn't work before and so ...

*It's always important to start off this topic with practical experience. When I taught it first, I used to kick off with definitions written up on the board, but that wasn't half as effective. (ay4)*

(b) aspect of particular observed lesson to illuminate a past problem

(c) drawing on past experience to extend the discussion about the particular case

*Today I didn't given them any clues or pointers. With another class last year I started them off with sort of cryptic clues and it worked very well, but they were very different. (c14)*

All categorised in relation to:

1. pupils
2. content
3. context
4. pedagogy
5. teacher state
6. outcomes

(1-6 above are not mutually exclusive)

*Another way of getting them to understand is to do role play. That can work really well but you have to feel confident and have the right kind of class, otherwise it can be chaotic. I once tried it with this group and it was a disaster, but with my other year 8 group I often use it. (c1, 4, 5) ay*

### **How the teacher knows or understands**

This single category could be seen as a sub-set of 'mental activities in relation to teaching', but here the emphasis is on the teacher's interpretation of those things related to classroom teaching and learning rather than on planning or action as can be seen in the following example:

Intern: You said that you got them into groups because they were getting bored. How can you tell when pupils are getting bored?

## Reliability Study

In order to check on the reliability of the coding system, a second coder was trained and transcripts of three conversations, which turned out to involve about 120 moves, were coded independently by both the researcher and the second coder.

As a measure of coder reliability, Scott's Coefficient (1955) is widely accepted as appropriate, although it 'produces a conservative estimate of reliability.' (Holsti, 1968, p. 660). The formula for Scott's Coefficient is:

$$\overline{K} = \frac{p_o - p_e}{1 - p_e} \quad \text{Where } p_o \text{ is the actual proportion of agreement and } p_e \text{ is the expected proportion of agreement by chance.}$$

The good sense and simplicity of this measure would be difficult to contest. It is not, however, always obvious what is to be understood by 'proportion of agreement'. Where, for example, *soliciting* moves are being categorised into three types, there is no problem about what should be understood by 'proportion of agreement': for every move, the coders agree or they disagree. When, on the other hand, the question is about whether or not *alternative actions* are discussed within a move - something which happens quite rarely - it is not clear whether agreement that this has *not* occurred should be included within the measure of 'proportion of agreement'. While not including such agreement on negative instances does neglect genuine agreement, its inclusion would certainly give a spuriously high estimate of the reliability with which this category was being used. There seems to be little discussion of this issue in the literature, and certainly no overt consensus about it. Here the somewhat arbitrary convention has been used that if the incidence of a sign is above 25% out of all cases, then agreement on negative instances should be included in the measure of agreement, but if the incidence falls below 25 per cent, then such negative agreements should be excluded.

**Table 5.1: Reliability of Content Analysis System**

Dimension	Proportion of Agreement	Expected Proportion	Scott Coefficient
Moves (n=133) (Identification and Categorization)	.80	.26	.73
Reacting (n=29)	.97	.59	.93
Openness (n=37)	.86	.53	.70
Nature of Solicitation (n=37)	.95	.53	.89
Highest level of specificity (n=93)	.72	.35	.57
Pedagogical Action (n=107)	.84	.56	.64
Spec. of Ped. Action (n=73)	.73	.39	.56
Goals, Outcomes, etc (n=67)	.48	.08	.43
Type of Goals, Outcomes, etc (n=37)	.81	.37	.70
Spec. of Goals, Outcome, etc. (n=26)	.73	.40	.55
Mental Activities (n=38)	.32	.01	.31
Factors (n=66)	.56	.07	.53

Table 5.1 shows the actual proportion of agreement, the expected proportion, and the value of the Scott coefficient for each dimension of the coding system. It may be seen that the reliability of the coding varies considerably across the dimensions, from a very satisfactory level of 0.93 for *types of reaction* and 0.89 for *types of solicitation* to an unsatisfactory level of 0.31 for identifying and categorizing *mental activities*. Although there are other factors which need to be considered, much of this variation across dimensions seems to depend on whether the dimension involves categorizing previously identified objects (e.g. 'what type of solicitation is this?') - a *category* system, or whether it involves noticing instances of things (e.g. 'Is there within this move any mention of unintended outcomes?') - a *sign* system. The coders were on the whole much more successful in agreeing on what categories things belong to than they were in noticing instances of things. Subsequent discussion of instances noticed by one coder but not the other confirmed that when attention was drawn to a particular phrase there was rarely

disagreement on what it was an instance of; but noticing all such instances, embedded as they are in complex texts, clearly proved difficult.

Consideration of the sources of disagreement for each dimension led to the following findings:

### **Moves**

Two difficulties between them accounted for 18 of the 26 disagreements. First, as had been anticipated, it proved difficult to identify shifts from a speaker *responding* to a question, to him or her taking a new initiative in a *structuring* move. Second, less anticipated, equally frequent and more easily rectifiable, there was some divergence about whether utterances beginning 'Right, ..' or 'Yes, ..' should be coded as *reactions* as well as the more substantive *soliciting*, *responding* or *structuring* moves which followed.

### **Specificity**

The levels of agreement for *specificity* were disappointingly low in all three cases (*highest level* within the move, *pedagogical action*, and *outcome*). The major source of disagreement (accounting for 16 of the 26 disagreements for *highest level*, and for 14 of the 20 disagreements for *Specificity of pedagogical action*) was between categories c and d, that is between generalisations rooted in an identified observed event and those which are discussed in a decontextualised way. The disagreement stemmed, furthermore, from different interpretations of the guidelines by the two coders, with the researcher finding little need for category d and the second coder switching from c to d when conversations initially rooted in observed events had ceased to have any explicit connection with these events. Clearly the guidelines needed to be clarified, but this precise identification of the problem gave confidence that it could be overcome.

## **Pedagogical Actions**

With only a dichotomous judgement to be made here, the level of agreement was again rather lower than desirable. Again, however, the problem seems to be a systematic one, in that most of the 17 disagreements are accounted for by the fact that the researcher coded 16 more moves as involving *actions* than did the second coder, and that most of these disagreements related to actions implicitly referred to rather than explicitly described. Sharpening up of the guidelines would, it was thought resolve this problem quite easily.

### **Goals, outcomes, etc; mental activities; factors of which account is taken**

These are the three dimensions for which the reliability findings are poorest, and are indeed clearly unsatisfactory. As already noted, they are all dimensions for which sign systems are necessary, and there seemed to be no explanation of the lack of reliability other than the difficulty for the coder of noticing everything that is there to be found in a complex text. It was not obvious how the guidelines could be improved to overcome this problem, although one step which was taken was that of enlarging the guidelines to give multiple examples of the kinds of things which should be coded within each category. Frequent rehearsal of such guidelines might prevent coders from overlooking certain types of instance.

### **Outcome type**

A separate analysis was conducted to explore the reliability with which expectations, goals, hopes and outcomes were categorized if they had been identified as such by both coders. Here the categorization was reasonably satisfactory, there being disagreement in only 7 of the 37 instances. All but one of these related to borderline decisions between category c, 'desirable state of pupils or of pupil activity' and other categories, especially category a, 'progress'.

## **Use of past experience; how the teacher knows**

Neither of the two coders found more than two or three instances of either of these categories in the transcripts coded. They agreed on some of these four and disagreed on others; but clearly further evidence would be needed to judge the reliability with which these categories could be used.

## **Further tests of the system's reliability**

In the light of the lessons learned from the reliability trial, and especially the fuller and clearer operational rules that were subsequently developed, a second small scale reliability trial was carried out with a second independent coder. This trial seemed to show that the new rules had considerably improved the system's reliability. Forty moves were coded, involving 260 or more decisions or identifications. The two codes disagreed on only twelve of these decisions, nine of these disagreements being concerned with factors taken account of. Over the forty moves, the researcher identified 35 factors, the other coder 30, with agreement on 26 of them.

Overall, the evidence about reliability, although far from ideal, is quite encouraging. Not only does the Scott coefficient, as Holsti reports, give conservative estimates of reliability. In addition it must be recognized that a second observer, learning to use a complex system like this solely for the purposes of the reliability study, is hardly likely to develop the sensitivity to key definitions, rules and cues that the researcher who has developed the system and who codes all the conversations is likely to acquire. In practice, the researcher, as a result of successive refinements to the system, actually coded most of the conversations at least twice; and when she checked successive codings of the same material by herself, it was encouraging - although no systematic evidence was gathered on this - that she found herself regularly making the same judgements on the same material at intervals of several months.

## Conclusions

Berelson warns against expecting too much of content analysis:

Content analysis, as a method has no magical qualities - you rarely get out of it more than you put in, and sometimes you get less (Quoted in Holsti, 1968, p. 673)

This chapter has described the development of a content analysis system aimed primarily at allowing the researcher to ask the following quantitative questions:

1. To what extent do student teachers, in their post-lesson conversations with observed teachers, follow the guidance which they have been offered?
2. In such post-lesson conversations, what roles do teachers adopt and in what terms do they talk about their teaching? In particular, how does the way they talk about their teaching relate to the account of teachers' professional craft knowledge given by Brown and McIntyre (1993) on the basis of their research?
3. What correlational relationships are there between the extent to which individual student teachers follow the guidance offered and the extent to which the teachers with whom they work appear to reveal their professional craft knowledge?

Using the content analysis system, the next chapter seeks to answer these questions.

## **Chapter Six**

### **Conversations between interns and experienced teachers: results of the content analysis**

#### **Introduction**

This chapter reports the evidence from the content analysis of the twenty eight conversations between interns and experienced teachers. First, descriptive information is provided about the structure of the conversations in terms of types of move, and about the extent to which interns followed the suggested guidelines in relation to specificity, openness, positiveness and probing. Second, patterns of interns' and teachers' talk are described and exemplified in terms of aspects of craft knowledge and other things about which they talked. Thirdly, results are reported about correlations between characteristics of interns' and teachers' talk, both in relation to specific moves and in relation to whole conversations. Finally, the effectiveness of the procedure in enabling interns to gain access to teachers' craft knowledge is discussed in the light of these results.

#### **Moves**

##### **Overall structure of the conversations**

There is wide variation in the number of moves in the 28 conversations; at one extreme there is a conversation of 178 moves, while at the other, one of 16 moves. Such wide variation is not, however, reproduced in the proportion of the ten different kinds of move within each conversation.

It was intended that in the conversation with the teacher following the observed lesson, the student teacher would explore the teacher's craft knowledge. It was anticipated, therefore, that such conversations would be dominated by student solicitations and teacher responses, with student reactions and reaction/solicitations figuring relatively prominently. Table 6.1 demonstrates that this is exactly the kind of conversation that took place, with the four types of move identified above as those expected to dominate, on average making up 79% of the moves, the range of variation being 47% to 97%.

**Table 6.1 Overall structure - types of move**

Types of move	Percentage frequency distribution across 28 conversations							average %
	ZERO	1-9	10-19	20-29	30-39	40-49	50+	
<b>Student</b>								
Structuring	8	19	1	0	0	0	0	<b>6</b>
Soliciting	0	0	9	12	7	0	0	<b>21</b>
Reacting/Soliciting	2	7	16	3	0	0	0	<b>12</b>
Responding	22	6	0	0	0	0	0	<b>0</b>
Reacting	1	13	11	3	0	0	0	<b>12</b>
<b>Teacher</b>								
Structuring	2	15	11	0	0	0	0	<b>9</b>
Soliciting	23	5	0	0	0	0	0	<b>0</b>
Reacting/Soliciting	22	6	0	0	0	0	0	<b>0</b>
Responding	0	0	1	4	13	10	0	<b>34</b>
Reacting	6	19	3	0	0	0	0	<b>6</b>

As can be seen in the table, the most common move is teacher response and this is true for 27 of the 28 conversations. The second most common move is student solicitation, which is the case in 22 of the conversations. The incidence of three types of move - teacher solicitation, student response, and teacher reaction/solicitation is extremely low - in total 25 out of 1519 moves across the 28 conversations. In terms of averages across all conversations, each of these three types recorded less than 1%, and this was the case for

22 of the conversations. In only one conversation did any of these three moves constitute more than 2% of the total number of moves.

### **Types of move**

The very low incidence of teacher solicitation, student response and teacher reaction/solicitation indicated above, suggests that further examination of each of these three types of move is unwarranted. What follows, therefore, is a closer examination first of teacher structuring, student structuring and teacher reacting, three types of move of which there is a reasonable incidence but moves which are not important in terms of the research questions being asked, then of the four types of which there is a high incidence and which are pertinent to the questions being asked - student solicitation, teacher response, student reactions, student reaction/solicitations.

#### Teacher structuring moves

As indicated in Table 6.1 teacher structuring moves account for 9% of the total number of moves, a modest number of assertions by teachers that were introducing information not solicited by the students. Of that total, 45% is to be found in three conversations, which were distinctive in that the teachers took a bigger part in initiating matters and this contributed to these conversations being longer than the others (the three with the highest number of moves overall). It is evident then that in 25 of the 28 conversations unsolicited assertions by teachers played a very small part.

In most of the conversations, the majority of teacher structuring moves focused on specific classroom events, most commonly concerning something that had happened in the observed lesson (specificity a).

### Student structuring moves

The students had been discouraged from making statements in the conversation with the teacher, and it is evident from the modest overall number of student structuring moves - 6% of the total number of moves - that, for the most part, they had refrained from so doing. Indeed in eight of the conversations there are no statements made by students, while 26% of the total is furnished by two conversations, the two with the highest number of moves overall and with the highest incidence of unsolicited assertions by teachers.

In the light of the advice given to students about desisting from talking about themselves and their own teaching, it is interesting to note that in 23 of the conversations they succeeded entirely in doing this, and overall, expressed concern with their own teaching represents a very modest 2% of student structuring moves.

In more than half of the conversations containing student structuring moves, there were no assertions by students that were not directly related to a specific aspect of the observed lesson. 51% of all the student statements were concerned with a specific aspect of the observed lesson (specificity a), while a further 21% were more generalised statements related to the particular observed lesson.

### Teacher reacting moves

It will be remembered that reacting moves could include several types of 'reaction' coded on a sign system. Therefore the teacher reacting moves, which as Table 6.1 indicates constituted 6% of all moves, are analysed (together with the very small number of teacher reacting/soliciting moves - 6 out of a total of 1519) in terms of the different kinds of 'reactions' coded.

Overwhelmingly the most common kind of teacher reaction was type a1, expressing agreement, accounting for 47% of the total number of teacher reactions. The only other

relatively frequent reaction - accounting for 35% of all teacher reactions - was type d, an elaboration by the teacher of what had been said by the student.

### Student soliciting moves

Much of the advice given to the student teachers focused on the kinds of questions they should ask teachers following the observed lesson, and the framing of those questions. In looking at student soliciting moves, therefore, it is necessary to examine four aspects of those questions: the degree of openness; question type; level of specificity; and evaluation. For each of these four aspects the data are presented in tables indicating the percentage for all solicitations in the 28 conversations, and secondly the variation across conversations by showing the lower quartile, median and upper quartile.

### *Openness*

**Table 6.2 Student solicitations: degree of openness**

Degree of openness	% of all solicitations	Variation in percentage across 28 conversations		
		lower quartile	median	upper quartile
a	42	29	48	57
b	4	0	0	0
c	53	38	50	60

It is clear that on a very wide scale, students either were not persuaded of the merits of asking open questions (type a), or they found it difficult to ask such questions. As can be seen in Table 6.2, in a quarter of the conversations, 29% or fewer of the solicitations were of type a; in half 48% or more were of type a, and over 57% of student solicitations were of type a in a quarter. In 22 of the conversations none of the solicitations were of type b

(partially open). In most conversations the split between open questions (including type b, partially open), and closed questions (type c) was around 50%.

***Type of question***

As part of the student teachers' introduction to these procedures, it had been stressed that observation with follow-up discussion was an opportunity to learn how an experienced practitioner made sense of a lesson. To this end they had been advised to ask questions that focused on the teacher's actions, the teacher's reasons for the actions taken, and the conditions and circumstances that led to particular decisions being taken. As can be seen in Table 6.3 below, on average 25% of the questions were of type a, questions seeking causal or purposive explanations and usually framed as 'why' questions; 16% were of type b, questions focusing on procedural aspects of teaching and typically 'how' questions; with 59% of the questions falling into the residual category (type C), typically 'what' questions.

**Table 6.3 Student solicitations: question type**

Type of solicitation	% of all solicitations	Variation in percentage across 28 conversations		
		lower quartile	median	upper quartile
a	25	17	25	36
b	16	9	14	29
c	59	38	57	71

Although the student teachers had not been asked to emphasise any one particular type of question, it was nonetheless disappointing that the purely descriptive kind of question tended to be dominant.

## *Specificity*

The importance of relating questions to the particular lesson observed and the avoidance of framing questions as generalisations had been emphasised, and it would appear that this strand of the guidelines was followed. In 13 of the 28 conversations, there were no instances of questions formulated in terms of generalisations not related to a specific aspect of the observed lesson (specificity d), and of all solicitations only 19% were of this level of specificity. Furthermore, as can be seen in Table 6.4 below, in a quarter of the conversations 71% or more of the solicitations were of specificity a, a specific question focusing on a particular aspect of the observed lesson, while in half of them 55% or more of the solicitations focused on a specific aspect of the observed lesson.

**Table 6.4 Student solicitations: specificity**

Level of specificity	% of all solicitations	Variation in percentage across 28 conversations		
		lower quartile	median	upper quartile
a	49	36	55	71
b	6	0	0	13
c	26	11	25	33
d	19	0	13	23

## *Evaluation*

**Table 6.5 Student solicitations: evaluation**

Evaluation	% of all solicitations	Percentage variation across 28 conversations		
		lower quartile	median	upper quartile
positive	10	0	8	16
negative	0	0	0	0
neutral	90	84	92	100

Although the student teachers were not specifically asked to make positive evaluations in their questions, it was suggested that they should focus the questions on things that had gone well in the lesson, and so one might expect positive evaluation in their questions. It is, therefore, interesting to note that of all the solicitations none were negative in their evaluation. On the other hand, only 10% were positive and it can be seen that in the great majority of questions, evaluations were neither positive nor negative.

### Teacher responding moves

Since the students were urged to access the knowledge and expertise used by the teacher in the observed lesson, the extent to which teacher responses were related to the observed lesson is of interest. From Table 6.6 below, it is clear that to a considerable extent teachers' responses did tend to be concerned with the observed lesson. Not only were 42% of teacher responses concerned with specific aspects of the observed lesson (specificity a), but two thirds of their responses were at least clearly rooted in the observed lesson (specificity a, and c).

**Table 6.6 Teacher Response: levels of specificity**

Level of specificity	Frequency distribution of percentage of levels of specificity across 28 conversations						average %
	Zero	1-19	20-39	40-59	60-79	80+	
a	2	5	8	3	8	2	42
b	11	15	2	0	0	0	7
c	3	11	8	6	0	0	23
d	5	7	9	2	4	1	28

When moving, however, from the overall percentages for the different levels of specificity across the 28 conversations to an examination of individual conversations, one finds no common pattern. The range of variation, for example, of the percentage of responses focusing on a specific aspect of the observed lesson (specificity a) is 0% to 93%: at one extreme there were no teacher responses relating to a specific aspect of the lesson; at the other virtually all the teacher responses related to the specifics of the lesson. In addition, in five of the conversations there was a higher incidence of teacher generalisations not related to the lesson (specificity d) than of responses related to specific classroom events (specificity a, b and c). Most of the other 23 conversations follow the pattern suggested by the overall figures: teacher responses related to specific classroom events (specificity a, b and c) easily outnumber those that were not (specificity d).

### Student reactions

As for teacher reactions, the term reaction in the following discussion refers not to a move but to an instance of reacting. In reacting and reacting/soliciting moves each coded element is called a reaction. For example, the following reacting/soliciting move which, in addition to being a probe includes positive affect as well as an elaboration, would be seen as having three reactions: "That's really interesting, but are you testing your control at the same time when you make a joke like that ?"

There was wide variation in the extent to which students reacted to what the teachers said. The range of variation was from 2 to 67 reactions with five conversations - and not all among the longest conversations - accounting for 46% of the total number. Thus, some conversations were distinctive in their nature in that they were saturated with reactions.

In the guidelines given to the students, the difficulty for teachers in articulating their craft knowledge, and the ease with which they might adopt a defensive stance if insensitively questioned, was pointed out. The students were advised, therefore, to be generally positive and encouraging in the conversation with the teacher.

The extent to which the student teachers followed the advice offered can be gauged by the fact that out of a total of 449 reactions, there were only five single instances of dissent (reaction a2), and just two of negative affect (b2), compared with 114 instances of agreement (reaction a1). As can be seen in Table 6.7, the positive nature of the student reactions is further underlined when comparing the proportion of instances of agreement (reaction a1) - 25% - with the combined total for dissent (reaction a2), negative affect (b2) and expressions of reservation about the teacher's expressed view (c) - 6%. Individual conversations followed the overall pattern indicated above in that in 27 of the 28 conversations, there was a far higher incidence of expressions of agreement (reaction a1) than of the total number of expressions of dissent (a2), negative affect (b2) and reservation or qualification about what was said by the teacher (c).

Similarly, of the 178 instances of probes in the reacting/soliciting moves, seven only, occurring in 5 of the conversations, were probes seeking justification (e2). The overwhelming majority of probes then, 96%, were of type e1 which sought elaboration, clarification or confirmation of what had been said by the teacher.

The other relatively frequent kind of student reaction accounting for 25% of the reactions overall, was an elaboration by the student of what had been said by the teacher (reaction d).

**Table 6.7 Student teacher reactions (in reacting and reacting/soliciting moves)**

Types of reaction	Percentage frequency distribution across 28 conversations							average %
	ZERO	1-9	10-19	20-29	30-39	40-49	50+	
a1	2	3	7	5	5	1	4	25
a2	23	4	1	0	0	0	0	1
b1	13	9	2	4	0	0	0	5
b2	26	1	1	0	0	0	0	0.5
c	14	11	2	1	0	0	0	4
d	7	2	4	8	6	0	1	24
e1	3	0	2	4	3	9	7	38
e2	24	3	2	0	0	0	0	2

### Student reacting/soliciting moves

In this section, the focus is on those aspects of student reacting/soliciting moves which pertain to the nature of the questioning, since the reacting part of these moves has been discussed under the heading of student reactions.

It was explained to the students that in the conversation following the lesson, teachers might have difficulty in talking at any length about particular aspects of the observed teaching, because they rarely had the opportunity to talk in this way and because they tended to take their expertise for granted. Therefore, to help the teachers elaborate on their responses to questions, the students were encouraged to ask follow-up questions before moving on to questions about other aspects of the observed lesson. With student

reacting/soliciting moves accounting for 12% of the total number of moves (as seen in Table 6.1), it would appear that the advice to probe was followed.

The number of probes varied considerably across the 28 conversations, from nothing to twenty, or 0% to 21% of the total number of moves. This wide variation in the extent to which the student teachers probed the teacher is best illustrated by looking at the ratio of reacting/soliciting moves to soliciting moves, a range of 0.00 to 1.86.

**Table 6.8 Student reacting/soliciting moves**

Average ratio	Ratio of reacting/soliciting moves to soliciting moves across 28 conversations		
	lower quartile	median	upper quartile
0.56	0.20	0.50	0.73

As Table 6.8 shows, in half the conversations there was at least one probe for every two solicitations, and in a quarter, 73% or more of the solicitations were followed up.

As part of the discussion of student soliciting moves, it was pointed out that the central part of the advice given to the students concerned the questions they should ask the teacher, and equally important, the ways in which they should pose them.

In looking at the solicitation part of student reaction/solicitation, therefore, it is important to examine the extent to which the students followed the advice about openness, types of questions and level of specificity. In relation to each of these three aspects of probes, comparison is made with student solicitations in order better to understand the nature of the probes.

## *Openness of probes*

**Table 6.9 Student reaction/solicitations: degree of openness**

Degree of openness	average %	Variation across 28 conversations		
		lower quartile	median	upper quartile
a	19	0	5	33
b	1	0	0	0
c	79	67	88	100

It is clear that for the most part the students did not ask follow-up questions of the kind that had been envisaged by the researcher. As can be seen in Table 6.9 in at least a quarter of the conversations there were no probes of an open kind, while in half 5% or less were open. Whereas in most conversations the split between open questions and closed questions was around 50% for solicitations (see Table 6.2), in all the conversations the vast majority of follow-up questions (reaction/solicitations) were closed (type c), which suggests that the students, far from probing the teacher for further information, asked follow-up questions in order to confirm their understanding of the teacher's response to their earlier question.

### *Type of question asked in probes*

Table 6.10 shows clearly that 72% of the follow-up questions - compared with 59% of solicitations (see Table 6.3) - fell into the residual category (type c), typically 'what' questions, again suggesting that the follow-up questions were not generally used to probe deeper into the teacher's expertise.

**Table 6.10 Student reaction/solicitations: question type**

Types of solicitations	% of all reactions/solicitations	Variation across 28 conversations		
		lower quartile	median	upper quartile
a	19	0	15	50
b	9	0	0	10
c	72	50	67	93

*Specificity in probes***Table 6.11 Student reaction/solicitations: specificity**

Levels of specificity	% of all reactions/solicitations	Variation across 28 conversations		
		lower quartile	median	upper quartile
a	37	0	20	67
b	7	0	0	7
c	31	0	30	50
d	26	0	9	40

The fact that 57% of probes were framed as generalisations (categories c and d) compared with 45% of solicitations falling into those categories (see Table 6.4), suggests that in their probing the student teachers tend relatively to be more concerned with generalisations, which may or may not be rooted in the observed lesson.

## **Content dimensions**

### **Introduction**

The content dimensions of the 28 conversations are examined in relation to teacher talk - which embraces all teacher moves - and student initiating moves which cover three types of student move - structuring, soliciting and reacting/soliciting. Since the researcher is interested in the ways in which the teachers talked in these conversations, all teacher moves were coded for content dimensions. The interest in the students, on the other hand, is in the ways in which they initiate conversation through questions or assertions. The number of student responding moves is negligible (twelve out of a total number of all kinds of moves of 1519), and although student reacting moves are plentiful, they typically contain no substantive matter. It would seem to make sense, therefore, when looking at the content dimensions of student talk to focus on structuring, soliciting and reacting/soliciting moves. Thus, the data for the content dimensions are gleaned from the 746 moves which constitute teacher talk, and 585 student initiating moves.

Since one interesting perspective on the data is that provided by the similarities and differences between what students talked about in their initiating moves and what the teachers talked about, most of the results are presented in the form of tables which set student talk in comparison with teacher talk.

### **Pedagogical actions**

Pedagogical actions were coded using a single category and refer only to pedagogical actions or decisions taken.

Although there is slightly more emphasis on actions by teachers than by students, the main point of interest when examining this dimension is the congruence between the teachers and the students: in 69% of teacher talk moves, mention is made of pedagogical actions;

for students the figure is 68%. Furthermore, across the 28 conversations there is little variation either within teacher talk or student initiating moves, as is illustrated in Table 6.12 below.

**Table 6.12 Pedagogical actions**

	Proportion of moves in which actions are mentioned	Variation across 28 conversations		
		lower quartile	median	upper quartile
student initiating moves	0.68	0.61	0.71	0.80
teacher talk	0.69	0.65	0.79	0.88

## Outcomes

**Table 6.13 Outcomes**

	Average no. per move	Variation across 28 conversations		
		lower quartile	median	upper quartile
student initiating moves	0.44	0.29	0.45	0.50
teacher talk	1.16	0.56	0.86	1.25

As there are different categories of outcome, each instance of mention within a move was coded.

Overall, there are 645 instances of mention of outcome in teacher talk and 256 in student initiating moves. Table 6.13 represents the variation of mention of outcome across the 28

conversations, and these data point to the fact that teachers are likely to talk of outcomes more than twice as often as do students, something one might reasonably expect as teachers were encouraged to talk of their teaching in the observed lesson. What is more surprising is the variation within teacher talk across the 28 conversations, a range of 0.14 to 1.81 outcomes per move.

**Table 6.14 Outcomes: type**

Type of outcome	Percentage of total number of outcomes	
	student initiating moves	teacher talk moves
<b>a</b> (short-term progress)	17	26
<b>b</b> (long-term effect(s) on pupils)	0.8	2
<b>c</b> (desirable state of pupils or of pupil activity)	32	28
<b>d</b> (desirable kind of lesson, atmosphere, pupil/teacher relationship)	9	12
<b>e</b> (general or residual outcomes)	41	33

Two main areas of interest emerge from the data presented in Table 6.14. First, although there is some variation in the ratio of different kinds of outcome between teachers and students, the rank order is the same for the two. For both, type e outcomes comprising general outcomes - 'Did you think they were any better or any worse than normal?' - and those falling outside of the categories a to d - 'Reading to each other can be less threatening - in fact, I think somebody chose to read aloud when they went off into their groups' - are predominant, with type c second, followed by types a, d and finally, b. Thus, it can be seen that the types of outcome with which they are concerned are broadly the same. In so far as there is a difference it is in teachers' greater emphasis on pupils' progress, both short and long-term.

The other striking feature of these data is the very low incidence of talk of long-term effect(s) on pupils. While teachers often gave reasons for acting as they did, it was very rare for them to explain their actions in terms of their actual or intended long-term effects on pupils.

**Table 6.15 Outcomes: type**

Type of outcome	Percentage frequency distribution of types of outcome						
	zero	1-9	10-19	20-29	30-39	40-49	50+
<b>a</b> student	10	1	6	6	2	1	2
teacher	3	4	4	5	7	2	3
<b>b</b> student	26	2	0	0	0	0	0
teacher	21	6	0	1	0	0	0
<b>c</b> student	5	0	4	4	3	2	10
teacher	0	0	6	11	7	2	2
<b>d</b> student	15	3	5	4	0	1	0
teacher	8	8	6	5	1	0	0
<b>e</b> student	7	0	2	4	3	4	8
teacher	0	0	6	7	4	3	8

As Table 6.15 indicates, the teachers varied enormously in the extent to which they talked about pupils' short-term progress (type a). This variation - a range of 0% - 60% - is less wide than within student initiating moves for which the range is 0%-100%, but the greater

student 'variation' results largely from students simply not mentioning specific types of outcome (as suggested by the heavy concentration of zeros for the students) when, for example, asking open questions.

**Table 6.16 Outcomes: nature of intentionality - percentages of types**

Nature of intentionality	Student initiating moves	Teacher talk moves
1 = expectations	4	6
2 = goals	32	42
3 = hopes or aspirations	2	5
4 = outcome(s)	63	47

Outcomes are also categorized in terms of 'nature of intentionality', with actual outcomes (category 4), differentiated from expected (1), intended (2) and hoped for (3) outcomes. From Table 6.16, it is again worth noting that the concerns of the teachers and the students are broadly similar; for both, goals (2) and actual outcomes (4) are predominant, with expectations (1) and hopes or aspirations (3) together amounting to 11% and 6% of their respective totals. There are, however, interesting differences between the two sets of speakers; whereas the teachers talk almost as much of goals as they do of outcomes, the students' overwhelming concern (as indicated by the data in Table 6.16) is with outcomes. Such differences, however, are not surprising. Outcomes are observable and therefore a proper basis for questions, whereas goals are not observable and are, therefore, more appropriate for answers. An examination of individual conversations suggests that the overall pattern outlined above is reflected in most of the 28 cases.

**Table 6.17 Outcomes: nature of intentionality**

Nature of intentionality	Percentage frequency distribution of types of outcome						
	zero	1-9	10-19	20-29	30-39	40-49	50+
<b>1</b> student	20	4	2	2			
teacher	10	8	8	2			
<b>2</b> student	4	0	3	7	4	3	7
teacher	1	0	3	0	7	8	9
<b>3</b> student	24	2	1	0	1	0	0
teacher	16	6	6	0	0	0	0
<b>4</b> student	2	0	0	1	0	2	23
teacher	0	0	1	1	4	10	12

**Factors of which account is taken**

An important feature of teachers' classroom knowledge is the extent to which pedagogical decisions and outcomes are tempered by conditions or factors of which they take account. It was anticipated, therefore, that in the conversations between teachers and students, factors of which account is taken would be a significant feature of teacher talk. The data presented in Table 6.18 suggest that this is the case.

**Table 6.18 Factors of which account is taken: overall numbers**

	Average no. per conversation	Variation across 28 conversations		
		lower quartile	median	upper quartile
student initiating moves	10	3	6	13
teacher talk	45	24	38	75

As indicated in Table 6.18 - and as might reasonably be expected - teachers mentioned factors of which account is taken far more than did the students. These data also indicate a wide variation in frequency of mention of factors within teacher talk. In a quarter of the conversations there were 24 or fewer mentions of factors by teachers, whereas in another quarter factors were mentioned on 75 or more occasions. Such wide variation, it could be argued, is not surprising given the variation in the number of teacher talk moves across the 28 conversations, with, for example one conversation containing 14 teacher talk moves, and another, 84. However, as can be seen in Table 6.19, differences among the teachers remain significant even when the variation in the number of teacher talk moves is taken account of by focusing on the frequency of mention of factors per teacher talk move.

**Table 6.19 Factors of which account is taken: number of factors per move**

	Average	Variation in number per move across 28 conversations		
		lower quartile	median	upper quartile
student initiating moves	0.48	0.21	0.36	0.73
teacher talk	1.69	1.17	1.85	2.62

Thus, not only was the talk of teachers as a group far richer in mention of factors than that of the students, but there was a significant number of teachers whose talk was especially rich in that respect.

There are ten categories within the dimension of factors of which account is taken, and it is to the different kinds of factors that discussion now turns.

**Table 6.20 Factors of which account is taken: different kinds of factors**

Factor	Percentage of total number of factors	
	student initiating moves	teacher talk moves
<b>a</b> pupils	66	69
<b>b</b> time	5	4
<b>c</b> resources	3	3
<b>d</b> content	13	14
<b>e</b> phase	5	3
<b>f</b> social acceptability	0.3	0.3
<b>g</b> teacher state	7	5
<b>h</b> curriculum/examination	0.3	0
<b>i</b> classroom circumstances created by the teacher	1	1
<b>j</b> awareness of being a teacher in the classroom	0	0

A striking feature of the data summarised in Table 6.20 is the similarity between the teachers and the students in the kind of factors to which they referred in the conversations. Such congruence is especially interesting in the light of the literature from, among others, Calderhead (1983) and Berliner (1988), that suggests that student teachers and experienced teachers are likely to have very different ways of thinking about teaching. The other significant feature concerning the different kinds of factors and highlighted in Table 6.20 is the extent to which teachers referred to pupil factors. Teachers' preoccupation with pupil-associated factors when setting goals or taking pedagogical action is not surprising, echoing as it does the evidence provided by Brown and McIntyre (1988); rather it reassuringly suggests that in the conversations teachers were articulating their classroom craft knowledge.

The results presented in Table 6.21 point to a tendency for the same pattern to be followed not only by the vast majority within a group, but also across the two groups. For both the teachers and the students the greatest variation within the group is the extent to which they mentioned content (factor d).

The considerably larger number of factors in teacher talk suggests that teachers mention factors important to them and are not simply following the students' lead. This is highlighted when looking at individual conversations. The number and type of factors mentioned by the teachers do not reflect the small number mentioned by the students; in, for example, the four conversations in which there is no mention by the students of pupils as a factor (a), the teachers' references to pupils as a factor totalled twenty seven. On the other hand, in one conversation - with the lowest overall number of moves - the high incidence of mention of resources (factor c) by the teacher would appear to be in response to the concerns of the student who made no mention of any other factor.

**Table 6.21 Factors of which account is taken: types of factor**

Factor	Frequency distribution of percentage of types of factor in teacher talk and student initiating moves						
	zero	1-9	10-19	20-29	30-39	40-49	50+
student initiating moves a	4	0	0	2	0	1	21
b	19	3	1	0	2	0	3
c	22	3	2	0	0	0	1
d	15	4	2	5	2	0	0
e	21	2	4	0	1	0	0
f	27	1	0	0	0	0	0
g	21	5	0	1	1	0	0
h	28	0	0	0	0	0	0
i	25	2	1	0	0	0	0
j	28	0	0	0	0	0	0
teacher talk a	0	0	0	0	1	1	26
b	8	14	6	0	0	0	0
c	16	10	1	0	0	1	0
d	3	13	6	5	1	0	0
e	3	23	2	0	0	0	0
f	25	3	0	0	0	0	0
g	6	14	6	2	0	0	0
h	25	3	0	0	0	0	0
i	21	7	0	0	0	0	0
j	27	0	1	0	0	0	0

As allusion to pupils accounted for more than two thirds of all references to factors in the conversations, the next part of this chapter focuses more closely on factor a (pupils).

The similarity of concerns between the students and the teachers pointed out in earlier discussion of factors taken account of, is, to some extent, reinforced by the results presented in Table 6.22. The results also indicate some interesting differences between the two groups. The students are clearly more interested in the differences among individual pupils (sub-categories a1 and a7) than are the teachers; while, for their part, the teachers reveal greater interest than the students in the pupils in general (sub-categories a6 and a9).

**Table 6.22 Types of pupil factors of which account is taken: Percentages for teachers and for students**

Factor a: sub-category	Student initiating moves	Teacher talk
a1 individual pupil(s)	24	12
a2 identified sub-group	9	9
a3 class	16	15
a4 classes	2	2
a5 year or age group	2	5
a6 pupils in general	4	10
a7 consideration of differences among pupils	6	1
a8 pupil state	19	19
a9 pupils' knowledge, understanding, preconceptions, aptitudes, attitudes	18	27

### Interaction of factors

At first glance it appears that as with the number of factors taken account of, the much higher incidence of interactions among factors within teacher talk (an average of 14 per conversation) than within student talk (average 2.75 per conversation) reveals the more subtle and sophisticated nature of the teachers' knowledge as manifested in their talk.

However, a very different picture emerges when one looks at the ratio of mentioned interactions among factors to total factors mentioned. For teachers the figure is 31%, and for the students 27%, not a big difference between the two groups.

**Table 6.23 Interactions among factors for teachers and students**

Frequency distribution in terms of number of interactions among factors							
Number of interactions	zero	1-4	5-9	10-14	15-19	20+	Average
student initiating moves	6	16	5	1	0	0	2.75
teacher moves	1	5	4	8	2	8	14

The other point of interest in relation to the interactions among factors is the extent of variation among teachers; but as Table 6.24 shows, this wide variation largely reflects the variation in number of factors mentioned, with the ratio of interactions to factors following in the range .20-.39 for twenty of the teachers.

**Table 6.24 Factors of which account is taken: ratio of interactions among factors to total factors**

Frequency distribution of conversations in terms of ratio of interactions to factors							
Ratio of interactions to factors	0	.01-.09	.10-.19	.20-.29	.30-.39	>.40	average
student initiating moves	6	0	4	6	11	1	.27
teacher talk	1	2	2	7	13	3	.31

## Mental activities in relation to teaching

The discussion of mental activities in relation to teaching begins with an examination of the dimension as a whole. In the 28 conversations, there are 107 references by the students to mental activities and 350 by the teachers, figures which suggest that the processes engaged in when making up one's mind as a teacher do not figure prominently in the talk of either group. On the other hand, it is clear that when the teachers did talk about their mental activities, it was usually without being asked about them.

**Table 6.25 Mental activities in relation to teaching: number mentioned in each conversation**

Number of mental activities mentioned in conversation	0	1-4	5-9	10-14	15-19	20-24	25+	Average no. per conversation
student	3	16	7	2	0	0	0	4
teacher	0	4	8	7	5	3	1	12

**Table 6.26 Mental activities in relation to teaching: different categories**

Category	Frequency distribution of number of instances in teacher talk moves and student initiating moves					
	Total in 28 conversations	0	1-4	5-9	10-14	15+
<b>Students</b>						
a) planning	24	15	12	1	0	0
b) evaluation of teaching	35	13	13	2	0	0
c) alternative	13	18	10	0	0	0
d) hypothetical considerations	21	17	10	1	0	0
e) validity of expectations or predictions	0	28	0	0	0	0
f) use made of past experience	3	25	3	0	0	0
g) how the teacher knows and understands	14	17	11	0	0	0
<b>Teachers</b>						
a) planning	27	13	15	0	0	0
b) evaluation of teaching	120	2	14	8	4	0
c) alternative	74	4	20	4	0	0
d) hypothetical considerations	69	6	16	6	0	0
e) validity of expectations or predictions	3	25	3	0	0	0
f) use made of past experience	24	18	8	2	0	0
g) how the teacher knows and understands	33	14	12	2	0	0

Planning

Within this dimension of mental activities, it is only in relation to planning that student numbers are comparable to teachers', and the striking similarity between the two groups suggests that talk of planning was, for the most part, initiated by the students. It would be wrong, however, to assert that as had earlier been suspected the students were pre-

occupied with whether pedagogical actions and classroom outcomes are planned; the low incidence of references to planning leads one to question this assumption about their concerns. Rather, the numbers - twenty of students' mentions of planning referred specifically to pre-lesson planning, as did seventeen of the teachers' twenty seven mentions - indicate that a minority of the students were understandably intrigued by teachers' capacity for flexibility and wanted to ask repeatedly, 'Did you plan that?'

### Evaluation

Evaluation in relation to content is distinguished from evaluation in relation to the procedures of questioning and probing. All student teacher questions and probes were coded in relation to negative or positive evaluation, whereas evaluation as a mental activity applies to all types of move but only when there is explicit evidence of direct or indirect evaluation of teaching including goals, expectations, aspirations and outcomes.

In so far as they evaluated the teaching, the students, in accordance with the guidelines, were overwhelmingly positive: of the 35 student evaluations, 26 were positive, eight negative (three of which concerned their own teaching), and one qualified. The teachers talked in quite evaluative terms about their teaching, both positively and negatively: of their 120 evaluations, 54 were positive, 49 negative and 17 qualified. Variation among teachers was not in terms of whether they were positive or negative, but in how evaluative they were.

### Alternatives

The difference in the numbers for the two groups suggests that teacher talk of alternatives - consideration of an action or intended outcome as an alternative to a previously mentioned action or intended outcome - was not directly prompted by the students' questions. This is further emphasized by the fact that whereas student references to alternatives were roughly divided equally between outcomes and actions, all save one of

the 74 teacher mentions were concerned with alternative actions. This picture of teachers not considering alternative goals but focusing almost exclusively on how to bring about what they want, is consistent with the representation of teachers' craft knowledge as their having relatively stable notions of what outcomes they see as desirable but a substantial repertoire of possible actions.

### Hypothetical considerations

When considering hypothetical possibilities - the option(s) available for the teacher in different circumstances - teachers matched the students quite closely in their concerns: in both groups the proportion of actions to outcomes was 3:1. Thus whereas there is a sharp difference between students and teachers in their thinking about alternatives (embedded in actual practice) there is no such difference here when both are in reflective mode.

### Use made of past experience

It is clear that the students were not interested in the use teachers made of their past experience; of the three mentions, two are about the students' teaching. The teacher mentions are divided equally between using past experience to inform their teaching and using it to inform the conversation with the student. There is some indication that teachers are more likely consciously to think about an aspect of their past classroom practice if that did not work; all instances in relation to their actual teaching are of this one kind.

### How the teacher knows or understands

It is clear from the results presented in Table 6.26 that the students were not generally very interested in teacher knowledge and understanding; it is also evident that a minority of teachers were keen to talk about it irrespective of whether they were asked to.

## Actions, outcomes and factors - links

**Table 6.27 Number of links in each conversation**

Number of links in conversation	0	1-9	10-19	20-29	30-39	40-49	50+	average no. per conversation
student	0	18	7	2	1	0	0	9
teacher	0	2	8	9	3	2	4	28

As might reasonably be expected, the number of links in teacher talk is considerably greater than in student initiating moves. This difference between the two groups is underlined by the fact that, in spite of wide variation among the teachers, in every conversation the teacher made more links than did the student.

**Table 6.28 Number of links of different types in each conversation**

Number of links in conversation		0	1-4	5-9	10-14	15-19	20-24	25+	average no.
actions and factors	student	3	17	6	2	0	0	0	4
	teacher	0	4	11	6	5	1	1	11
actions and outcomes	student	2	20	6	0	0	0	0	3
	teacher	2	14	10	2	0	0	0	5
outcomes and factors	student	12	14	1	1	0	0	0	1
	teacher	6	13	6	3	0	0	0	4
actions and factors and outcomes	student	13	13	2	0	0	0	0	1
	teacher	0	9	8	6	5	0	0	8

The results presented in Table 6.28 reveal that the differences between the students and the teachers is least for the simple action-outcome link, and greatest for the most complex

three-way link of actions, factors and outcomes. These results also highlight teachers' interest in actions rather than outcomes.

## **Correlations among variables**

The primary purpose of the content analysis of the conversations between the student teachers and teachers was to investigate the hypothesis that, if students adopted the patterns of activity recommended to them then teachers would be more likely to reveal their craft knowledge. In order to explore the evidence in relation to that hypothesis, a correlational analysis was necessary.

### **Operationalising the hypothesis**

It had been in large measure for the purpose of translating the hypothesis outlined above into operational terms that the whole content analysis system had been devised. Nonetheless, a further step was necessary at this stage in order to define and select the precise variables which would be included in the correlational analysis. What variables that could be derived from the content analysis best reflected the ways in which the student teachers had been encouraged to act? What variables best reflected the researcher's defined conception of craft knowledge? Also, were there other variables about which the researcher wished to ask correlational questions?

The advice given to the student teachers had been largely in relation to their questioning, and therefore to the talk which had been coded as solicitation and reaction/solicitation moves. The attitudes reflected in their reacting moves were also relevant. It was therefore in relation to these three types of move - which of course accounted for most student teacher talk - that the 'independent' variables concerning student teacher activity were formulated.

In particular, the different elements of activity in which student teachers had been advised to engage were operationalised by the characterisation of each conversation in terms of the following student teacher variables:

### **Openness**

1. The proportion of student teacher solicitation and reaction/solicitation moves that had been categorised as open.
2. The proportion of such moves categorised as closed.

### **Specificity**

3. The proportion of such moves that had been categorised as concerned with an aspect of the specific observed lesson (level of specificity a)
4. The proportion of such moves categorised as concerned with an aspect of a lesson or lessons on another specified occasion (s) - level of specificity b - in addition to those categorised as of level specificity a.
5. The proportion of such moves formulated in terms of a generalisation directly related to an aspect of the particular observed lesson, and of which mention had been made - level of specificity c - in addition to those categorised as of level a and of b.

### **Type of Question**

6. The proportion of such moves categorised as type A ('why') questions.
7. The proportion of such moves categorised as type B ('how') questions.
8. The proportion of such moves categorised as type C ('what') questions.

## **Evaluation**

9. The proportion of such moves categorised as positive evaluation.
10. The ratio of reactions expressing agreement to the number of reacting and reacting/soliciting moves.
11. The total number of reactions categorised as positive affect.
12. The total number of reactions categorised as expressing qualification.

## **Probing**

13. The ratio of reaction/solicitation moves to solicitation moves.

In relation to the teachers, all kinds of talk in which they had engaged were seen as relevant to the extent to which they had revealed their craft knowledge. With the exception of those variables concerned with specificity (teacher variables 10, 11 and 12), all the 'dependent' variables were therefore formulated in terms of all teacher talk in all their conversational moves.

Working from Brown and McIntyre's (1993) account of the nature of teachers' professional craft knowledge, each conversation was characterised in terms of the following teacher variables:

## **Factors of which account is taken**

1. The total number of mentions of factors in teacher talk.
2. The average number of factors per teacher talk move.

## **Outcomes**

3. The average number of outcomes per teacher talk move categorised as a (short-term progress), c (desirable state of pupils or of pupil activity), d (desirable kind of lesson), or e (general or residual outcomes).
4. The average number of outcomes per teacher talk move categorised as a, c, or d.

## **Pedagogical actions**

5. The proportion of teacher talk moves in which mention was made of pedagogical action.

## **Links**

6. The total number of links in teacher talk in the conversation.
7. The average number of links per teacher talk move.

## **Mental activities**

8. The total number of mentions of those things categorised as mental activities in relation to teaching in teacher talk in the conversation.
9. The average number of mentions of mental activities per teacher talk move within the conversation.

## **Specificity**

Taking account of all teacher moves for which specificity was coded, that is all moves with the exception of reacting moves, each conversation was characterised by

10. The proportion of such moves that had been categorised as concerned with an aspect of the specific observed lesson (level of specificity a)
11. The proportion of such moves categorised as concerned with an aspect of a lesson or lessons on another specified occasion (s) - level of specificity b - in addition to those categorised as of level specificity a.
12. The proportion of such moves formulated in terms of a generalisation directly related to an aspect of the particular observed lesson, and of which mention had been made - level of specificity c - in addition to those categorised as of level a and of b.

### **Teacher knowledge and understanding**

13. The total number of those things categorised as how the teacher knows and understands.
14. The average number of such mentions per teacher talk move.

### **Use of past experience**

15. The total number of those things categorised as use of past experience.
16. The average number of such mentions per teacher talk move.

### **The correlational analysis**

The variables for inclusion in this analysis having been formulated, it was necessary to determine the precise type of analysis that would be appropriate. The first step was to find simple correlation coefficients between individual variables, and therefore the question to be asked was about the measure of correlation that was most appropriate for this purpose. Ideally, the Pearson product-moment correlation would be used - if its use could be justified - since it would take account of all the information available. Of the three conditions that need to be satisfied in order to use it, the first, that the variables should be

on an interval scale, was clearly met, since the variables were either simple counts or proportions derived from such counts. The second, that the distributions should not be highly skewed, was met in most though not all cases, as is apparent from the results already reported. The third condition, that there should be linear relationship between the two sets of variables, was checked visually and again appeared to be met in most cases.

As a further check on the appropriateness of the Pearson coefficient, the data were analysed using it and also using the Spearman Rank Difference coefficient. In general the results were very similar, although the Spearman analysis showed more moderately high correlations of around .30-.35. In these circumstances use of the Pearson results seemed justified and indeed safer.

The nature of any further analysis had to depend on the results of this basic analysis, and especially on the relationships *among* the student teacher variables and *among* the teacher variables. It was not clear in advance to what extent either the dependent (teacher) variables or the independent (student teacher) variables would be related to each other. The value of, for example, multiple regression analysis would depend on the strength of these inter-relations.

The findings in terms of the Pearson correlation coefficients are therefore presented and discussed in three successive sub-sections, showing correlations among student teacher variables, those among teacher variables and finally those between student teacher and teacher variables.

### Student teacher variables

The correlation co-efficients presented in Table 6.29 suggest first that those correlations between variables which are defined in related terms are consistent with those definitions. Open and closed questions, for example, are strongly negatively correlated, and, as expected, the levels of specificity (variables 3, 4 and 5) are strongly positively correlated.

**Table 6.29 Pearson product-moment correlation coefficients between selected student-teacher variables (only those correlations  $>.30$  or  $<-.30$  are presented)**

Student variables	1. open	2. closed	3. spec A	4. spec A+B	5. spec A+B+C	6. why questions	7. how questions	8. what questions	9. eval	10. agreement	11. positive affect	12. qualification	13. probing
1. OPEN % open questions	1												
2. CLOSED % closed questions	-.91	2											
3. SPECIFICITY A % in student initiating moves			3										
4. SPECIFICITY A+B %			.95	4									
5. SPECIFICITY A+B+C %			.74	.80	5								
6. 'WHY' QUESTIONS % type A questions			.61	.52	.43	6							
7. 'HOW' QUESTIONS % type B questions							7						
8. 'WHAT' QUESTIONS % type C questions								8					
9. EVALUATION % positive evaluation									9				
10. AGREEMENT No. agreements per reacting + reacting/soliciting move										10			
11. POSITIVE AFFECT No. per reacting + reacting/soliciting move											11		
12. QUALIFICATION No. per reacting + reacting/soliciting move												12	
13. PROBING Ratio rea/sol to solicitation													13

Similarly, the proportion of the residual type C (mostly 'what') questions is strongly negatively correlated with the proportion of type A ('why') questions, and to a lesser extent with type B ('how') questions. There is, however, no marked relationship between the incidence of type A questions and of type B questions. These correlations, which virtually follow from the definitions of variables, account for about half of all the correlations above 0.3. Nevertheless, the remaining high correlations are of considerable interest.

The findings in relation to the three types of student teacher questions are interesting, and in some cases, puzzling. Type A or 'why' questions are highly positively correlated with specificity A suggesting that questions seeking purposive explanations were predominantly focused on the particular observed lesson. There is, however, no connection between type A ('why') questions and degree of openness of the question. Type B ('how') questions, on the other hand, are unrelated to specificity, while the 'what' or residual questions - type C - are negatively correlated with all three measures of specificity. These correlations, together with those between positive evaluation and specificity, and between positive affect and specificity, indicate that three elements of student teacher behaviour seen as desirable - specificity of questions, 'why' type questions and positiveness - are associated, which in turn might suggest that the student teachers were more or less attentive to the guidelines as a whole. However, the other two elements of the guidelines, probing and openness, far from being associated with this cluster of correlations, are negatively correlated with each other, in addition to which probing is negatively correlated with specificity.

To throw further light on the suggestion that there might be a general tendency for student teachers to be more or less attentive to the guidelines (but not in all respects), a principal components factor analysis was carried out on the student teacher variables. According to the Kaiser criterion of significance (eigenvalues  $>1$ ), five factors were significant. Varimax rotation did not lead to a very different or clearer picture, so it is the unrotated factors which are shown in Table 6.30.

The first factor, accounting for one third of the total variance, confirms the suggestion of a general tendency to conform more or less with the guidelines, and also offers very clear confirmation that this tendency does not extend to the openness of questions and that it incorporates a tendency *not* to probe. Of course, the size of this factor might be seen to be 'artificially' enhanced by the inclusion of three measures of specificity, but it extends well beyond specificity in its scope.

The second factor, accounting for 20% of the variance, is overwhelmingly concerned with openness and closedness, two important variables that have minimal loadings on the first factor.

Factor 3 is interesting in its opposition of positive evaluation and positive affect to type A ('why') questions and probes, suggesting how real is the danger that was emphasised in the guidelines of 'why?' being interpreted by those asking the questions as a search for justification, not a search for explanation.

Factors 4 and 5 account for relatively little variance and it seems difficult to interpret them in any illuminating way.

The factor analysis results are thus consistent with the most obvious interpretation of the results from the raw correlations. In particular, they suggest that there is a factor concerned with more or less conformity to the general guidance offered, but that such a factor excludes openness and probing.

**Table 6.30 Principal components analysis for student teacher variables**

Student teacher variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1. open	0.07	- 0.93	0.08	- 0.21	0.18
2. closed	- 0.12	0.89	- 0.24	0.28	- 0.05
3. specificity a	0.92	0.12	- 0.05	- 0.02	0.18
4. specificity a + b	0.90	0.16	0.03	0.09	0.16
5. specificity a + b + c	0.83	0.34	0.18	0.24	- 0.01
6. type a questions	0.66	0.15	- 0.53	- 0.41	0.10
7. type b questions	0.40	- 0.43	- 0.09	0.52	- 0.16
8. type c questions	- 0.79	0.17	0.51	0.08	0.01
9. positive evaluation	0.14	0.36	0.63	0.21	0.46
10. reactions-agreement	0.45	- 0.31	0.01	0.36	- 0.36
11. reactions positive affect	0.48	0.04	0.46	- 0.52	0.13
12. reactions qualified	0.11	0.47	0.18	- 0.42	- 0.64
13. probes (rea/sols)	- 0.54	0.26	- 0.56	- 0.01	0.39
Percentage of Variance Accounted for	31.9	20.3	11.4	9.8	8.5

Teacher variables

As with the student teacher variables, certain correlations are high almost by definition. Thus the correlations between the different but overlapping measures of the frequency of **outcomes** mentioned, and again between measures of **specificity** of talk, come into this category. For activities with relatively low frequency, this is also the case where both total frequency in conversation and frequency per move are included as variables: this is the case for **mental activities**, for **teacher knowledge** and for **past experience**.

For more frequently occurring phenomena such as links and factors, however, the total and average frequency variables tend not to be positively correlated. Indeed, they appear

to be related to quite different sets of variables. The three variables defined in terms of total numbers - of links, factors and mental activities - are all highly correlated with one another, and negatively correlated with the proportion of moves in which pedagogical actions were mentioned. It seems that perhaps the more moves there were in a conversation, the more there would be of most things: links, factors, mental activities and moves in which there is no mention of pedagogical actions.

Of greater interest, however, are the correlations among variables defined in terms of proportions and averages. There are strong patterns of inter-correlation among measures of outcomes, of specificity, and average numbers of factors, links, mental activities and pedagogical actions. Such associations seem to point to the existence of a general craft knowledge factor within teacher talk.

The four variables concerned with past experience and with how the teacher knows or understands show no close connection with any of the other twelve teacher variables.

Again it seemed appropriate to explore these interconnections among variables by conducting a principal components analysis. According to the Kaiser criterion, six significant factors were extracted, as shown in Table 6.32. As for the student teacher factors, Varimax rotation of the six teacher factors did not produce any significantly different patterns and therefore is not reported here. The two smallest factors again offer no apparent illumination, while the only variables with significant loading in Factors 3 and 4 are how the teacher knows and understands, and past experience respectively, variables which are confirmed as being quite distinct from the others. The discussion therefore focuses on Factors 1 and 2.

**Table 6.31 Pearson product-moment correlation coefficients among selected teacher variables**

Teacher variables	1. Total factors	2. Av. factors	3. A, C, D, E	4. A, C, D	5. ped. act.	6. no. links	7. av. links	8. no. m.a.	9. av. m.a.	10. spec a	11. spec a+b	12. spec a+b+c	13. teacher know no.	14. t.k. average	15. P.E. No.	16. P.E. average
1. Total factors	1															
2. Average factors		2														
3. Outcomes A, C, D, E		.50	3													
4. Outcomes A, C, D		.58	.89	4												
5. Pedagogical actions		.44	.44	.42	5											
6. Number links		.94	.44	.42	.56	6										
7. Average links		.85	.62	.60	.56	.53	7									
8. Number mental activities		.47	.62	.60	.56	.53	.44	8								
9. Average mental activities		.38	.62	.60	.56	.53	.44	.46	9							
10. Specificity A			.52	.51	.38	.38	.38	.46	.95	10						
11. Specificity A+B			.56	.52	.41	.41	.41	.46	.95	.84						
12. Specificity A+B+C			.50	.50	.39	.39	.39	.46	.75	.84	.12					
13. Teacher knowledge - number												13				
14. Teacher knowledge - average												.77	.77			
15. Past experience - number												.77	.14			
16. Past experience - average												.83	.15	.83		
												.83	.16	.83		

**Table 6.32 Principal components analysis for teacher variables**

Teacher variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
1. total factors	0.14	0.87	0.11	-0.36	-0.01	0.24
2. average factors	0.71	0.0	0.06	-0.36	-0.09	0.49
3. outcomes - A,C,D,E	0.87	-0.06	-0.11	0.01	0.25	-0.03
4. outcomes - A,C,D	0.83	0.0	-0.10	0.02	0.21	0.13
5. pedagogical actions	0.47	-0.73	-0.17	0.08	-0.06	0.15
6. total links	0.13	0.90	0.14	-0.28	-0.04	0.17
7. average links	0.78	-0.27	0.06	-0.20	0.03	0.44
8. total mental activities	0.35	0.56	-0.03	-0.18	0.38	-0.54
9. average mental activities	0.57	-0.23	-0.19	-0.80	0.6	-0.32
10. specificity A	0.72	0.19	0.26	0.49	-0.17	-0.11
11. specificity A+B	0.75	0.20	0.27	0.49	-0.18	-0.12
12. specificity A+B+C	0.71	0.23	0.11	0.33	-0.43	-0.10
13. total how the teacher knows	-0.25	0.07	0.86	0.16	0.31	0.54
14. average how the teacher knows	-0.30	-0.40	0.73	0.13	0.34	0.15
15. total past experience	-0.35	0.58	-0.27	0.49	0.24	0.34
16. average past experience	-0.29	0.22	-0.43	0.66	0.35	0.30
Percentage of Variance Accounted for	32.5	20.0	11.4	10.8	7.9	7.5

Again the factor analysis would appear to confirm the findings from the simple correlations. Dominating Factor 1, which accounts for a third of the variance, are average number of factors, outcomes, average number of links, specificity, average number of mental activities and pedagogical actions; the combination of these variables suggests that Teacher Factor 1 is a general craft knowledge factor.

Factor 2, representing 20% of the variance, is concerned with total number of factors, number of links and number of mental activities, indicating that it is a length of conversation factor.

### **Correlations between student teacher and teacher variables**

The central hypothesis is that teachers are more likely to articulate their craft knowledge in so far as student teachers question them in ways consistent with the guidelines they were offered. In so far as this hypothesis is interpreted as being about correlations, it is the correlations between the selected student teacher and teacher variables that are crucial. It is of course important to avoid over-interpreting the data and implying that any causal relationships can be demonstrated: the design of the research - at least the quantitative component of it - allows no such inferences to be made.

It is the basic correlations between student teacher and teacher variables which are of primary importance. However, in the light of the findings reported with regard to correlations among student teacher variables and among teacher variables, it is to be expected that any strong patterns of correlation in terms of specific variables are likely to be reflected in correlations between the student teacher factors and the teacher factors. Table 6.33 reports the correlations between specific student teacher and teacher variables, and Table 6.34 the correlations between the first three student teacher factors and the first two teacher factors.

Table 6.33 shows that among the highest correlations are those between the levels of specificity of student teacher questions and the levels of specificity of teacher talk. Although perhaps predictable, this was far from an inevitable finding and it is important in itself. In addition, given the demonstrated connections both between student teacher specificity and other student teacher variables and also between teacher specificity and other teacher variables, it suggests a wider pattern of correlations between student teacher and teacher variables. Table 6.33 confirms such a pattern, with student teacher specificity

**Table 6.33 Pearson product-moment correlation coefficients between student-teacher and teacher variables**

	Teacher Variables															
	1. Total factors	2. Average factors	3. Out. A,C,D,E	4. Out. A,C,D	5. Ped. actions	6. No. links	7. Average links	8. No. mental activities	9. Av. mental activities	10. Spec. A	11. Spec. A+B	12. Spec. A+B+C	13. T.K. Total	14. T.K. Ave.	15. P.E. Total	16. P.E. Ave.
1. Open																
2. Closed						.38										
3. Specificity A							.40			.82	.80	.78				
4. Specificity A+B			.38							.79	.82	.82				
5. Specificity A+B+C		.44	.46	.45			.51			.63	.70	.86				
6. 'Why' questions										.55	.47	.48				
7. 'How' questions							.46			.40						
8. 'What' questions										-.72	-.60	-.51				
9. Evaluation																
10. Agreement	.40															
11. Positive affect	.43										.45	.41				
12. Qualification					-.51											.49
13. Probing										-.38	-.46	-.58				

S t u d e n t V a r i a b l e s

also being associated with teachers' talk about factors, outcomes and links, and with 'why' and 'how' questions posed by the student teachers, and positive affect on their part being variously associated with teacher specificity and talk about factors and links. The openness or closedness of student teacher questions seems to have very limited relationships with the selected teacher talk variables, while student teacher probing appears to be associated with a lack of specificity on the part of teachers.

Table 6.34 confirms and summarises these findings. Especially significant is the correlation of 0.73 between the student teacher Factor 1 (interpreted as general but not comprehensive conformity with the guidelines) and the teacher Factor 1 (interpreted as general articulation of craft knowledge). Because of the importance of this general relationship, the two sets of factor scores were plotted against one another, as shown in Figure 6.1. That figure shows very clearly a linear regression relationship between the two factor variables. In particular, there is no apparent tendency in these findings similar to that suggested by McAlpine et al (1988) for some teachers effectively to articulate their craft knowledge despite 'inappropriate' questioning from student teachers.

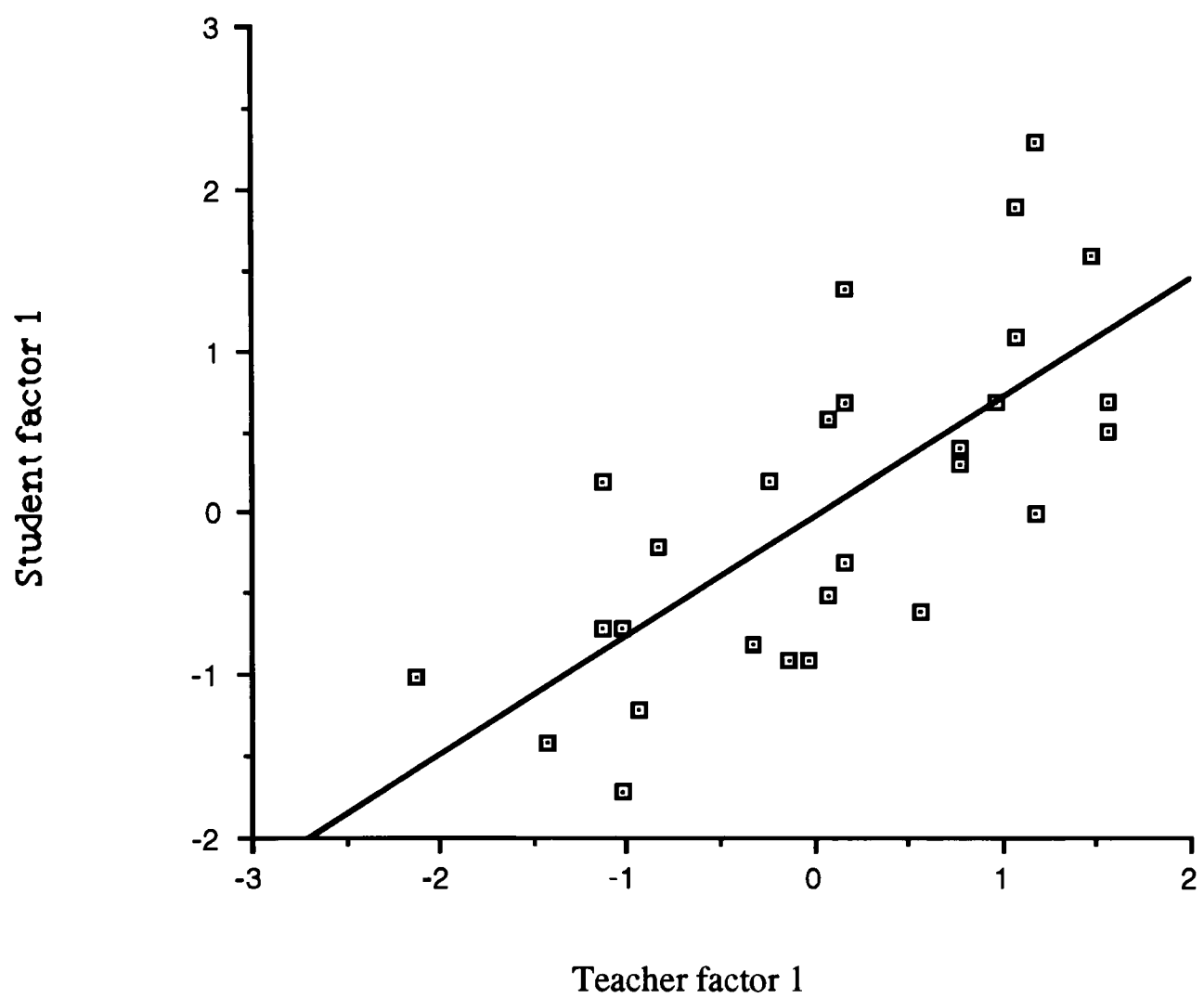
Thus, the correlational evidence, summarized by this high correlation between these major student and teacher factors and the linear relationship indicated in Figure 6.1, is strongly supportive of the central hypothesis with which this quantitative analysis is concerned.

Of the other correlations reported in Table 6.34, three are negligible, but the other two are possibly large enough to be of interest: they indicate, albeit very tentatively, that a positive attitude on the part of the student teacher, combined with a tendency not to probe or ask 'why' questions, may be conducive in a limited way both to teachers' articulation of their craft knowledge and to longer conversations.

**Table 6.34**

	Teachers - Factor 1	Teachers - Factor 2
Students - Factor 1	0.73	0.03
Students - Factor 2	0.09	- 0.08
Students - Factor 3	0.25	0.27

**Figure 6.1** Factor scores for teachers and students: teacher factor 1:  
student factor 1



## Conclusions

This quantitative part of the thesis has been based primarily on:

- (a) the fairly well elaborated concepts in terms of which the researcher offered guidance to student teachers about how they might engage in post-lesson conversations with experienced teachers;
- (b) the understanding of teachers' professional craft knowledge derived from Brown and McIntyre's (1993) conclusions;
- (c) the hypothesis that those student teachers who most fully followed the guidance given would be most likely to gain access to teachers' craft knowledge.

The detailed quantitative findings suggest many specific issues on which action might usefully be taken in any future attempts to refine the procedure used, and to clarify and elaborate on its purposes. However, many of the results can be summarised in terms of four main propositions:

1. The parts played by the student teachers in the conversations corresponded with varying degrees of closeness to the guidance they had been given. In general, they tended to
  - adopt a questioning role
  - be positive (or at least avoid being negative) about the observed teaching
  - ask follow-up questions (probes)
  - focus on the specific lessons

On the other hand, their activities corresponded less consistently with the advice to

- ask open questions
  - ask questions seeking explanations
  - ask follow-up questions to probe more deeply and fully the teachers' initial responses
2. In many respects, and especially in the kinds of outcomes they emphasised, the multiplicity of factors and links they discussed, and the concentration especially on pupil factors, the talk of the teachers tended to be similar to teachers' articulation of their craft knowledge as described by Brown and McIntyre (1993).
  3. A strong linear relationship was revealed between the extent to which student teachers tended broadly to follow the guidance offered and the extent to which the teachers with whom they engaged in the exercise appeared to articulate their craft knowledge.
  4. The readiness of student teachers to follow certain aspects of the guidance offered was **not** statistically related to teachers' apparent articulation of their craft knowledge; in particular, **openness** and **probing** were not positively correlated with such articulation. It is perhaps significant that these were two aspects of the suggested pattern of questioning which student teachers seemed least inclined to follow in the intended ways.

## **Chapter Seven**

### **Interviews with the interns: analysis of data**

#### **Introduction**

The purpose of this chapter is to present the findings from the semi-structured interviews carried out with the stratified random sample of twenty one interns.

As outlined in Chapter Three steps had been taken to arrange for interns in three of the curriculum areas - English, history and mathematics - each to engage in observation and follow up discussion with two teachers as an integral part of the curriculum programme; the intention was to help the interns get access to teachers' craft knowledge in a way that was relevant to their self-evaluation.

In the interviews, the researcher was seeking the interns' accounts, evaluations and views of their experience of observation and follow up discussion with teachers. However, their engaging in the procedure had been construed by the researcher as getting access to experienced teachers' craft knowledge, and the interns were familiar with this concept through lectures, seminars and written materials, but there had been no attempt to persuade them to adopt the language of the researcher. There was, therefore, a possible tension between the interns' way of thinking and the researcher's purpose, and it was for this reason that one of the questions asked of them was about the ways in which they construed what, if anything, they learned from engaging in the procedure. In order to ascertain how the interns saw the procedure in relation to other ways of learning from teachers in terms both of what they learned and its effectiveness, a further question focused more generally on their experience of learning from teachers during the PGCE year.

Although the interviews were conducted in a conversational, semi-structured way, with freedom for the student teachers to develop their talk in whichever direction they chose, in practice they kept their talk very much within the framework of the questions asked, and talked about very little other than learning from experienced teachers. Since they had each, as asked, conducted observations and follow up discussions with two teachers, their talk generally ranged across both these conversations. (Any apparent contradictions between different quotations from the same student teacher in this chapter are almost certainly to be understood as resulting from different experiences in working with the two teachers.)

In the final part of the interview the interns were presented with some ideas which the previous year's study had tentatively suggested could be barriers to the success of the procedure, ideas which were couched in terms of statements to which they were asked to respond. Except in those cases where interns had spontaneously talked about these issues during the course of the main part of the interview, the interns were presented with the following statements:

- You (as a student teacher) can only learn, or learn largely, from a teacher whose style is similar to your own.
- Experienced teachers' knowledge that is useful for you can be revealed when they are talking about your teaching.
- As a beginning teacher you can understand experienced teachers' teaching through observation: observation with follow up discussion is not necessary.
- Learning from experienced teachers' knowledge and expertise is valuable only in so far as you can get hold of generalised rules or recipes that you can apply to your own teaching straightaway.

The main findings from the interview data, analysed according to the procedures described in Chapter Four, are presented under the following thematic headings:

- reasons for engaging in the procedure
- opportunities to engage in the procedure
- intern notions of what they had been asked to do
- perceptions of the observed lesson
- intern perceptions of how the teachers reacted
- difficulties experienced
- reactions to, and use made of, teacher talk in the follow up conversation
- other ways of learning from experienced teachers
- responses to statements presented by the researcher

### **Reasons for engaging in the procedure**

It is clear that the interns engaged in the procedure because it was part of the self-evaluation process which in turn was an important and assessed component of the PGCE course. Thus, even those interns who did not follow the suggested guidelines - either through lack of understanding or because they found them unhelpful - did observe two lessons and have follow up conversations with the respective observed teachers. Within

this frame of extrinsic motivation, the interns' reported reasons for choice of foci and of teachers for the observation and discussion are worthy of some attention.

That the interns took seriously the self-evaluation is evinced by the extent to which their chosen foci for observation emanated from their appraisal of their teaching, in particular on an aspect (s) of their practice that they wished to improve. A typical comment supporting this point is:

I was focusing on ... pupil-pupil discussion, and what I've been trying to do - because I feel that my own teaching is not right, I'm still not using this style of teaching that will maximise learning, and I would say pupils could learn so much more than when we're investigating mathematics. Or I'm using discussion at the wrong point of the day... so I was looking at, basically styles of teaching - how can I maximise the learning process? This is what is going on in my mind - what is appropriate in particular circumstances and particular learning situations? (intern A)

For some of the interns the choice of teacher to observe was straightforwardly governed by the nature of their chosen focus; they approached a teacher whom they regarded as especially skilful at that aspect of teaching on which they were focussing. An intern for whom this was the case, explains her choice of teacher in the light of her concern with classroom control and discipline:

She's got very good classroom control. She can get absolute silence in the class. She's always got her eye on everything that's happening. .. I'd seen her with her third years before displaying that kind of strength (intern D)

For another intern it was a case of finding an appropriate teacher outside of her subject specialism as she 'wanted to see different things and different subject areas, and see whether the same sort of things were motivating kids'. Below is her account of how 'a week or two in advance' she set about finding a teacher to observe:

I asked a teacher who had been recommended by another intern, because he was described as a lovely teacher and because I suppose I knew him off-hand and felt him to be a very nice person, and I thought he was the kind of guy who would motivate and interest and involve everybody in his class. (intern H)

Virtually all of the interns, however, turned to teachers within their respective host departments.<sup>1</sup> Such decisions were taken for a variety of reasons. To begin with it was easier to arrange to carry out what they saw as a 'demanding and elaborate' procedure with teachers whom they both knew and knew to be approachable. For a minority of interns this resulted in a feeling of *deja vu*; 'I knew her well enough to know what she was going to say,' was one intern's comment on her mentor. Most interns, however, saw it as an opportunity to delve further into the expertise of a teacher with whom they were familiar, as is illustrated in the following comments:

She (the teacher) is positive and always is, and at times I thought I could have hated them (the class). They really didn't want to learn and hated history... I couldn't understand why they didn't respond, and she has had massive experience in teaching those kind of classes. She understands them very well and feels an incredible amount of sympathy for kids of that sort of mould and I didn't feel it and begin to understand it or get inside their heads. (intern I)

For most of the interns then the choice of teacher came from a mixture of expediency and sincere interest in, and admiration for, aspects of the teacher's expertise. Their reasons for engaging in the procedure as a whole are less complicated, and are best summed up by the intern who explained that they 'had to do it' (intern E).

## **Opportunities**

The interns were asked specifically about opportunities to observe and have an audio-taped follow up conversation with teachers. Although all save one of them had succeeded in doing this on two occasions, for many it was not a straightforward exercise. In their talk about setting up the observation and discussion, two topics recurred; time constraints in school and teacher co-operation.

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<sup>1</sup> Of the 41 observations with discussion reported by the interns, 37 were with teachers within host departments.

## Constraints of time and space

Intern talk is full of references to teachers as 'busy'. Typical of their comments is the following:

All through this year to find the time to talk to them has been almost impossible, and when you have talked to them after a lesson it's been very rushed comments.(intern N)

Interns were also mindful of their own busy schedules and in their description of the time it took to make arrangements a certain amount of resentment can be sensed. It was a 'performance' said one explaining that it required a great deal of time and planning on the intern's part.

Normal time constraints were exacerbated by the elaborate nature of the procedure, demanding as it did discussion with the teacher both before and after the observed lesson. Not only was what they were being asked to do time-consuming, it was also complicated since it necessitated finding a time when both intern and teacher could be free of all other commitments. In the words of one of the interns:

It's difficult to get the time and the right situation and the right circumstances, surroundings etc., in which to do the discussion afterwards, to get the maximum benefit from it. Teachers I've found quite hard pressed and I found I have been as well. (intern A)

Virtually all of the interns managed to make arrangements that included having a quiet place away from others for the conversation following observation. The importance of privacy for such conversations is highlighted by the frustration articulated by the two interns who had to have their respective conversations in a busy staffroom:

People were milling around and marking books...People kept coming up and it was noisy, and I was cross-eyed with anger about that. (intern P)

and

It was very noisy with people coming and going, so that was very difficult.  
(intern B)

The difficulty of finding both the time and a suitable room for the follow-up conversation led a number of intern/teacher pairs to meet before or after the official school day to talk about the observed lesson. Such arrangements are also an indication of the flexibility that some interns encountered in their relations with teachers which leads on to the second theme, teacher co-operation.

### **Teacher co-operation**

The extent to which interns saw the success of the arrangements as dependent on teacher cooperation is very marked in their responses; indeed, for a number of interns one of the criteria in deciding which teachers to observe was the teacher's 'approachability'. Most interns found the teachers 'genuinely wanted to help' and the experience of the intern who found that 'people weren't keen to be interviewed and taped and listened to for the people of the Department of Education' (intern F) was singular. Such was their eagerness to help the interns that some teachers took account of the interns' concerns when planning the lesson to be observed as the following comments indicate:

The teacher knew what the focus was, so planned a lesson which would be appropriate. (intern A)

and

I told her exactly what I was interested in so she specifically did a lesson on what I had chosen - whole class discussion (intern M)

## **Intern notions of what they had been asked to do**

The researcher wanted to know both what students saw themselves as having been asked to do and also what they saw themselves as having done. It was the latter that was emphasised in the questions asked, in the belief that student teachers would be likely in the course of their accounts to explain any divergence on their part from what they understood to have been asked of them. It was important to avoid asking questions which might encourage them subsequently to shape their accounts of what they did in the light of what they saw themselves as having been asked to do. Thus, the concentration at the beginning of the interviews on questions of this kind - 'Could you start off by telling me about whom you observed and the reason for choosing that teacher?' and 'What happened in the lesson, and how did you observe?' - was to ensure that subsequent questions and responses would be rooted in what actually happened. Such questions elicited a great deal of descriptive data; the transcripts contain detailed accounts of procedures followed, the lesson or lessons observed as part of the procedures and the responses of the teachers in the interviews following the lessons.

The interns were clear that they were being asked to carry out a focussed observation of a teacher with whom they would have a follow up conversation about the observed teaching as soon as possible after the lesson. From their reports it is also evident that they were familiar with the guidelines suggesting how the follow up conversation might be conducted, as the following typical comments indicate:

I remembered about asking open questions, and being specific and not saying things like, 'Why didn't you do such and such?' (intern D)

We'd been told to ask very specific questions getting at the reasons behind the teacher's decisions in the lesson (intern L)

Asking specific questions about the particular observed lesson was an element of the guidelines to which many interns referred, even to the extent of recalling some of the questions they had asked, some of which were:

Why did you leave that group till last? (intern E)

and,

Why did you let them stay in that position on the floor ? (intern K)

Interns were also conscious that the conversation they were expected to engage in was different from other conversations with teachers, as is illustrated in the following comments:

....I knew we'd been advised to stick to a particular lesson to get more out of it, and that it was important to let the teacher do most of the talking (intern N).

and

What we'd been told was that this was a different way of talking to teachers, and they'd have different things to say (intern T)

Their understanding in this respect is also evident in the number of comments made about the formality of this conversation in comparison with the ones they normally had with teachers. This aspect of their accounts is discussed more fully in the section focusing on the difficulties experienced by the interns.

It was also common to find among interns an awareness of the possibility of causing teachers to adopt a defensive stance in the conversation through insensitive questioning. For one of the interns this led to an avoidance of questions about the observed lesson after the teacher had expressed herself very disappointed with it:

...I was a bit reluctant to say too much about what happened in the lesson because she'd go on the defensive (intern M)

Awareness of the need to avoid putting teachers in a position whereby they might justify rather than explain their teaching is also seen in the comments of an intern who felt 'free'

to ask detailed questions about aspects of the observed teaching because 'it was something she was good at so there was no risk in asking her questions about how she did it, because it was all very positive things' (intern D).

As suggested above the interns as a group had a shared view of what they were being asked to do; it is on examining their accounts of what they actually did that the differences among them become apparent. The variation in practice is such that it is possible to group the interns in the following four ways:

1. Those who understood the guidelines and were apparently successful in following them.
2. Those who understood and attempted to follow the guidelines but with a limited degree of success.
3. Those who misunderstood the guidelines.
4. Those who consciously rejected all or some of the guidelines, and modified the procedure to suit their individual purposes.

To judge by their own accounts, some interns managed to use the guidelines in an exemplary way and reaped the appropriate rewards. One such intern had as her focus discussion lessons, describing her own attempts at them as 'total disasters', but knowing her mentor to be particularly skilful at them. In accordance with the guidelines, the observed lesson was followed by a lengthy discussion held in a private office. According to the intern, her mentor, in responding to her questions about his actions during the observed lesson, was able to explain 'what he had done and why he had done things, so that I could understand', with the result that her 'whole discussion lessons changed' (intern G).

Those interns falling into the second group encountered the kinds of difficulties discussed later in this chapter: the unnaturalness of the procedure; their perceived inadequacies as interviewers; and the attitude and behaviour of the teachers.

There were a number of interns who talked confidently of having 'found the guidelines very helpful' and then in reporting what they had done revealed that they had misunderstood them. One such intern explained that 'the conversation was of a general type and took place two weeks after the lesson' (intern I), while another commented that:

...it was a two-way conversation because it ended up with us discussing my own frustrations about classroom management (intern O)

The largest group comprised those who modified the procedure, the two most common reasons for such modifications being a desire to have a more natural conversation with the teacher, and an interest in broad concerns such as the teacher's overall philosophy:

...a lot of what you gave us as a formalised way of presenting something and actually getting concrete answers is there for you to use, but if you actually get a teacher who you actually get on very well with, those kinds of things tend to come quite naturally and you don't tend to have to use such a formal thing....so with Paul (teacher) there was none of this 'Can you tell me a little more about?' He knew what to focus on. The important, the useful point is actually telling them what you want to focus on so that they're ready to talk to you about that. (intern Q)

...it was a really broad question that was really productive because it got him to think about what he was doing and also help me to pick up on other things that I might not have done from the kinds of detailed questions I was asking (intern H)

Within each of the four broad categories outlined above there is, of course, more subtle variation, not least because a number of interns, while remaining true to their respective category, made changes to the way in which they conducted the interview with the second teacher. In virtually every case, changes were made to accommodate the teacher's personality:

... obviously it's judging the person you're talking to - it's important to make them feel at ease. With Kate (mentor) I find she's very relaxed and I could ask her anything, and I didn't have to worry what I said, whereas

when I did the other one, with Mary, I was much more sort of polite and careful because she's different, much more cold ... (intern M)

## **Perceptions of the observed lessons**

For a minority of the interns the lesson was a faint memory, and in describing it they could remember little more than such things as 'it was third year, low ability with lots of problem kids in it, and they were doing (pause) - I can't remember' (intern C). Most of the interns, however, could remember the lessons observed in some detail and their talk about them was marked by two characteristics in particular.

First they tended to talk about the teachers, referring to the pupils only in so far as their activities illustrated the teachers' achievements.

She (the teacher) pitched it just slightly above their heads all the time so that they were having to think to be able to answer her all the time. And she must have used about ten different activities throughout the lesson, things like the weather, counting, things like that. And she moved from one activity to the next beautifully smoothly, as if there was no transition really... They were all so keen to get it right, and really enthusiastic. (intern B)

(Seeing the teacher) taking what they (the pupils) were saying and carrying it further, or using their ideas to then prompt somebody else... watching how the kids responded to it, because nobody seemed to flinch or be uncomfortable. Everybody was really willing to put forward their ideas - he didn't really have to prod anybody. (intern G)

The second noteworthy feature of intern talk of the lessons is the extent to which they evaluated them. Most of such evaluations were positive; comments such as 'a bit boring after a bit' (intern E), and 'I thought it wasn't a very good lesson' (intern F), were rare. Far more typical of the judgements passed are the following:

wonderful, an incredible, bold lesson (intern G)

the children were really involved - an exciting lesson (intern F)

absolutely superb - it was really exciting all the way through (intern B)

they are usually difficult children, but they just sat there, they did their work, they joined in. It was just a kind of perfect classroom atmosphere. (intern R)

Far from being eager to criticise the teaching they observed, the interns were inclined to be very positive in their judgements, even on those occasions when the teacher was dissatisfied with the lesson, as can be seen in the following comment:

And she (the teacher) was very critical of herself for having done it (leading the lesson from the front) but actually in terms of what they, what took place, it just seemed to work incredibly well. (intern S)

It is, of course, possible that the interns' professed enthusiasm was, in fact, an attempt to tell the interviewer what they knew she would welcome hearing. Although such considerations might have had some influence on their responses, it seems implausible as a general explanation, not least because the interviewer had gone to great lengths to explain to the interns that the most valuable way in which they could help her was to be honest in their responses, and also because they did not appear to be slow in voicing criticism of the procedure.

### **Intern perceptions of how the teachers reacted**

As indicated above in the discussion concerning the experiences of the interns in setting up and carrying out observation with discussion, they tended not only to approach those teachers who they thought were likely to be co-operative, but also, when carrying out the procedure, to be at pains to avoid making the teachers feel discomfited in any way. It is not surprising, therefore, to find that the interns perceived the teachers as finding the experience tolerable. A widely-held view was that 'teachers like talking about things afterwards' (intern O). A number of interns were also struck by what they saw as the teachers' surprise at being asked to talk about aspects of their teaching which they themselves saw as unremarkable: intern S described the two teachers she approached as

'embarrassed' when she identified the skills on which she wished to focus: 'they just thought it was something they did...part of their teaching.'

In a number of accounts there is the suggestion that the teachers were agreeably surprised by their experience of observation and follow up interview. That they had cooperated with the interns was interpreted by the latter as saying more about their willingness to help them, than about their confidence or belief that it would be pleasurable for them and useful for the interns.

### **Difficulties experienced**

Intern responses to questions about any difficulties they encountered in carrying out the observation and follow up conversation in accordance with the guidelines, fall unsurprisingly into three broad categories: difficulties stemming from the procedure; from the interns themselves; and from the teachers.

#### **The unnaturalness of the procedure**

All of the interns were conscious of what they saw as the unnaturalness of the procedure. It was planned; observation was carried out with a specific, agreed focus; there were detailed suggestions about the way to conduct the follow up conversation with the teacher; and the conversation was to be audio-taped. All these ingredients gave to this particular way of engaging with teachers a much greater degree of formality than was usually the case. One or two interns welcomed what they saw as 'formalised learning', arguing that in 'casual chats after lessons' not only was there no time in which to think of questions one might want to put to the teacher, but also 'you're not going to take special note of what was said and take it in' (intern H). For most of the interns, however, far from giving rise to 'a deeper level of concentration' (intern P), the formal nature of the procedure was a source of great discomfort:

(It) felt very contrived suddenly to sit down and talk to somebody you've been talking to for nine months and you have to put on this tape. (intern K)

A number admitted that they found it 'difficult' because they were 'unsure actually how to approach it ' (intern R), while for others it was that they were not used to doing it. Their attempts to follow the guidelines led to a situation that was negatively described as 'stage-managed', 'contrived', 'artificial', 'unnatural', 'too restrictive', and 'too ritualised':

It's such an unreal situation that at times you are just going through' what do I need next for this point?' I thought it very difficult in that I was constantly aware of, you know, the criterion you said about 'don't ask closed questions.' I had that going through my head all the time. (intern R)

I was conscious of phrasing the questions correctly and I wasn't quite sure of all the questions I wanted to ask her. (intern T)

It was over-polite - minding my ps and qs - and I just couldn't do that. (intern L)

In some cases the 'unnaturalness' came from attempts to follow the procedure when in the intern's opinion there was little of merit in the observed lesson. As one intern explained following a lesson in which the teacher 'hadn't performed anywhere near her best', he found it difficult to ask questions about the observed teaching as 'we weren't that interested in what we were talking about' (intern F). Above all, however, the perceived unnaturalness came from the fact that this was a new experience for most interns who during the year had not had opportunities to have extended conversations with teachers following observation; the procedure did not fit in with the relationships that had developed over the time they had been in school.

## **The interns**

A number of interns attributed what they saw as disappointing outcomes to their own inadequacies as interviewers.' I didn't phrase the questions particularly well', said one (intern P), while another explained that:

my own questions limited her answers often... they weren't interesting so you couldn't expect her to say anything particularly new or interesting without me pushing sometimes and I didn't always know how to push it on. (intern S)

Another intern found that:

I almost answered my own questions and then asked them like, 'I noticed you always slow down as you explain things and then ask a lot "Does everyone understand?"' And this sort of thing, you know where it was almost self-explanatory what was going on anyway. I had such a lot of yes/no questions. (intern E)

In addition, many of the interns who were pleased with the outcomes of the observation and discussion, made reference to their shortcomings as interviewers in a situation that was new to them.

## **The teachers**

Many interns then, talked of the difficulties they experienced in attempting to follow the guidelines, but for most of them their perceived inadequacies as interviewers and the unnaturalness of the situation were mitigated by the teachers' attitude and behaviour. In their talk of the importance of the part played by the teachers in the success of the conversation, interns tended to highlight one or a combination of the following features: the teacher's personality; their capacity for reflection on their own teaching; and their familiarity with, and interest in, working with student teachers and the Internship scheme. Teachers who 'made it easy' are variously described as 'a great person who

produced open arms even when the questions weren't good' (intern K), or 'very secure in his teaching...chatty and talkative' (intern N), or as follows:

He was out to analyze his own teaching anyway... he thought this was a brilliant idea...The questions he didn't find them difficult. There are some who would say, 'I don't know why I did that sort of thing'. (intern G)

and,

She's the sort of teacher where you'd have to ask her a pretty ridiculous question or a pretty inappropriate question for her to give you an answer completely off the point. She generally very quickly understands what you are talking about and talks right to the kernel of the issue and she doesn't need a lot of probing. (intern I)

One of the history interns, in comparing her two attempts at engaging in the procedure, attributed the success of the first to the fact that her mentor was 'well into the scheme (Internship)...and welcomed talking about her teaching' (intern M).

For the small minority of interns who saw the teachers as the source of the difficulties they experienced, it was either because the teachers said too little or too much. In a number of cases, the teacher's perceived inability to articulate the thinking that had gone into the observed lesson was seen as exacerbated by nervousness at being audio-taped:

(The teacher) was nervous and she doesn't feel happy about us talking on tape ...and she was much less talkative than Kate (the mentor interviewed earlier). I just found it quite difficult to get what she was saying...I'd ask her questions and I felt she didn't want to develop much. She couldn't really say it, like outright. (intern M)

Interns were equally frustrated by mentors who were garrulous:

...And he kept talking and talking and if there was a point in there - quite often it was just shrouded in lots of words and the points were kind of lost, or you know, not that many points were being made (intern R).

## Reactions to and use made of what the teachers said

### Criteria used in evaluating teacher talk

In their accounts of the conversation following the observed lesson the interns tended to evaluate the teacher talk in relation to how much they felt they had benefitted from the exercise. For every intern, therefore, the starting point in making judgements about what the teacher said was to ask themselves the simple question, 'Did I get what I wanted?' Since there was variation among the interns as to what constituted a successful conversation, it follows that what was frustrating for one intern might well be welcomed by another. So, for example, conversations in which the teacher talked about specific aspects of the observed lesson - a feature of a successful conversation according to the guidelines - were seen as unhelpful by those interns who were seeking more generalised talk, as the following example indicates:

She (the teacher) tended to skim over the things that I thought were important, the very big issues, and get back to things that were more related to that lesson. (intern J)

On the other hand, there were interns who were disappointed with generalised talk:

(Their talk) was still on a very general level, and not down to the actual basics, the technical aspects of how they actually went about doing that (intern R)

The other questions posed by the interns when deciding on the value of the teachers' talk were:

- Could I have accessed this knowledge by engaging with teachers in other more straightforward, less time-consuming ways?
- Am I learning about the reasons behind the teachers' actions, and getting access to their theories about their teaching?

For some interns the talk of teachers with whom they had worked very closely left them with what one of them called 'a feeling of rehearsal' (intern I) as they felt they had already heard what the teacher had to say, and they were thus disappointed that the time invested in the procedure did not pay dividends. In addition there were those who found that what the teachers had to say added nothing to their understanding of the teaching acquired through observing the lesson, and the discussion was therefore 'a waste of precious time', in direct contrast with those interns who in talking about what they had learned from the conversation made explicit mention of the fact that they 'wouldn't have known that just from observation.' (intern G)

The other yardstick by which teacher talk was evaluated was the perceived capacity of the teacher to go beyond a narrative account of the specific lesson: interns wanted the teachers to reveal their thinking behind the observed lesson, and when appropriate to call on their experience of other lessons. This point is exemplified first in the comments of an English intern comparing the talk of the two teachers with whom she carried out the procedure, and second in an extract from the report of a maths intern:

She (the first teacher) was able to articulate that development, how she had got to the point where she could work with the class in that way...What came out in the conversation was the way in which she had thought everything through - it didn't just happen - she'd thought very carefully how to set it up so she could get those particular elements in the lesson...(The second teacher) didn't know how to articulate, how to theorize about what he'd done very much, it was all very superficial. I didn't think I actually learned anything from the conversation that I hadn't worked out watching. (intern P)

(In the conversation) we took the lesson that I had observed and talked about that and then...he was very good because he would expand on it - 'I tend to do this in most lessons', or 'that was a one-off', 'I don't usually do that in a lesson', he would say. (intern G)

The value interns placed on the teachers' capacity to analyse their teaching is also seen in the comments of those interns who were disappointed with the conversations they had:

It was very difficult to tap into her knowledge...it's almost as if she was saying, 'Yes, well I just praise them,' almost as if it was a natural thing to

do, why she'd simply praise those pupils. She didn't really come up with the answers. (intern A)

They (the two teachers) weren't aware of what they were doing, it was just a natural thing to them. .. when I said to them ' When you first started teaching how did you feel about discipline, was it different?' And they went, 'Well, no I just always did it that way.' ..They must have learned through trial and error, through experience, but it was very difficult to get them to voice that...they just said things I was already aware of. (intern R)

### **Claimed benefits from engaging in the procedure**

It is right to point out that some interns - albeit a small minority - got little or nothing from engaging in this procedure with teachers, and that for a number of those who found the exercise valuable, one of the two conversations was seen as more useful than the other. As indicated earlier, the main grounds on which teacher talk was dismissed was that it was 'self-evident', 'undisciplined - away from the agreed focus', 'lacking depth', or 'not real'. Most interns, however, claimed to have gained something from at least one of their attempts at observation and follow up discussion, and it is to these claims that this chapter now turns.

There were three broad areas in which interns claimed to have benefitted, and they were:

- feeling reassured and more confident
- acquiring an enhanced understanding of teachers and teaching
- developing their repertoire of teaching strategies and skills

### **Feeling reassured and more confident**

In talking of affective benefits the interns distinguished between the feeling of well-being they experienced when, for example, the teacher's attitude or educational

aspirations and concerns resonated with their own, feeling reassured, and feeling encouraged that, given time, they would be able to teach in ways to which they aspired.

Typical of comments from those interns who saw in the teacher talk endorsement of their own ideas are the following:

(Although) a lot of the things they were coming up with were things that I had also thought of independently and put into practice... it was very important for me to have other people telling me that they do these things - without any prompting from me - and to know that other people are obviously recognising them as quite a useful thing to do, and in a way it makes you feel a bit more confident about the educational purpose of doing that sort of thing. (intern J)

(The teacher) sort of backed up a lot of ideas I had about discipline and different styles of teaching, things that I'd developed... over the year, and she sort of would often agree with, or she'd make perhaps more clear the ideas I'd had throughout the year. (intern C)

Reassurance came chiefly from teacher talk about the realities of teaching and their acknowledging that even for experienced practitioners 'not all lessons work out as you want', which was welcomed by one intern as 'proof not to panic' (intern K). Another, pointing out that as a novice teacher 'you never know whether what you feel you ought to be aiming for is totally realistic', was reassured by the teacher's remarks that 'you accept that at any one time two or three might not be concentrating, as long as it's not the same two or three throughout the lesson' (intern D).

For those interns who were conscious of a large gap between their own practice and that of the teacher observed, it was encouraging to hear the teachers talk about the ways in which they had worked while striving to achieve fluency in their teaching. A maths intern, for example, who had 'felt completely inadequate' when observing a teacher of modern languages, because 'she was handling everything so well and very smoothly' found the follow-up conversation very helpful:

It was a real encouragement to know that when she started she used to write everything down in a handbook, and that she used to practise things, because it was like I could get to that stage. (intern B)

In another case, the teacher in talking about how he had worked to ensure that all pupils in his class were involved in classroom activities, revealed a knowledge of his pupils as individuals and of the class as a whole that the intern realised she could not be expected to have in the short time she was in school. In the intern's words:

It gave me some encouragement for the future, that once I knew the class well and knew how to respond to everybody, that I might have more hope of actually involving and motivating everyone. (intern H)

### **Developing understanding of teachers and teaching**

A significant feature of the interns' accounts of teacher talk and of what they got from such talk is the number of references to developing their understanding of teachers and of teaching. One intern described this as 'filling in the picture of the teacher's teaching', adding that from the conversation he got 'a broader view of what, as an experienced teacher, he thought was acceptable in the classroom..and which led to a good atmosphere' (intern A). For another intern, the teacher's rationale for the use of group work came as a surprise:

(The conversation was) useful in clarifying in a really good way exactly why she used group work and why she thought it was a valid teaching method, and with very different reasons from the ones I'd come up with which were all to do with social interaction, and hers were all to do with learning history and group work being particularly appropriate in history teaching. I hadn't thought of that.  
(intern J)

In some cases it was a question of having misunderstandings and misconceptions challenged by what the teacher said. A history intern, for example, firmly believing that there was a simple correlation between the teacher's personality and generating enthusiasm in the classroom, came to realise that 'it's not just how they come across, it's what activities they had planned and things like that.' (intern N) Another who, at the observation stage, had rejected the teacher's actions, explains how she came to modify her initial judgement:

We also spoke about her classroom rules and discipline - she has them all standing behind their chairs which I never do ...my gut reaction is I don't want them to do it, but when she explained to me why she does it - the lesson is beginning and it's a sign that they must stop talking about what they have been doing at the weekend, and now down to serious business - that makes sense...I can see that she has good reason for doing it. (intern I)

Notable in the reports is an awareness that it is possible to learn from a teacher's thinking behind actions taken in the classroom while neither wishing or being able to emulate those actions, a point supported by the following extracts:

I wouldn't have the same approach (to classroom management and discipline), I don't have the same personality. But I could see a pattern emerging in what he was saying about not confronting kids, about defusing aggression ... I could see a thread running through and a rationale behind it, and although I wouldn't do the exact same things, I could see that was a good line to follow. (intern O)

...You're not just going to be able to walk in there and do it the same way because you're not at the same stage, but ..you can see a route through so you know where you're going or where you want to go... (intern P)

This latter intern goes on to explain that what she found useful from the teacher's responses to her questions was not acquiring 'particular tricks of the trade', but realising that 'if you thought in that way you could with care eventually reach that outcome'.

For others, the teacher talk served both to remind them of the complexity of teaching and to illuminate aspects of it. An example furnished by a history intern aptly illustrates this point:

Through these discussions you do learn that good teaching is not mysterious, that it can be broken down, there is more than one reason for doing something and often very complex reasons... it broadens your knowledge of what particular reasons there might be ...(and that's) probably very useful as beginning teachers because you tend to see things very much in a one-dimensional way and in an obvious way ..(intern H)

## **Developing one's repertoire of teaching skills and strategies**

Since only a few interns reported being able to incorporate into their own teaching what they had learned from the teachers through observation and follow up discussion, it is tempting to conclude that for the majority the procedure proved unhelpful; such a conclusion would, however, be misleading. In addition to those interns who were not seeking or expecting to acquire specific skills, there were those who argued that they did not have the opportunity to try out their theoretical understanding of specific aspects of teaching gleaned from observation and discussion, as they did not have a teaching timetable which made such attempts appropriate, or they felt that, as one of the interns put it, 'a lot of that depends on having established the right kind of relationship with the class' (intern M). This latter group intended putting any such newly-acquired skills to the test when they were established in their first teaching posts. In the extract that follows, a maths intern exemplifies this point:

(The teacher's) techniques for making people concentrate and for bringing people back into the lesson were good...a lot of that seems to have to do with the relationship which she has already established with her class...I think you need to know them quite well before you can adopt that pattern...I will be able to use that six months from now. (intern D)

Those interns who did report having tried out specific skills acquired through engaging in the procedure claimed to have been successful in incorporating them into their respective repertoires; and worthy of comment is the excitement they expressed at this success. A maths intern, for example, who within two days of the conversation with the teacher tried out what he had learned about running a lesson based on pupil/pupil discussion reported that 'it worked absolutely - I was so pleased' (intern A). A further typical example is provided by an English intern who claimed to have learned about the importance of 'being absolutely clear about what you're going to do', in addition to finding out how to run an oral lesson:

I'd really thought about it, there was no half-heartedness about it - it was going to be an oral lesson and I decided I wanted them to work in groups, and I did the same as Jean (the teacher) ...It was brilliant! For the first

time we were doing group work, we weren't just talking in groups. (intern S)

For the small number of interns who did incorporate what they learned into their own array of teaching skills and strategies, the success was two-fold: as well as adding to their repertoires, they were reminded that teaching skills and strategies are learnable which as learner teachers they found very encouraging. The extract that follows vividly illustrates this point:

My whole discussion lessons changed. I did one after that (the observation and discussion) and the way it went was totally different from the way I had been doing it because I was taking all those things I had learned from him in my mind and trying to put them into practice...Every single thing he told me was of use...I saw it happening before my eyes...I did the same topic and started off the lesson in just the same way because I wanted to see whether it was me as a person that was getting it wrong or the questions I was using at the beginning were wrong...It wasn't me as a person that couldn't do discussion, it was the way the questions were phrased and how you went about it. (intern G)

## **Different ways of learning from experienced teachers**

In response to a broad question about the ways in which they had learned from experienced teachers the interns were very forthcoming. They talked at length - and in a number of cases with a fair degree of passion - about their experiences of: observing teachers; being observed and given feedback on their own teaching; teaching alongside teachers; going over lesson plans; and talking informally with teachers. It is under these headings that the following discussion is organised.

### **Observing teachers**

Most interns, while acknowledging the potential usefulness of observation, were dismissive of their own experiences of it, describing it as 'boring', 'pathetic', 'tiring', 'a waste of time', and 'a bit like being at school'. The most commonly offered explanation

of such judgements was that the period of observation had been concentrated at the beginning of the PGCE year when the interns felt they were ill-equipped to learn about teaching through observation as is illustrated by the comments below:

At the beginning of J (joint weeks) you go in there and you have no idea what's going on. It completely washed over me (intern E)

I tended to switch off and found it very difficult to focus. I didn't know what was going on (intern A)

Without having actually had any teaching experience I don't think you fully appreciate what's going on (intern C)

Added to this was their sense of frustration at being held back from engaging with the pupils in the classroom. 'I wanted to get in there and do it', said an English intern, adding that observation 'marked (her) off from the mechanics of the classroom' (intern P). This image of the bored, frustrated and puzzled intern sitting in the classroom is captured in the comment that:

I couldn't see what they were doing. Generally at the beginning you're just waiting for the bit where they say "Would you like to help? Go round?" And it didn't always come. (intern A)

It is interesting to note that the small minority of interns for whom the initial period of observation proved useful, tended to spend their time observing the pupils rather than the teachers. 'I spent most of my time making notes on the kids and drawing out a seating plan and so on,' remarked one such intern, adding by way of explanation that 'they were the ones I was scared of and the ones I would have to deal with.' (intern O)

In contrast with their generally negative appraisal of their experiences of classroom observation at the beginning of their time in school, such was the interns' eagerness to observe teachers once they themselves had had some experience of teaching that they expressed regret that there were not more opportunities for observation in the second half of the course. The interns were adamant that to benefit from observation 'you've got to notice things happening' (intern K), and that without teaching experience that was

impossible. The argument propounded by many interns that without experience of teaching, observation is for the most part meaningless - or as an English intern put it 'observation has no validity until you've done some teaching yourself' (intern P) - is far from straightforward; contained within it are a number of inter-connected themes. First, and most important, interns felt that with experience they had acquired sufficient knowledge and understanding of teaching to make sense of what they saw going on in classrooms, a point supported by the following quotation:

Now you're aware of what you're looking for and you're aware of what the craft of teaching is, and I think at the beginning of the course it was all a complete marvel to me. I was in complete awe of the teachers and what they were doing and felt 'How am I ever going to do these things?' Because they seemed to happen so naturally and automatically to teachers and I didn't think they would to me at the time... (now) you know what you're looking for and you know what you need to improve rather than just looking at it all and thinking 'Gosh, what the hell do I make of this? What do I take away from it?' (intern H)

Second, for observation to be valued it has to be seen as relevant to perceived learning needs: beginning teachers are quite properly overwhelmingly concerned with developing their expertise as classroom practitioners, and it is when they are able to focus on what they and/or others see as their individual needs as learning teachers that observation assumes a relevance hitherto missing and is therefore valued. This can be seen in the comments of the interns that follow:

Towards the end it was O.K., because I could relate it to my own teaching, and thinking, 'I'm not very good at that, how do they do that? Oh, they did it that way - maybe I'll try that.' (intern B)

(later) I knew what I was looking for...I was more confident that if I saw a teacher doing something in a way that I wouldn't want to I wasn't always thinking 'Oh, I must be doing something wrong', because I can appreciate now that there are different ways of teaching. (intern C)

In addition to suggestions that observation was of far greater value at the end of the year than at the beginning - a view shared by all those interviewed - a number of interns pointed out the limitations and dangers of observation - at any time of the year - without some discussion with the observed teacher.

It's easy to get the wrong end of the stick about why teachers do certain things in the classroom, what their ultimate aims and objectives are ... you just can't get that from observing the lesson, you have to talk to them independently afterwards. (intern J)

The small number of student teachers who had not talked about observation were asked about its efficacy by being presented with a statement at the end of the interview, and their responses were entirely consistent with those of the student teachers who had talked about it spontaneously.

### **Being observed**

Broadly speaking the interns were very disappointed with their experience of being observed and given feedback on their teaching; in talking about it they had far more to say in criticism of the teachers observing them than about what they learned from them during the process. The most commonly voiced complaint was that teachers were over-critical of the teaching they observed, such teachers being seen as insufficiently sensitive to the feelings and learning needs of the interns. The comments of a Maths intern illustrate the impact such an approach can have:

I've learned very little from the people who were very critical of my lessons because I would go on the defensive very quickly, and that part of me that wanted to learn would shut itself off and I'd just be wanting to defend my teaching...And it would be people sort of saying 'this went wrong, and this went wrong', and I knew they'd gone wrong and I didn't want somebody sitting there straightaway after the lesson telling me yet again what had gone wrong. (intern C)

The resentment that interns can feel when they perceive the teacher as too critical can be seen in the following comments:

... it's very hard when a teacher can be too critical after the lesson. In many ways, if they're going to get at you ...then maybe they should do it before in the planning stage. (intern S)

While those teachers who had little to say after observing a lesson did not undermine confidence as much as did those seen as over-critical, the interns found them equally unhelpful in relation to their developing practice. The frustration of the interns with such feedback - variously described as 'bland', 'elusive', 'vague' and 'unfocussed' - is illustrated in the comments of a Maths intern:

She (the teacher) just said 'Oh, everything's fine, I've no worries, that's all fine' when it's patently obvious that everything hasn't been fine, where there are certain things I could have learned, and there's been no discussion.' (intern B)

It is evident that there was a great deal of variation among teachers both in the criteria they used when commenting on the observed teaching and the manner in which they carried out the de-briefing, which can be seen in the way that some interns compare different modes of giving feedback.

The mentor would observe us and make comments that were pretty damn useless in general - it was vague and general .... (whereas with another teacher) her comments were useful and very constructive ... her comments were of good balance ... she would tell me what went wrong, she was more clear. (intern O)

It depends how they say what they want to say to you afterwards, the tone of voice ... sometimes you think 'there's no need to be like that'. At other times their comments were very perceptive and I'd think about what they said. It all depends on individual teachers. (intern I)

For most interns the most helpful observations with debriefing took place in the early part of the course when teachers, drawing on their situational knowledge, proffered 'handy little hints' of which the following is a typical example:

...things like 'next time when you ask for their attention, make sure they all have their pens down because I know this class and they don't listen until they are all sitting up' (intern G)

## Teaching alongside teachers

For the minority of interns who had been involved in working with teachers in classrooms it was a very positive experience. First, since the teacher retained overall responsibility for the lesson, it enabled them to build up their confidence within a protected environment, as is demonstrated in the comments that follow:

We took on a little bit and it assumed a natural progression that you did more and more... It was a good way of building up confidence, and also for learning. (intern N)

(It was) the confidence of having them there, an experienced teacher in the classroom just in case something went wrong (intern L)

The other way in which interns saw themselves as benefiting from these arrangements was that they were able to make adjustments to their inter-active pedagogical decisions in the light of interjections from the teacher actively engaged in the lesson with them.

Two interns explain how this worked in practice, and why they valued it so highly:

(The teacher did) a sort of running commentary, of not criticisms but often questions to find out what I thought and things like 'Well, do you think this might help?' or 'Maybe it's gone on a bit too long.' I've had the benefit of her experience actually at the moment of teaching that thing, so I've been able to weigh up what I thought of the situation, plus what the experienced teacher thought of the situation at the same time. (intern S)

When we were teaching together the teacher used to come up to me and say things like, 'Do it like this, do it like that,' so I've always had the benefit of her thinking about my lessons, how she did it the same way... 'Use me' she'd say. (intern U)

It should come as no surprise that those few interns who did have the opportunity to teach alongside a teacher found it such a satisfying experience, as it enabled them to draw on the teacher's knowledge and understanding in a way that was directly relevant, and of immediate benefit, to their own teaching.

## **Going over lesson plans**

From their accounts, it is evident that the interns saw discussion of their lesson plans, especially early on in the PGCE year, as a potentially valuable way of learning from teachers whose expertise could help them transform 'some vague ideas' into 'something that was like a real lesson' (intern T). The perceived value of the experience, however, appears to be dependent on the stage in the planning process at which the teacher becomes involved. Those, for example, who did not comment on the plans until they had been finalised by the interns, were seen as unhelpful irrespective of whether the plans were approved or criticised.

(It was) obviously a bit annoying when you have planned a lesson and they would say it wouldn't work... It was a bit demoralizing at the time, handing in the worksheets ..and them saying it was too scrappy. (intern L)

(Some teachers) just said 'Right, fine, O.K., do it'. I think they felt I was doing something different from what they would do so they let me get on with it. I would have liked more help to help me clarify what I wanted to do. (intern U)

On the other hand, there were teachers who regularly contributed to the interns' planning, and their input was appreciated, as is illustrated below :

...you learn what won't work, because ... often there's a massive gap between what your ideas are and how it's actually going to work. They (the pupils) might not actually do what you've asked them to do, or be able to ...and you get the benefit of their knowledge which really bridges that gap, especially in the early stages. (intern S)

## **Informal generalised conversations**

Although in their comments on the formality of the procedure, a number of interns made reference to the advantages of 'looser conversations' with teachers, only a small minority explicitly included informal, generalised conversations in their repertoire of ways of learning from teachers. From this small number of accounts, there appear to be two kinds of such conversations: those initiated by an intern seeking advice, and those of a

more desultory, wide-ranging nature which 'spring up in staffrooms'. The former were generally regarded as a useful way of 'getting ideas from all kinds of teachers' (intern G), and of 'learning about other people's attitudes and perspectives' (intern L), but the latter more generalised conversations were dismissed as unhelpful:

...sitting in a staffroom with a member of staff and getting all the gems and wisdom about teaching is just ridiculous'. (intern J)

### **The suggested procedure and other possible ways of learning from teachers**

Almost without exception, the interns saw the suggested procedure as more elaborate, more time-consuming and more formal than other possible ways of learning from teachers, and for some of them it was worth neither the time nor the trouble. A maths intern gives an account of his preferred way of talking with teachers:

I find it easier to talk about things informally. I find teachers come out with more useful remarks when they are not sitting down specifically discussing something...If it's in the context of a natural conversation, people are much more likely to say what they think...they might have an instinctive reaction which is their real reaction - when they start thinking about things they give you a different answer from what they had instinctively thought. (intern F)

The intern above was not alone in believing that the follow up conversation might encourage teachers 'to think too much' as can be seen in the comments of an English intern who, having asked the teacher why he had sent out a pupil from the lesson 'felt irritated' because

... it was obvious that he was trying to find some educational reason justifying getting annoyed with him...sometimes they're looking for more levels of meaning to something than they need to, when they could just basically say why they did that. (intern Q)

It should come as no surprise that this latter intern was among the minority who felt that classroom teaching experience made redundant any discussion following observation of teachers.

Things I wanted to look for came out in the observation...I find it easier to look at a lesson than to try and unfold what the teacher's thought of because it's a very unconscious thing. ..in the classroom situation you're much more aware and you're learning much more than when it's just talking about it afterwards. (intern Q)

For others, it was the elaborate and formal nature of the process that led to both interns and teachers 'taking it seriously' and to 'more focussed and concentrated learning.' These were the interns who saw the procedure - with its two related components of observation and discussion - as more valuable than either component on its own. The importance of the observation (and even those who were eager to 'get on to more general topics' found 'it useful as a starting point to the conversation'), lay in the authenticity it gave to the teachers' talk. The following quotations support this point:

It's not as convincing if you don't see them doing it....I would need to actually see them in the classroom and see what's good for what I'm prepared to take on board and what she says works and what doesn't. (intern D)

...you relate it to what you've seen, you've seen them in action., so it's real. (intern E)

The most striking feature of intern talk about the ways in which the suggested procedure related to other ways of learning from teachers is the emphasis given to opportunities to access the teachers' reasons behind the actions observed. A number of interns point out that this can only be 'guessed at' from observation alone.

You need to know why she's doing what she's doing and that's not always obvious (intern D)

The suggestion from a maths intern that 'unless you follow up observation with discussion with the teacher, you conjure up things in your mind, you are working out the

reasons that the teacher did that for yourself and it's maybe completely different' (intern A), is endorsed by the comments of a history intern:

'Why did the teacher say so and so to the class at that point? 'If you haven't got the chance to stay behind after the lesson to ask that teacher you automatically assume that it must be the reason you think. (intern J)

This history intern also asserts that knowing there will be an opportunity to discuss the observed lesson affects the quality of the observation itself because 'you're not putting your assumptions onto the actions of the teacher in any way.'

Most interns then saw the procedure as an elaborated, formalised version of observation which enabled them to get at the teachers' thinking both in and beyond the lessons observed.

### **Responses to statements presented by the researcher**

In responding to other questions in the main body of the interview, most interns had commented spontaneously on three of the four aspects of learning from experienced teachers that constituted tentative interpretations from the study carried out in the preceding year. For that reason, their views about observation, about any useful teachers' knowledge being revealed during the process of debriefing on their own teaching, and about experienced teachers' knowledge being useful to them only in the form of recipes, are incorporated in sections reported earlier. Few, however, had explicitly referred to the issue of the need for matched teaching styles, and so the predetermined statement about this was presented to them at the end of the interview. It is the responses to this statement that are now reported.

## Matching styles

The interns' unanimous rejection of the notion that student teachers could only learn from teachers whose style was similar to their own was on several grounds. The argument posited by a small minority of interns, for example, was that since they themselves had not fully developed their respective styles, they were not in a position to seek out teachers with similar ones. By way of contrast there were several interns who accepted that although they each had their own style of teaching, it was possible to learn from teachers with different styles, if only to learn how to evaluate their own teaching in rejecting what they saw:

It gives you options to evaluate your own teaching - you're thinking, 'Why do I disagree with that?' and 'How would I do it better?' (intern M)

The majority of interns, however, were dismissive of the idea that they could learn only from teachers with styles similar to their own, because they questioned the concept of overall teaching style. Three points of interest emerge from the responses of these interns. First, they tended to differentiate between on the one hand the skills and strategies used by teachers, and on the other, the overall 'attitude', 'philosophy' or teaching 'personality' of individual teachers, claiming that it was possible to select what one wanted to learn from the former:

...there are always things that you can pick up and either incorporate in your teaching wholesale or in an adapted form. Things that you can see are really effective and clearly make sense in the classroom, that you can learn from, although you might not want to buy the whole package. (intern J)

I've found with most teachers that even if I've thought I don't want to teach like that there is something in their teaching that I really like, or I realise they do very well. There's millions of things I respect about Sally (mentor) but I don't want to teach like her - though there are lots and lots of things I can learn from her. (intern C)

The second point of interest is their claim that - notwithstanding their assertion that in relation to their learning it is possible to select from a teacher's repertoire of skills and strategies - there are certain kinds of teachers from whom one can more easily learn.

Their talk in this respect tends to be vague (in spite of judicious probing) with remarks about the importance of finding the teacher 'sympathetic', of being attracted to particular personalities 'before you even get into the classroom' (intern K), or of the necessity of believing that what the teachers are doing 'is valid and worthwhile' (intern U). The extent to which they are referring to the teachers as practitioners or as teacher educators is not clear from their comments about attitude and personality; it is possible that in their position as learner teachers the distinction between the two was often blurred.

Thirdly, in the comments of one of the interns from among those who rejected the notion of overall style, there is the suggestion that student teachers' development as teachers is accompanied by a change in their attitude to learning from teachers:

At first, it's reassuring to watch somebody you think is similar to you and it's a nice comforting feeling. And if the only sort of teacher you see who is good but you think is different to you, it makes you feel, 'Well, I could never be like that,' and you feel a bit scared because you can't pinpoint things then. But later as you get the confidence to realise that it's you that matters, then seeing other people who are different makes you think, 'Well, what they are doing is good, and I can use bits of it'. (intern I)

Thus, in striking contrast to the previous year's interns (whose views had been sought in rather different ways, and after very different experiences), the majority of those interviewed in this main study tended to reject as untenable all four of the generalisations offered to them.

## **Conclusions**

The responses of the student teachers to the various questions they were asked having been considered, it is now necessary to explore any overall patterns in their responses, and to ask whether there are any overarching themes which are helpful in understanding their thinking.

## Differences among student teachers

One 'pattern' in the evidence presented in this chapter, and one which makes other patterns difficult to detect, is the consistent importance of differences among student teachers: what suits one does not necessarily suit another. Three loosely related ways in which they seem to differ are in

- (a) how analytical they are in thinking about their teaching,
  - (b) how comfortable they are with the formality of the suggested procedure,
- and (c) how much they welcome active deliberate strategies for learning as opposed to 'fitting in' to the established ongoing life of the school.

Such differences are certainly apparent but, even in terms of the student teachers' acceptance of the suggested procedure, a more helpful way of thinking about the differences among them - and one which cuts across all of these - is in terms of the *interns' individual agendas*. For example, intern J, an historian, clearly thought in analytical terms and welcomed the planned and active approach to learning, including its formality, but was interested in finding out more 'generalised views' of the two teachers she observed, so in the conversations moved very quickly on to more general questions.

Clearly, an important element in the success of the procedure from the student teachers' perspective was that it gave a central place to their agendas. Although it was the teachers' craft knowledge that the conversations were about, and therefore the teachers who did most of the talking, the areas of the teachers' craft knowledge on which the conversations focused, and indeed the choice of teachers, depended on the student teachers' particular agendas, related to the wider self-evaluation exercise in which they were engaged; and both student teachers' motivation to engage in the exercise, and their evaluation of its success, seemed to stem in large measure from this.

## **Relationships with teachers**

One of the most interesting features of the student teachers' responses is the way in which their proper self-centredness in pursuing their own agendas interacts with their concern for, and appreciation of, the teachers. This concern and appreciation clearly reflects in part their understanding of their own dependence on the teachers and the strong desire of most of them to be accepted as colleagues by the teachers. One of the ways in which the concern was expressed was in the interns' readiness to take account of the teachers' personalities in modifying the procedure to suit them. And the positive appreciation by most of the observed teaching, and of the insights revealed in the conversations, clearly extend beyond the formal procedure and was reflected in the interviews.

In striking contrast to this positive appreciation were the negative comments made by most of the student teachers about observation and being observed and given feedback, the two most commonly experienced other ways of learning from teachers. In relation to being observed and given feedback, most of their criticism was focused on the teachers themselves, and was often couched in terms of the insensitivity of teachers in undermining the confidence of student teachers. Interested as most of the interns were in learning about teaching and the skills and strategies used by experienced teachers, a persistently strong theme in their talk was of affective considerations. Thus, in talking about themselves, confidence was a major consideration, both in terms of the importance of not being undermined and also in terms of the benefits gained from engaging in the procedure; and in talking about the teachers, the affective characteristics of teachers and their own dependence on teacher approval, especially earlier in the year, were common concerns.

These interviews thus provide repeated reminders that the success of any school-based strategy for student teachers' learning is likely to depend on taking account of the importance to them, and of the quality, of their relationships with teachers.

## **Formality and naturalness**

A dominant concern of the student teachers was with the formality of the suggested procedure, or its 'artificiality'. Many of them felt uncomfortable with making arrangements to observe and discuss teachers' lessons because it was disruptive of school routine and quite unlike the way they were used to engaging with teachers. Similarly, many were also uncomfortable with following a particular predetermined pattern in the conversation. 'It all comes down to feeling comfortable with the teachers' was how intern T expressed this concern. The interns quite generally felt discomfited because they were obliged to try to behave in a way that was inconsistent with the normal pattern of doing things in schools.

The strength of this reaction was such that there is every indication that very few of them would have been sufficiently persuaded of the merits of this artificial exercise to engage in it had it not been an officially required part of their programme. Not only was it off-putting because of its breach of normal ways of working; also, in the eyes of many of the student teachers, it was very time-consuming, both for the teachers and themselves: 'I found it very useful, but I think that the time that was spent on it *needed* to have been useful' (intern D). In apparent contrast to the thirty or forty hours that they typically spent each week by this stage of their course on the normal activities of preparing and teaching lessons, the three hours needed for this activity, planned specifically for their learning, had to be justified by clear learning benefits for themselves.

## **Mental barriers to valuing the procedure**

Through the preliminary studies conducted in the previous year, a number of barriers against the procedure being valued by the student teachers, in the form of apparently widely held beliefs, had been identified. These concerned *what* was worth learning - knowledge had to be of immediate practical relevance to one's teaching, *whose* craft

knowledge it was valuable to access - only teachers with a style similar to that to which a student teacher aspired, and *how* useful teacher knowledge could be assessed - observation on its own, and feedback from teachers on the student teachers' own teaching seemed adequate. Quite remarkably, however, there was very little evidence from the student teacher interviews in this main study of such beliefs. It seems, therefore, that the steps taken to minimise the constraints imposed by such beliefs had been successful. These included efforts to explain more fully to interns the nature of teachers' craft knowledge, making the exercise an integral part of curriculum programmes and in particular of self-evaluation tasks, and perhaps especially importantly, locating the exercise in the latter stages of the one-year course.

There can be little doubt, on the basis of their responses, that the interns were as concerned with the *relevance* of activities to their own perceived needs at this late stage of the year as at any earlier stages. What does perhaps seem to be the case, however, is that their boundaries of relevance change during the course of the year, so that by this late stage they see developing their practice as being more than being able to *do* certain things in the classroom. By then their understanding of teaching, and its hidden complexity, has developed to such a stage that they seem able to recognise both the value and the difficulty of increasing their understanding; and perhaps they have also acquired sufficient confidence and fluency in the classroom for help of immediately practical relevance to have become less essential.

# Chapter Eight

## Interviews with the teachers: analysis of data

### Introduction

The purpose of this chapter is to present the findings from the data collected through semi-structured interviews with teachers. The findings are organised under the following thematic headings:

- characteristics of teacher talk
- reaction to the procedure
- the procedure and other ways of working with interns
- what the interns accessed
- claims of the value to the interns
- claimed benefits for the teachers
- suggestions for future use
- in the role of teacher educator

The questions in the teacher interviews were on the whole more overtly concerned with their evaluations of the procedure than were those in the intern interviews, and less with descriptive or analytic questions. There were a number of reasons for this. First, it was anticipated that the teachers would find it easier to understand why they were being asked to evaluate the procedure more readily than they would see the point of other questions about it. It was also anticipated, and indeed seemed in practice, that because of that they would find it easier to respond to such questions. Secondly, the teachers were less likely to understand the interviewer's own agenda than were the interns who, as students on the PGCE course, had been more exposed to it; and they were also perhaps less likely to take that agenda on trust. Above all, however, in order to elicit full and

meaningful responses from the teachers, it was necessary for the interviewer to ask questions that made sense to them in their position as teachers working with interns in school; questions of a more evaluative kind were thought to fit such a purpose.

## **Characteristics of teacher talk**

An interesting feature of these data is the ways in which teachers talked about their expertise and about sharing that expertise with student teachers, in the context of an interview at one remove from their actual attempt to explain that expertise to interns. It is possible to describe their general ways of talking in the interviews in terms of three characteristics: lack of constraint; vagueness; and the contrast between the readiness of the majority to talk at length and the inhibitedness of the minority.

### **Lack of constraint**

Firstly, while the teachers appeared to want to be as co-operative and helpful as possible, their answers did not appear to be constrained by the questions posed. This tendency to follow their own line of thinking is illustrated by the extract that follows in which a teacher, responding to a question about the knowledge he considered was accessed by the intern in the discussion following observation, begins by talking about the conditions he took into account when moving a pupil, and then talks in more generalised terms about teaching and the differences between novice and experienced teachers. The suggestion is not that the teacher was absent-minded and had forgotten the question, rather that he found it difficult to reply succinctly to it, preferring to talk around the nature of good teaching and what novices find difficult to learn about it, in order to explain something important that the intern had learned.

**Interviewer:** You mentioned the kinds of things you talked about. I mean, what sort of things do you feel she was getting hold of?

Teacher M: She must have got hold of specifics. For instance within about 3 minutes of the lesson I asked one particular boy to stand up and change his seat, without any fuss, I just asked him to move forward. (Pause) Because I know he's a lad that can find work difficult and he needs plenty of direction and if he's not working he can upset the reactions of other pupils, because people get dragged in and involved, as you know. And so I moved him. And he worked very hard after that, and it maintained the right kind of working atmosphere in the group, which is important, obviously. And that certainly prompted questions about why you did that and so on. And I sometimes personally think teaching is like a model of learning to drive that when you notice a car is going off direction you should change the steering instantly, not be forced into sudden turn of the wheel just before you hit something. And I've found that from my early days to be quite an important kind of image, that you are, when you notice things aren't right, it's important to do something instantly, not later, because later on what you have is a major problem on your hands. And I think a lot of learner teachers have difficulty because they somehow feel it's best to leave things and they will correct themselves, well they don't. Everyone needs to act promptly. I guess what more experienced teachers have is this store of what will happen when you don't act and it encourages you early on to do something because you know if you don't it will go wrong. But she was able to ask questions based on individual instances to go back on what you were saying.

### Vagueness

Many of the responses came across as vague, as is apparent in the following typical example in which a teacher responds to a question about the kind of understanding of her teaching that the intern got hold of through engaging in the procedure:

Teacher R: I think she was beginning to understand why I did what I did because I was thinking through it further, and she was seeing beyond just the factual presentation and she was seeing that teaching is much more than that. And I did say to her at one point, I did believe for some time that teachers were almost born, that there's a personality that comes with teaching and I am not sure that you learn all of that, but I do now believe that you can learn some of it ...

This imprecision and apparent lack of coherence together with the tendency to talk around a subject perhaps reflects some aspects of the ways in which teachers think about their teaching expertise and about how such expertise can be acquired. There is certainly

no intention in drawing attention to these characteristics of teachers' responses to be at all critical of them.

### **Readiness to talk and inhibitedness**

There was a striking contrast between the majority of teachers who needed little encouragement to talk and who gave lengthy replies to questions, and those who needed more prompting and whose responses tended to be brief. Exemplification of this comes from the opening of two interviews.

Interviewer: June, do you remember when Kay (the intern) observed you teaching and that was followed up by a discussion?

Teacher J: I was asked to give a double lesson to a class of slow learners doing GCSE and the subject was what was Marxism, and there was a general consensus of opinion that I should do this just to prove that it was possible to do it. They also wanted me to show how a variety of activities could be used in a lesson with a group of slow learners and in fact I produced quite a lot of variety of activity. I used a simple work sheet filling in and I used simple vocabulary and had cloth, needles and thread and was trying to demonstrate that even if you want to work and are able to work you can't work unless you have the raw material and I had the raw materials there. Then they had a diagram that corresponded to the five stages of Marx's revolution but there were no labels and they had to fit a label to the relevant stages and work out which stage had been missed out. Then we had a session of slides of what modern Russia looks like today and used to look like, and writing of notes, and I finished off with a recreational activity - I wrote all their names on the board in Russian and that sort of thing. Now the one with Ruth and the controversial issue ...

The teacher continued her response to the opening question by describing at greater length the lesson she had taught for the other member of the history pair of interns in her school.

Interviewer: Do you remember the lesson and the conversation? (Pause. No response) Do you remember what Stuart was focussing on?

Teacher A: It was different teaching skills

Interviewer: And the actual lesson?

Teacher A: It was pupil/pupil discussion in small groups of four.

Interviewer: Can you remember the lesson?

Teacher A: No, not really

Interviewer: O.K. In the follow up discussion you had with Stuart, how did you feel when, for example, he was asking you questions?  
Teacher A: He was O.K. I was a bit wary of the tape recorder, but it went O.K. He'd got two questions that he wanted to ask.  
Interviewer: What were they about?  
Teacher A: Um ( pause)  
Interviewer: About the actual lesson? About your teaching?  
Teacher A: Yes

The first of the two extracts above reflects the readiness on the part of most of the teachers to talk in a 'narrative form', elaborating their stories about their teaching of pupils and sometimes of interns. It certainly appeared that this was the form of discourse with which they were most comfortable, which may help to explain the inhibitedness of the minority; it is possible that this latter group's reticence stemmed from an assumption on their part that in the interview they were expected to talk in ways other than those that came more naturally to them.

### **Reaction to the procedure**

It is worth noting that for almost all the twenty one teachers, being observed by an intern followed by a formal, lengthy discussion of the observed teaching was a novel experience. One exception was a history mentor who while conceding that on this particular occasion the intern's questions 'were directed in some ways', claimed that 'it didn't seem any different from our normal discussions. We had them every time we saw that class.' (teacher I). For another history mentor the discussion part of the procedure was very similar to those he had on a weekly basis with his two interns: '...we regularly spent ...probably forty minutes discussing something that they wanted to talk about, whether it was in the structure of the course or something that they felt they needed.' (teacher K) For this mentor as with the one above, the only difference lay in the intern's questions which in this case were seen as 'more structured'. Since, as mentioned above, for the overwhelming majority of respondents the procedure represented a new experience, it is worth examining their perceptions of its defining characteristics.

All of the teachers spoke of the procedure in the following terms: it was set up and organised by the intern; observation of at least one of the teacher's lessons was followed by a relatively lengthy interview of the teacher; the intern had prepared questions; the interview was audio-taped. Teachers were used to being observed, and conversations with interns were commonplace; this was different in that the observation and conversation was planned as a single operation, and the conversation was led by the intern and focused on the teacher's teaching.

An interesting feature of the teachers' accounts of the procedure is the detail with which they recalled the lessons observed. The extract that follows illustrates the alacrity with which many of them talked about their respective lessons:

I knew what I was going to do. I hadn't got a structured lesson plan that I was going to stick to. I was going to give them something to work through...I wasn't sure how much they were going to remember from what I'd done previously or how confident they were going to feel with it, so if they didn't feel confident with it then I'd do more practice on it; if they did then I'd move on to the next aspect of it. Basically we went through sine, cosine, tangent, finding the missing side, finding the missing angle and going through the different regimes. I'd split it up into 'what is a problem?; how are we going to solve it?; what do we need to find? So they had a sort of structure for each question but there was this very different type of question that they had to be able to manipulate the algebra for. (teacher D)

While most teachers could not remember the conversation or interview in such vivid detail, their accounts are marked by references to the interns' questions which are variously described as 'focused', 'specific', 'demanding', 'well-prepared', 'precise', 'interesting' and 'good'. It is also interesting to note that the actual questions recalled tended to fall into the why or how category, as can be seen in the typical comments that follow:

...the one question that always came out, 'Why did you do that?' (teacher G)

She was asking me why I did certain things (teacher H)

(the lesson) prompted questions about why you did that and so on (teacher M)

In the conversation she wanted to know various things about -initially the class seemed to settle down without being told- 'How did you do that?' (teacher R)

(She asked me about) how I chose the groups and how I monitored them working at their activities (teacher P)

For eighteen of the twenty one teachers interviewed it appeared that the experience of being observed and having a follow up discussion had been broadly worthwhile and enjoyable. Two of the three discordant voices in the chorus of approval came from teachers who attributed their reservations about the worthwhileness of the procedure at least in part to the approach of the interns. One felt that the intern had not been genuinely interested in the teacher's teaching:

I was given the impression that she felt she had to do it rather than she wanted to do it. I don't think she felt it was going to do her any good. In fact, I think she said 'I have to do this. Can we get it over and done with quickly - I don't want to take up too much of your time or mine'. (teacher C)

The second teacher was disappointed with the interns' lack of preparation:

I didn't feel that George and Sally put quite the preparation in beforehand and didn't do it as thoroughly and I didn't feel the conversations were as good or as useful that they could have been...somehow when I had finished I hadn't said anything that would have been of use... (teacher E)

Far more representative of the respondents' reaction to their experience of the procedure is the view of the teacher who commented that:

I remember the conversations<sup>1</sup> being full and I felt at the end of it that I'd got across (you know) the things I would have liked to have done about the things she was asking. I felt it was quite rewarding both ways. (teacher K)

The overall positive reaction of the teachers to the procedure is also seen in the paucity of their comments about any difficulties they experienced. That they would see fewer difficulties than would the interns is understandable since it was the latter group who had been asked to take the lead and had made all the necessary arrangements; furthermore

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<sup>1</sup> The intern working with this mentor engaged in the procedure with him on two occasions

the teachers' expectations of the procedure, being less formed were less likely to be disappointed. Nonetheless, the fact that only six of the respondents were able to cite difficulties when expressly invited so to do is a further indication of their claimed satisfaction with the experience. Of interest too is the fact that the few difficulties mentioned concerned organisational aspects of the procedure such as the failure to achieve privacy for the conversation, having to break off the conversation because of other demands on the teacher's time, initial feelings of discomfort because the conversation was being audio-taped, and the problem of matching timetables to enable the intern to observe a lesson that was wholly appropriate for their chosen focus. Apart from the two cases referred to above, the difficulties mentioned were not concerned with problems of working with the interns or to the way in which the interns conducted themselves.

In response to a question seeking their views on how the experience of the procedure might have been more satisfactory, the teachers tended rather to focus on the reasons for it having worked well, with occasional elaborations of a more generalised nature. Three broad topics dominated the teachers' explanations: the procedure itself; the interns; and the stage of the Internship year. It is to an exploration of those categories that the discussion now turns.

### **The procedure**

Widespread among the teachers was approval of the observation and follow up conversation because it was 'planned' and 'precise' rather than 'spontaneous' and 'vague'. The planning meant that the observation was followed very quickly by the discussion thus ensuring the lesson was still fresh in the teacher's mind:

I could remember the specific things that went on...whereas if I'd forgotten the details of the lesson, then the reasons for doing what I'd done would have gone as well. (teacher A)

There was also the suggestion by a number of teachers that the planning meant that the conversation 'wasn't just a casual one' (teacher L) as can be seen in the extract that follows:

...my schedule tends to be fairly hectic anyway, and by having that 'we must sit down and talk about it' for half an hour made us sit down and concentrate for half an hour whereas the informal discussion would be a cup of coffee in the staffroom and there would be other people demanding my time and whatever, so that was useful to sit down and concentrate on it. (teacher D)

The other element of the procedure seen as being a salient factor in its effectiveness was the specificity of the intern's focus and subsequent questions. For one of the English teachers this meant being able to give the intern succinct, useful answers to his questions:

If you ask vague and rather general questions it takes too long to answer. If they're homing in on specifics then you can normally answer in a couple of sentences and I think you're giving out sharp information too. (teacher U)

For a number of teachers the specificity of focus and questions got the conversation off to a good start as it ensured not only that there was plenty to talk about but also that the talk was pertinent. Illustrative of this point are the following typical comments:

...to home in on something like this, it focuses attention (teacher T)

( specific questions) gives you a context in which to start (teacher L)

...they were able to ask questions based on individual instances, to go back on what you were saying. (teacher M)

...in his ( the intern's) mind he had got some structure and he had got some questions to work from (teacher N)

it concentrated precisely on that lesson and...I found that helpful (teacher B)

Many of the teachers commented on the preparedness of the interns and the guidance they had been given. For one of the maths mentors the whole procedure - which she described as 'a large-scale operation' - was made worthwhile and relevant because the intern had chosen as his focus

...something that he felt I had some skill in within the department, an area he had seen me operate, so he'd chosen that because he felt he had something to learn from me on that score. (teacher F)

Typical of the approval of the advice given to the interns on how to conduct the interview with the teacher are the comments first of a history mentor then of an English mentor:

...the questions were good and if you have an intern that was not very forthcoming and couldn't think of questions themselves that were useful then this (the procedure) would focus them in a direction that would be useful and give them ideas to get them going (teacher I)

...her ( the intern's) manner wasn't threatening. I think it's important that the young teacher doesn't say things like 'Why didn't you do this?' (teacher R)

The teachers' acceptance of the relatively formal and elaborate nature of the procedure is interesting. Apart from the three who commented on the discomfort they felt at being audio-taped, those who made any reference to the formality tended to admit that, in the words of one such teacher:

I think it is probably necessary and to have the questions asked because I think it does make you focus and makes me as a teacher focus on the way I do things, and makes them look out for things... (teacher E)

It was of course when discussing the procedure itself with the researcher that the teachers were most likely to be influenced by their probable knowledge of her enthusiastic advocacy of observation and follow up discussion. The positive reactions outlined above must therefore be interpreted with some caution. Nonetheless, the absence of any indication of unhappiness with the procedure, or especially with its 'artificial' and time-consuming nature, was remarkable; and it was the teachers themselves who identified the particular strengths of it outlined above.

## The interns

Since the procedure was both initiated and carried out by the interns, the teachers in voicing their approval of it were in effect also commenting positively on the interns. A typical comment underlining the teachers' perception of the interdependence of the procedure and the interns is the following:

...it was very effective with someone like Nevine who is prepared to ask questions ...she did want to know why certain things happened in the lesson and made the conversation very easy and that's important because I didn't know what I did for lots of the lesson, so it's important for the observer to needle away and ask you to talk about the reason for that, and she was good at that. She didn't come and say 'Oh, I enjoyed that lesson, can you describe how you felt about it?' Sometimes a question like that is too open, and she did really home in on specific areas of skills and expertise. (teacher G)

In addition to such comments, however, were many about the interns as individuals, with a number of teachers claiming that they were 'fortunate' or 'lucky' to find themselves working with such 'good interns', and suggesting that the procedure might not be equally effective with all interns. As an English teacher put it:

If you've got someone who's either arrogant or not very perceptive then it might not work (teacher S)

One of the history teachers expounds on the same theme:

.. the interns we've had have been particularly intelligent, aware and sensitive. Now with people who ask less perceptive questions you then might actually find yourself using the less perceptive questions as a route to telling them what you think they ought to know. (teacher J)

The picture of the 'good' intern that emerges is of someone who in addition to being 'perceptive' is keen to learn, is capable of taking the initiative, and has well-developed inter-personal skills. The teachers' perception of the interns' sincerity as learners as a key factor in the effectiveness of the procedure can be seen in the following extracts:

...she (the intern) was prepared to learn I felt that by talking to her she was actually going to pick up on some of the things and I was impressed by her (teacher D)

I am not saying that you should have people that you like all the time, it doesn't need that, but people who want to learn make you as a teacher...quite happy to expose your weaknesses because you don't feel threatened. If the students are far more critical in a destructive way you would close up - their attitude has to be one of wanting to learn and to be humble. ..she (the intern) was sufficiently questioning and sufficiently humble to keep asking questions, and she made me think about things that I might not have thought about before... (teacher Q)

It is interesting to note that this teacher (teacher Q) goes on to say 'I think her personality helped' and to describe the intern as 'personable' .

The importance of interns having the social skills to win the co-operation of teachers in setting up learning opportunities for themselves is highlighted in the comments that follow:

...Simon had a good way of saying 'I want to do this, is that O.K. with you? Can we do it at this particular time?' which I think other students might find harder to do. He was quite positive in what he wanted, and quite assertive in getting it, but not in any offensive way at all. And I think that has to be there. (teacher U)

Alongside their approval of the formal procedure, then, teachers tended to attribute its success, as they saw it, to the qualities of the individual interns. At one level they were emphasising that the procedure depended on quite a demanding range of qualities in the interns; and this was their clearest and most overt message. At another level, and more subtly, they were perhaps saying also that ultimately it is not the system that matters so long as the people with whom one is dealing have the right attitudes, skills and understandings.

### **Stage of the year**

In talking of the factors that had led to the perceived success of the observation and follow up conversation, virtually all of the respondents made reference to the stage in the Internship year at which it had been undertaken. Such talk is mainly in terms of the

interns' development, but mention is also made of the relationship between intern and teacher.

For the teachers, interns were 'ready' for this procedure when their understanding of classroom teaching was such to allow them to focus 'really sensibly on what was happening... to delve and understand what was going on, and make more sense of it'. (teacher M). The respondents were clear that such necessary understanding came from the interns' own teaching, as is demonstrated in the extracts that follow:

...in the early stage they really don't know how to focus on what to ask you, but they have to actually get a feel of things and when they try them out themselves then they know how to ask you. (teacher I)

..they've got to do some by themselves first or else they're not going to find the questions to ask ...we all function better finding what we want to know (teacher S)

The view that the interns should have some experience of teaching before engaging in the procedure so that they 'are aware of the intricacies and the crosstreads that go on within a lesson' (teacher B) was widespread; the assertion that such experience should be 'painful' was less common, but was made with some force. The two extracts that follow aptly illustrate this point:

...some of them have never actually been blooded in front of a class, and sometimes the impression is that they think they can do it until they actually stand up and have a disastrous lesson and then the need has to come out of them that they feel that they can actually learn from somebody (teacher D)

...it's almost not until they have tried and maybe failed in their own mind that they will really want to ask and look. If you sit in a class and you haven't taught a class before, your first reaction is usually very critical, you go in and think I saw that person looking at the wall etc. It would be 'This is not the model I would want to follow.' It's only when you try it and find out that you've got twenty of them chewing gum and they're all looking at the wall that you say 'What's happened?' ... it (the procedure) has to come after quite a long attempt by yourself to work out all the things ... you must want to put things right and you can't do that until they have gone wrong. (teacher Q)

A number of teachers also argued that the relationship between the intern and the teacher needed time in which to develop before the procedure was attempted. In the example that follows, an English mentor emphasises the importance of being able to rely on a body of shared understandings:

...both Sally and I had got to a stage almost naturally when...she was more able to ask the kind of questions that were meaningful, and I was more ready, able to respond to the kind of stuff that she was asking. (teacher P)

For others it was more a question of affective development :

He's (the intern) able to relax with me and vice versa...it needs to be done when you have reached a certain stage in a relationship, not too early. (teacher U)

...we'd worked together for a while, so I felt at that stage I was willing to admit my errors to him... (teacher F)

It is worth noting the relationship between these three factors emerging from the reports as the perceived necessary conditions for observation with follow up discussion. In commenting on the procedure itself, the fact that the interns took the lead at all stages was seen as important: their perception and sensitivity as observers and more especially as interviewers was highlighted in teacher talk about the interns; and the main focus of comments about the timing of the procedure was the development of the interns to the point where they wanted to find out more about the teacher's teaching and were likely to respect what was revealed to them. Support for this latter point is furnished by teacher F who asserted that the procedure worked because the focus 'has been selected by them (the interns)...they are perceptive to it, they are eager', an argument endorsed by a history mentor (teacher L) who stated quite simply that as she knew the intern ' wanted the information' there was 'a validity' to the whole exercise.

## **The procedure and other ways of working with interns**

It has already been suggested that for the teachers the procedure represented a different way of working with interns; the focus of this part of the discussion is the nature of those perceived differences.

As one of the areas of interest for the researcher was whether the kind of knowledge that it was claimed had been revealed to the interns through the procedure could be communicated in other ways, in the interviews the respondents were invited to talk about the various ways in which they had worked with the interns and to draw comparisons between the procedure and these other ways. It is interesting to note that the invitation to talk about other particular ways of working was, for the most part, not taken up, even when prompted or probed. Collaborative teaching, for example, was mentioned by only three respondents, observation and debriefing of interns by two. More teachers had more to say about being observed and about 'general' conversations with interns, but mainly by way of comparison with the procedure; and in virtually all instances emphasis was on the limitations of what was seen as observation lacking a follow up conversation or a conversation that was not linked to a particular observed lesson. This is not altogether surprising since the procedure with its two components of observation and conversation was the central focus of the interviews. Moreover, the interviewer was closely associated with the procedure, and again it is likely that the teachers' responses were coloured by their perception of the interviewer as an enthusiastic advocate of it.

In contrast to other ways of working, two features of the procedure seemed to stand out in the teachers' minds: it was driven by the agenda of the individual intern; and the focus was the teacher's account of his or her teaching. It was the combination of these two factors that made the procedure singular in the eyes of the teachers.

It is not that teachers were unused to talking about their teaching: in whatever way they worked with interns a central point of reference for them was their experience and

knowledge. For a number of teachers, however, the procedure gave them an opportunity to talk about their teaching in their own terms and without conscious concern for the intern's learning. It was the teacher and the teacher's teaching that took centre-stage, and it was having the spotlight on them rather than on the intern that made this a different experience. An extract from the account of one of the history mentors aptly illustrates this point:

I think the difference was that it was me, I felt that he (the intern) was asking me questions rather than I was giving him the opportunity to express his ideas...in the past we'd always been talking about him (the intern), and we hadn't been talking about me. And even if I said something like, 'Well, one of the ways in which I get round a problem is by being very well planned', it was still giving him help and advice. And I didn't see this session as a session that we were trying to find ways necessarily to help him, but rather we were talking about how I felt and how I operate, and that was quite different. (teacher N)

In the statement of another history mentor, the same contrast is explained in terms of the interns' motivations:

They are keen to know what you think of their lessons. They don't often ask questions about why you do things. (teacher L)

The importance of it being the intern's agenda is succinctly encapsulated in the words of the teacher who said:

The things we take for granted are not necessarily what the students want to know (teacher H)

The features of the procedure that made it distinctive for the teachers also point perhaps to its attraction for them: it was the complementarity of the interns deciding what they wanted to know and the teachers being therefore licensed, within these limits, to talk about their teaching in their own terms.

With the exception of the mentor (referred to earlier as one of the three teachers who expressed reservations about the procedure) who felt that 'it's enough to just have

observations' (teacher O), all the respondents reported that interns could learn far more from observation of teachers with a follow up conversation than from observation alone.

From their talk about observation it appears that for many of the teachers it was often undertaken without a specific focus and with no discussion of the observed teaching; for these teachers one of the procedure's novel features was that the observation was focussed. This point is illustrated by the following typical comment:

...usually you observe a lesson and you go away and don't really think about a specific point within that lesson. But to home in on something like this, it focusses attention on that aspect that she (the intern) was interested in (teacher T)

Even the small group of teachers who made a case for observation were mindful of what they saw as its limitations, as can be clearly seen in the comments of one of the history teachers:

...we should all observe practising teachers for two reasons. Firstly when you see somebody who is good you get ideas, and secondly when you see somebody who is terrible you get ideas. However there is a problem with observing...in the first place you might not be aware of what is going on, you the observer might not be clued up enough to know what it is you are looking for, and secondly, you can watch a good teacher and come away with totally the wrong impression. (teacher J)

The danger of misunderstanding the observed teaching is also highlighted in the following extract:

...if you go and observe a lesson, even if you are concentrating on something in particular, if you don't get the opportunity to talk about it, then in a way, that's wasted because you may have thought things - 'Oh, the teacher did this because of so and so'. But you haven't clarified it with the teacher, perhaps they didn't do it for that reason...it helps to actually talk about it. (teacher A)

One of the three teachers referred to earlier as having reservations about the procedure was alone in arguing that 'if you sit in the staffroom talking generally ... an intern learns more' (teacher C): all the other respondents spoke with approval of the conversation

following observation which was seen as serving a different purpose from the more informal conversations. These latter conversations, invariably referred to as taking place 'in the staffroom' were variously described as 'spontaneous', 'much more sort of incidental', and 'an ongoing stream of consciousness'. The key perceived difference between a conversation of this kind and the conversation as part of the procedure was that the latter was linked to an observed lesson, which resulted in the post-lesson discussion being of 'a different quality'. The observed lesson was seen as important, not only because it made possible a more detailed and more precise discussion, as the following comments suggest:

...it's more precise when they're homing in on actual practice that they've seen. You're more precise and that's more helpful to them than giving general advice which is often hard to pin down (teacher S)

but also because it enabled the teacher to reveal her thinking through the use of concrete examples:

...whatever you are talking about, or explaining or anything, you need an example, or an example would help to learn something new. (teacher A)

The shared experience of the observed lesson was also seen as providing 'evidence' for the discussion. An English mentor explains:

...the starting point is, I hope, a reasonable lesson, there is the evidence...so you have a picture, a map in front of you...a shared experience (teacher P)

Also important was the specificity of the questions which the interns asked. 'The questions I was being asked did make me think more deeply about what it was that I was doing', explained teacher D, adding that in an informal conversation in the staffroom she would take the lead and talk about 'the things that I could see that I was using, not necessarily what Jane (the intern) saw that I was using'.

For some of the respondents the conversation was both broader and deeper than those they were accustomed to having with interns, as exemplified in the comments of a maths mentor:

...it went a stage further than most of our conversations had gone. With the normal running of the school the time that is available is really limited to reviewing a plan... making sure that you've got something that is going to work... Because we had set time aside to do it, we were able to go deeper and begin to think about the children's understanding of what was going on...the children's pleasure in learning, issues that do go below skin deep, which we would love to give more time to but you seldom have the time. (teacher F)

The features of the procedure highlighted by the teachers - the interdependence of the observation and discussion, questions from the intern seeking answers from the teacher, the specific nature of the questions - together with the factor of protected time in which to engage in it, led to the conversation not only being seen as different from other conversations with interns, but also as distinctively valuable.

### **What the interns accessed**

As has been suggested earlier, the teachers were in no doubt that their talk in the discussion following the observation of their teaching was different from their talk on other occasions; they were also clear that this was due in no small measure to the fact that the discussion was led by the intern. In response to intern questions the teachers talked about matters that they might otherwise, in the words of teacher E, 'take for granted', a point endorsed by a teacher of modern languages who explained that the questions from a maths intern made her 'sit back and think what was it that I was doing, because I do it automatically and don't really think about it ... it's things that tend to be second nature' (teacher B). Echoes of this notion of the knowledge accessed by the interns being automatic, taken for granted by the teachers, and not usually put into words can be found in many of the reports, of which the following examples are typical:

...a lot of what we do is automatic and I find it difficult to pinpoint things unless I'm asked specifically (teacher A)

...a lot of things that you do I find now I do without realizing I'm doing them and only when somebody questions me afterwards to why I did that do I even realise that I had done it (teacher E)

...it is interesting being interviewed about what you have done because I do a lot of it by instinct (teacher J)

...it made me stop and think too about the way I use my voice, because you do it so automatically (teacher T)

Some of them I couldn't answer...I didn't know the answer to them, and I had to talk round it before I got underneath it to work out why I had done something...(teacher K)

It is interesting to note the similarities in the teachers' descriptions of the knowledge accessed by the interns as part of the procedure, especially in the light of their accounts of the substance of the discussions. While from their accounts it would appear that for all of them the discussions began with talk about the specific observed lesson, such commonality was dissipated once the discussions were underway: some teacher/intern pairs focused on specific aspects of the observed lesson throughout the discussion, while others had conversations that went 'backwards and forwards'. In a number of discussions the teacher soon moved on to more generalised talk, as the following examples indicate:

...we did broaden it into much wider issues...things I said to her like ...I'm very aware now that kids react to you in the way that you treat them; if you treat them with respect, and a fair degree of courtesy then they will respond back to you. If you push a kid up against a brick wall all you can do is hit out at you either verbally or physically. (teacher D)

The lesson was certainly our starting point, but we very quickly drifted off from that to the main thing about how can we get over the idea of being enthusiastic...the lesson gave us something to keep coming back to, but it wasn't all pervasive. (teacher N)

The teacher goes on to explain that in this 'far more general' conversation she had an opportunity to talk about 'how I see myself in the school'.

Irrespective of the scope of the discussion in which they were engaged, there was general agreement that it enabled the interns to access the teachers' reasons behind actions observed or referred to, as the quotations that follow suggest:

I was explaining my actions. And although she could observe my actions perhaps she didn't understand the reasons for me doing that. (teacher D)

...I was having to explain within that context the things that I had done, why I'd done them. (teacher K)

A number of teachers also claimed that the discussion served to help the interns to get 'behind' or 'underneath' the lesson. The two quotations that follow are evidence of this: in the first, an English mentor gives an indication of the detailed planning that went into the observed lesson; in the second a history mentor talks about achieving an informal atmosphere in the classroom.

...something like that looked quite easy, and what...was made accessible was the way in which it wasn't arbitrary, the way in which before that lesson I'd actually worked out exactly who was doing what and when. Not only that - because there are some difficult children in there - the way in which I'd actually chosen who was going to work with each other... Certainly that became accessible, the way in which a lesson like that doesn't just happen. (teacher P)

...I perhaps give the impression to somebody who's observing that often it, it is a fairly informal atmosphere, and ...the one thing I would've.. made clear is that behind that apparent informality there is quite a lot that's going on...there is a need to have structure and there is a need for the sort of formal organisation of tasks and activities in the classroom, and it's really not the haphazard approach that's taking place...and that it would differ for different groups...and the way I would teach some groups I wouldn't others because they're different and...the way that they react and the demands of their needs are very different and those are the sorts of things in being oneself you have got to consider. (teacher L)

Thus there was a broad consensus among the teachers that the conversations with the interns had enabled them to make accessible what they generally took for granted in their teaching and the planning and reasoning that underlay their observable teaching. The conversations had differed, by the teachers' own accounts, in that elucidating the observed lessons had been the primary and most valued achievement for the majority while using the observed lesson as a springboard for discussing more general concerns was what had been valued most by a minority.

## Claims of the value to the interns

The claims made about the value to interns of the knowledge accessed in the discussions are very varied, not least because such claims are self-evidently dependent on the nature of the individual discussions. Thus, in the eyes of a teacher who was observed by an intern outside of her subject specialism, it 'shows how someone functions in the different areas of the school,' which she saw as valuable for the intern 'because so much goes on behind closed doors and you hear someone is a good teacher but it's very hard to create the opportunity to find out how and why' (teacher B). With the exception of the English teacher (teacher H) who explained that while he had 'thoroughly enjoyed the conversation' he was not sure whether the intern 'had got anything out of it', all the teachers claimed that it had been a valuable exercise for the interns. There are three broad areas in which the teachers claimed that interns benefitted and they were:

- developing understanding of teaching and teachers
- extending their repertoire of teaching strategies and skills
- the process of pursuing through their questions the thinking underlying the teachers' observed teaching

### Developing understanding of teaching and teachers

A notable feature of the claims made is the number of references to interns developing their understanding of teaching. In some cases the emphasis was on helping the interns avoid potential future mishaps through reducing their naivety. A history mentor highlights the need for caution in some circumstances:

...one of the things she might have learned from it, is that you can't just joke with a group and not have the discipline in the background. But once

you have the discipline in the background you can joke, but even that can go wrong sometimes, and it's something that has to be spontaneous for it to work ...that fits in and if the lesson is reasonably controlled we can fit in things like that and keep the pace going... (teacher K)

A second example comes from a teacher conscious of the dangers for novices in trying out a teaching strategy they have perhaps seen but not fully understood:

...maybe you have been working on a line of approach for a long time in order to reach a particular performance and I'm thinking there particularly of pair work where I could in that lesson (the observed lesson) slot them into working and asking each other lots of questions. Somebody who thought 'I would like to do that' might go in and have a total disaster because they didn't realize you had to train a class to work in a particular way. (teacher B)

For others, the value was in interns becoming more aware of aspects of classroom teaching that were regarded as relatively sophisticated; and there is a suggestion in these accounts that it was a combination of the procedure and of its timing - coming as it did in the second half of the course - that made possible the claimed learning. In one case the observed lesson was an introductory lesson to a module and in the follow up discussion the teacher was able to explain 'how that fits in with the scheme of things', which she saw as useful for the intern because:

as teachers we have to have a longer view of what's going on in a classroom. However much we are forced to go from day to day, you are inevitably...thinking ahead and seeing how this fits in with the wider scheme of things, and it's important, particularly at the end of the teaching practice, to see that. (teacher F)

In this second example, the mentor explains that the procedure 'becomes much more useful because of their (the interns') experiences in class':

...there was nothing she couldn't do in terms of preparing lessons...one of the difficulties was ...where does it go wrong when you've thought about the lesson and you've produced all this stuff? She's been in that position, now what she needs to do is see a teacher accessing the lesson to a very, very mixed class, and because of that experience she has, she was looking at the individual children and how I was coping with them, and understanding fully that it wasn't easy, that it required the planning, ...the classroom management, ...knowing how the individual child's mind worked, but I don't think she was aware of...that sort of thing before. (teacher P)

A significant feature of these reports is the teachers' insistence that interns, rather than trying to adopt observed teaching behaviours, should 'develop their own style': accessing a teacher's thinking behind observed actions was seen as enabling interns to do just that, a point exemplified by the following extract:

...it helps him identify the different processes that were at work there and...it was a way to developing his own lesson of that nature. Of course it's not exactly the same, but it's geared towards his own personality, his own way of working.....it gave him a good insight into what I was thinking...how my thoughts had been going...and it gave, as it were, a toe-hold on how he was going to get into it. (teacher F)

In this second example, a history teacher argues that an understanding of the observed teaching is an essential prerequisite to 'real learning':

...It's not just watching somebody and copying, it's looking, questioning, making decisions about what they've done, really understanding what they've done, and then deciding 'Well, I agree wholeheartedly with that and I'm going to try and do this,' or 'I see why he's done this, but it's not me and I'm not going to do it anyhow, but it works. So perhaps there's something else that I can do that will achieve the same sort of thing.' (teacher M)

The teachers were quick to refute a suggestion from the interviewer that an understanding of teaching in a single specific lesson might be of limited value to a learner teacher. One of the maths teachers, for example, while conceding that the kind of knowledge accessed by the intern was likely to be very context-dependent - 'local knowledge' as she put it - asserted that 'they can translate it to their situation, their classroom situation', adding that it was less to do with mathematics than with 'pupils and this type of pupil at this time of day.' (teacher A) A second example is furnished by a history teacher:

...although the set up of a class on one instance may be unique..., there is your concrete example and from that you can extrapolate your abstractions. So I might never see that class again, but you could learn from it. (teacher J)

In addition the point was made by one of the mentors that there were some aspects of teaching that are so context-specific that to talk of them in abstract terms would be meaningless. In her words:

... the way you talk to individual pupils and a class is something that is so specific to the given moment in time that there is no way in the abstract you'll ever talk about it or could even describe it. (teacher I)

Comments were made by a number of respondents that in getting access to the thinking of an individual teacher, the intern was learning not only what was important to that particular teacher, but also that every teacher has a set of beliefs and preferred ways of working, a point illustrated by the following quotation:

One of the things they need to be aware of is there's a lot of different ways to a common end, and they need to be very tolerant in their relations with staff. If they realise...everybody has to have their own style and that styles can be equally effective even if it's not your style, that would be useful to them in the long run. (teacher I)

### Extending repertoire of teaching skills and strategies

It is interesting to note that in only two of the reports are there accounts of interns incorporating into their teaching repertoire a specific skill or strategy learned through the procedure. Before making inferences about the efficacy of the procedure two points need to be considered. First, according to many of the reports, interns were looking to develop a greater understanding of a particular teacher's teaching, or of an aspect of teaching that cannot be narrowly classified as a single skill or strategy: for example, intern L was reported as being interested in how to be oneself in the classroom, intern M in differentiation, and intern J in 'how to motivate unmotivated students'. Secondly,

those respondents who were not mentors were unlikely to be in a position to monitor an intern's practice following the observation and follow up discussion.<sup>1</sup>

Both teachers who claimed that their respective interns did try out the specific skill or strategy on which they had focussed, spoke of the procedure not only helping interns to understand how a particular desired outcome is achieved, but in the process giving them the confidence to make the skill or strategy part of their own classroom practice. In the words of the two teachers:

I did try to answer the question each time because I didn't want her to think 'I wouldn't be able to do that because I'm not experienced enough', and trying to give her reasons for my actions as often as possible it meant that she could do that. ...she saw my discussion lesson and she performed the same way with another first year and it worked very well and she was pleased that she could do it...that was instant feedback on whether she could do it, and it boosted her morale and confidence. (teacher G)

...I hope it sort of gave him some practical ideas about how to approach open-ended lessons, things like writing their suggestions on the board, so you give them worth, you can address them with the class...A few simple techniques which I then saw him do , and very successfully...And basically the confidence in him as well. I think he thought 'I've seen it done ...now I can do it, no maybe not for so long...maybe not in so much depth, but I can start'. (teacher F)

### The process

Comments on ways in which the interns benefitted from the process of engagement in observation with follow up discussion were plentiful. Some saw it as generally stimulating the interns' thinking about their own teaching, as in the following typical quotation:

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<sup>1</sup> In one of the interviews (with teacher A) it was the interviewer who informed the teacher that subsequent to the observation and follow up discussion the intern had tried out the strategy - pupil/pupil discussion - which he had learned from engaging in the procedure.

It is making them ...think about their own teaching. 'How come she does it that way? Maybe I'll adopt it. Why does that work for her, but it hasn't for me? Why does that not work for her and it did for me?' (teacher L)

For another teacher there was a direct link between intern questions of the teacher and questions about their own teaching. In his words:

(the process) enables them to begin to ask the right questions of their own teaching, their own preparation, of their own relationships with kids in the classroom...Once they begin to ask the right questions, they'll begin to find their own answers. (teacher M)

This teacher was in no doubt that engaging in the procedure would 'help them to learn much more quickly'. For another, the process of pursuing in detail how the experienced teacher worked out what to do, and how, was ideally suited to helping the student teachers to learn to think like teachers themselves:

... it's really getting to the heart of why people do things in the way they do them ...it would be easy to say, here's a subject, here's a topic, teach it. And you could do that. The student could be given all sorts of tips on how to teach it, but unless they actually see somebody doing it and are able to ask questions about and observe and notice why I do things in a certain way it becomes just a topic, they haven't really made it their own, they haven't got themselves into it... (teacher U)

## **Claimed benefits for the teachers**

A significant feature of these reports is the teachers' unsolicited references to the way in which the procedure impacted on them. All save one - who attributed her disappointment to the circumstances of the particular occasion, namely a 'half-hearted' intern who 'geared the conversation' to 'how she was going to teach next year' (teacher C) - claimed to have found it a positive, enjoyable experience. It is also worth noting that in this talk of the perceived benefits, far greater emphasis was put on those accruing to them as teachers rather than as teacher educators.

That so many of the respondents described their experience of talking about their observed teaching as 'interesting' suggests that it was not a common occurrence; and, indeed, there are a number of references to it as 'unusual'. One of the history mentors, for example, asserted that the reason for her remembering the lesson so well when interviewed by the researcher was 'because it's so rare that one actually has the opportunity to talk about it' (teacher N). This theme of lack of opportunity for teachers in the normal course of their working lives to talk about their teaching was elaborated by an English teacher:

...the whole thing about teaching is that you work on your own with the door shut and you have your own ideas of what you want to achieve, but don't talk about them with anybody else in the school because at break time you don't want to talk about teaching. You never have a chance ever to talk about what you want to do in teaching...this is the only opportunity you get to talk about what you are trying to do. (teacher Q)

A more straightforward explanation of why, in his opinion, 'most teachers like doing it' came from one of the history teachers:

Teachers are generally interested in teaching, and they're interested in their teaching too (teacher M)

From their reports, it is clear that the experience was also welcomed by many because it was seen as making them think about their teaching, a point attested to by the following extracts:

You don't think about how you are going to do it, you just get on with it ...talking to her (the intern) you do register what you are doing and it makes you stop and think about what you've been doing automatically for so many years (teacher T)

How good it is for the teacher to be asked those questions, because it makes the teacher think, too. We often don't think about what we do in that way...we actually haven't much time to think about why we do what we do (teacher L)

A feeling of excitement, hinted at in the latter quotation, is made more explicit by one of the English teachers:

...it put me on the edge of my seat and made me think, 'Right, what am I doing this for?' (teacher U)

For some, talking through aspects of their teaching brought with it clarification of teaching goals that had hitherto been at best implicit. A teacher whose use of groups had been the focus of the observation claimed that her rationale for using groups emerged during the course of the conversation:

Talking about this group thing it hit me very clearly that for me the intellectual progress has top priority, and if using group work is good for them socially, fine, but that's not the main reason why I am doing it. (teacher J)

In a small number of cases teachers claimed that they made adjustments to their teaching in the light of their thinking articulated in the conversation. In the extract that follows an English teacher explains why for him the procedure proved 'a worthwhile exercise':

I felt I was getting value from it just simply by talking about my own lesson, because I remember at the end of it making one or two notes myself of things that perhaps I should have done differently, so I found that useful. (teacher H)

A second English teacher was 'grateful' that talking about her lesson - an 'ambitious one' in which she was trying to equip pupils with language with which to discuss language - made her aware of areas in which she might not have achieved her purposes, but which could be put right in future lessons. In her words:

...he (the intern) said he was impressed with the lesson, but I actually felt that I could have done it better, I thought...I'm still making mistakes here, I haven't got it right ... and at the end, after talking about it with Simon, I was concerned that I hadn't got everything across to them that I wanted to. I'd talked about, you've got to carry things through, so in the next couple of lessons I consolidated it and it was alright. (teacher S)

The wistful note struck by one of the teachers in his account of the importance for teachers of the procedure may help to explain why so many of the respondents claimed to have benefitted from engaging in it:

I think that sort of conversation used to take place at the end of the school day and I don't think it does anymore...a lot of people are so busy that they are doing, doing, doing, and not doing enough of the reflecting and thinking about why am I doing this, why am I here anyway? (teacher U)

Although in their talk of claimed benefits, there are few explicit references of the value to them as teacher educators of engaging in the procedure, from their overwhelmingly positive reaction to the procedure and their claims about its value for the interns - both reported earlier in this chapter - it is reasonable to infer that they felt the time invested in it was worth it from their perspective as school-based teacher educators. It is interesting to note that of the three teachers who did make explicit the benefits to them as mentors, two were those who reported their interns as having successfully tried out what they had learned through observation and follow up discussion. For one of them 'having interns that you can see are listening and putting into practice what they think they have learnt ..(is) good and it's a positive feedback for the mentor' (teacher G).

The second teacher explains the pleasure she felt when her intern had a successful lesson with open-ended discussion along the lines of the lesson that had been observed and discussed:

...he copied it and for me it was very gratifying, because I felt 'he's actually taken on some of the things and worked on them' ...it was thrilling. I sat there thinking 'he's doing it, he's doing it'. (teacher F)

As indicated earlier, for a number of teachers a contributory factor in the success of the procedure was the relationship with the intern. The third instance of the procedure having had a valuable outcome for a teacher as a teacher of interns was one where the teacher had the opportunity to talk about her beliefs as a teacher, and the intern had a more active part to play, as is illustrated in the quotation that follows:

...it did a lot for our relationship...I really didn't think Donald understood what it was that was important to me and so in a way I needed to put it into words... he was interviewing me, he had the upper hand, he was asking the questions and he felt ...more comfortable in that role (teacher N)

## **Suggestions for future use**

The teachers were invited to comment on the usefulness of the procedure and on the desirability and feasibility of it taking place on more than one occasion during the PGCE year. The respondents were at one in arguing for the inclusion of the procedure in the course, not least because, as one of the history mentors put it, 'if they don't do it (as students)...they'll never do it. Once they're into schools, once we get our classes we're in our classroom' (teacher L).

From the reports it is also possible to discern elements of the procedure that were deemed essential by all the respondents, and they are:

- focussed observation of a teacher's lesson, the focus determined by the intern
- a follow up discussion to take place as soon as possible after the lesson
- the discussion should not be disturbed by extraneous interruptions
- the procedure should take place after the intern has had some experience of teaching

Of interest is the fact that in this talk of possible future use there were very few references to the perceived formality of the procedure, from which one can assume that the teachers were accepting of the level of formality that a planned, structured procedure would necessarily entail. Only one teacher suggested that the procedure would benefit from being less formal, arguing that the 'atmosphere' needs to be more relaxed' so that the follow up discussion could become 'a case of sharing ideas ' (teacher C).

The mentor who felt that carrying out the procedure with each of her two interns was 'enough' and that more 'would be quite draining' (teacher F) was alone in arguing against increasing the frequency of the procedure; all the other teachers claimed that in the future

they wanted observation with follow up discussion to take place more often. There was, however, considerably less agreement about the number of times it could or should take place. Views concerning the optimum number of times ranged from the somewhat hazy 'every now and again' through the more specific 'five to six times during the year' to the precise 'once in J weeks, again at the beginning of S weeks and a final one in May'; but the real differences lay in attitudes to time constraints. The teachers' comments about time fall broadly into two categories:

- the procedure should happen more frequently and there is sufficient time for that to happen; and of the views expressed, this was the more common
- ideally the procedure should happen more frequently, but this is not possible without additional time given to teachers for their work with student teachers

The case put by some of those teachers whose comments belong in the first group was that mentors, if not all teachers, had sufficient time allocated to them in order to engage in it more frequently. Typical comments were :

We are given time, we have the two periods over the fortnight and as long as they prepare their questions half an hour would be adequate...there is the time and the set up there ready for it. (teacher B)

...the mentors do have five hours a fortnight, so if the mentor was the person being observed they should have the time to do it. (teacher G)

What is interesting is that teachers who were not mentors and had no additional non-contact time in which to work with interns were equally positive, as can be seen in the comments of a maths teacher who was not a mentor:

...we could have done more of these situations. When I say my time is valuable, we probably spent half an hour...in a lunch hour, and provided it was not a regular commitment once a week or something then just the odd lesson here and there or the odd half hour here and there is fine... (teacher D)

Those whose views come within the second category were equally enthusiastic about the procedure, but felt that without more time it would not be possible to do it on a more frequent basis, a point supported by the two extracts that follow, first from a teacher who was observed by an intern in a different specialism, and second a mentor :

I'd be willing to do it - I'm sure most teachers would be ...most people would like to be observed and then interviewed. Time is the only thing (teacher H)

...the time is the problem...I can't see it fitting in with the present structure, they'd have to have a specific lesson set aside, more on top of what we've got already... (teacher K)

Finally, there was one teacher who fitted into neither of the two groups discussed above. She argued that such was the value of the procedure that it should take place on a regular basis, but as there were time constraints a brief discussion following the observed lesson should be considered. In her words:

I think it's up to the teacher to make time in a way. I know there are always other things going on, but they should make time...often students don't want to be too pushy and they won't say 'Come and talk about this,' because they know how busy teachers are...it's up to the teachers ...just a couple of minutes even is better than nothing, straightaway (after the lesson) (teacher A)

The final words in this section of the chapter come from a history teacher who scornfully dismissed the interviewer's suggestion that it might be argued that the procedure was too complicated and time-consuming and that, whatever the interns had accessed through the procedure, there might be easier ways of so doing. In her words:

I cannot think of a more efficient method. Teachers are under pressure at times and training new teachers is something that you must make time for, I don't think there is any way round this problem. Training teachers takes time, though. (teacher J)

### **In the role of teacher educator**

The teachers' interest in their work as school-based teacher educators is shown by their eagerness to talk about initial teacher education and about Internship as a way of

preparing new teachers, although none of the interview questions directed them to these broad topics.

A notable feature of this aspect of their talk is their endorsement of what they saw as the principles of Internship, not least the new and enhanced role for teachers. Typical of the comments expressing approval of the 'new arrangements' are the following:

The big difference with this new scheme is that the mentor actually feels they have a role and gets to grips with it, whereas before it was almost incidental conversations and things...it was very sort of haphazard, there wasn't anything you could really get your teeth into... (teacher K)

I was very sceptical about the Internship course in a way, it was a bit of the old 'we were thrown in to teach and we had survived', but in a sense I don't know if we did. ...What's nice about it (Internship) is that people actually do come to practise and think about the theory about what they are trying to do and that is different from the practical teaching practice where you are there all the time teaching a three-quarter timetable and then you're right away from the school and it's 'thank goodness that's over, it's been hard work, we'll go back and relax'... It is a real attempt to put the teachers at the centre of it and offering something they know best which is teaching - it gives them a real role. (teacher Q)

For a number of teachers, the interview was an opportunity to put forward their views on learning to teach. The extracts that follow reveal the diversity of their concerns and beliefs about what is important in initial teacher education. Such differences might lead to conclusions about the conflicting nature of teachers' theorising about learning to teach. On closer scrutiny, however, it can be seen that it is not a question of the teachers having mutually opposed views; rather it is the case that each emphasises one way of learning to teach, and argues for that way with great enthusiasm.

Teacher J was adamant that 'teacher training must be an interaction between practical experience with teachers and thoughtful analysis accompanied by reading'. For another teacher the central point was that real learning only comes with 'things not going right.'

As he goes on to explain:

They (the interns) begin to see, make connections with what's not right, and they're beginning to delve into how they can put right those things that they feel aren't going right. Yes, you've got to learn from doing. ..(learning) isn't internalised unless people have done things for themselves, and have found difficulties and anxieties about what they're doing... pain is a great motivator for learning and questioning teaching. I think we all learn when it goes badly. (teacher M)

The emphasis is very different for a teacher working in the same school as teacher M above:

(The interns need to understand that) in the end their teaching style will be very much influenced by their personality and children respond best to teachers who are acting in role and pick up people very quickly who are acting out of role and doing things because those things are thought to be effective. So I would like them to realise that they as teachers must strive to use measures that are natural to their personality... (teacher Q)

For one of the English mentors, however, it was the intern's relationship with teachers - and in particular, the mentor - that was the key to their learning:

The most positive thing in any student's favour is an ability to keep going and form a relationship with the teacher and to recognize they are under pressure and to nag them to be around at times when they can talk, but to be persistent also and be conscious they need to build a relationship with you in order to get the best out of you. (teacher O)

Indicative of their enthusiastic engagement with initial teacher education was the eagerness of many of the teachers to proffer suggestions for improving the course. While some of these were idiosyncratic in that they were a reflection of the role and position of individual teachers - for example, as a Head of Year teacher D argued for greater emphasis to be given to 'coming to grips with the role of form tutor' - running through these unsolicited comments is a strong motif: widespread concern about learning through observation. It is worth noting some of the observations and suggestions which were put forward.

These commonly reflected similar interrelated concerns: it was felt that observation could be improved, and could become a more worthwhile experience for both interns and

teachers, if there were greater clarity of purpose, more systematic organisation, and clearer rules of procedure.

In terms of purpose it was clear that for many teachers a key aim of observation was to enable student teachers to become aware of the wide range of practice in a school, and to this end they should observe a variety of teachers :

The more people they work with the better...to see that different things work in different ways ...and we're all happy in the way we feel comfortable and they've got to see that and be aware of that (teacher S)

Below, a maths mentor explains that although as a relative newcomer to the profession she is used to having other adults in her lessons, she feels anxious if interns observe her and do not comment on the lesson:

...if they (interns) are in my lesson and then don't say anything I begin to get anxious about it, how ever well I think the lesson's gone because of the natural insecurity we all have as teachers. So I feel that they have got to communicate ... one dreads them sitting and just going away thinking 'that was awful, I hope I can do better than that...' (teacher F)

This lack of feedback and communication is seen as a consequence of the frequent absence of clearly defined aims for the observation, a shortcoming well reflected by the following comment:

I usually try to involve them (the interns) when they're observing, a bit anyway, and I've never been sure if I'm supposed to...you see some of them writing furiously and you feel perhaps they should just sit there ...I'll throw it at you - when they are observing our lessons, should we really leave them in peace to quietly observe or should we encourage them to participate a bit? (teacher H)

For a history mentor, the unsureness that permeated much of her work with the interns could be overcome if the interns had a clearer idea of what they wanted, and what was expected of them.

...as somebody who has been teaching a number of years...it's very hard to know exactly what a learner teacher wants to know...you know a lot more but you, also it's hard to, to assume what it is they want to know...I often

found myself saying things and I got the feeling sometimes ... I don't really know that they felt that was valuable. (teacher L)

A suggestion common to those teachers who argued for a more systematic approach to the interns' school-based learning was for teacher modelling followed by intern practice.

For teacher C, this would be a very good way of working during the Joint weeks:

Say if Helen (intern) was looking at discipline or classroom control, she could watch one of my classes and me teaching and the next week when she came in she could take a parallel class and maybe use ideas she had seen me doing ...she could sit and pick up on a certain technique that I use and try it out for herself.

A second teacher was eager that during the school weeks all interns should 'have the opportunity to watch the so-called good lesson and then be able to practise immediately with an equivalent class.' Working in this way had enabled him to give his intern 'instant feedback on whether she could do it, and it boosted her morale and confidence.' (teacher G) In addition a number of teachers argued variously for 'the interns' questions to be more structured', for more opportunities for 'formal sort of observation of teachers with follow up discussion', and for 'more guidelines...as to what observation means'.

## **Conclusions**

As is indicated in the discussion of reactions to the procedure, apart from the two teachers who had reservations about the attitude or preparation of the interns, the evidence from the teachers suggests that they perceived interns as sincere in wanting to access their craft knowledge through engaging in the procedure. While it is clear that the procedure as experienced by the teachers varied in many respects - in a number, for example, the observed lesson served as a starting point for more generalised discussion - there were broad features common to all the cases. The interns determined what aspect of the teacher's teaching should be the focus of the observation; the audio-taped follow

up conversation was linked to the observation; the interns asked questions about the teacher's teaching.

The procedure as experienced by the teachers was, furthermore, of a new kind for most of them. They contrasted it primarily with being observed but not having the opportunity then to discuss what had been happening, and with having conversations with interns which were not rooted in any shared concrete examples of their own teaching; and they were generally enthusiastic and articulate about the merits of this unusual combination, and correspondingly negative in most cases about observation on its own. Their particular experiences of the procedure were appreciated because of the care with which the observation and the interns' questions had been planned, because these questions were precisely focussed on specific aspects of the observed teaching, and because of the demanding, interesting and intelligent nature of these questions.

The value of the procedure as experienced was variously attributed to its inherent characteristics as a procedure, to the qualities of the individual interns with whom the teachers had worked, or to the stage of the year. With regard to the latter, teachers emphasised interns' *readiness* to engage in such a procedure by that stage, especially because the interns had by then sufficient experience of teaching themselves to understand enough to be able to ask intelligent questions. Perhaps most important about the procedure was the way it combined the interns' agendas, ensuring that they were eager to learn from the experienced teachers, with the focus on the teachers' own teaching and thinking, something that was unusual in their conversations with interns or indeed with colleagues.

With regard to the specific occasion on which they had been observed and interviewed by the interns, with the exception of the teacher who commented on the difficulty of finding a lesson that was appropriate for the chosen focus and could take place when the intern was free of other commitments, the teachers were unaware of problems for the interns in finding the opportunity to engage in the procedure, since it was the interns who

had taken the lead and had made all the necessary arrangements. In making suggestions for the future use of observation and follow up interview, however, while all save one of the teachers argued that it should take place more frequently, there was less agreement about the possibility of that happening within existing time constraints. It would seem then, that although teacher attitudes to the procedure would not create problems for interns in finding the opportunity to engage in it, the concern of some with time constraints might well do so.

Remarkable by their absence were concerns expressed by the teachers about the formality of the procedure, either from the point of view of the arrangements made for time and privacy for the conversation, or in relation to the stylised conduct of the conversation. Perhaps the interns, who had been much concerned about such issues, managed to soften and adjust the formality so that it was not much noticed by the teachers. However the evidence of enthusiasm on the part of the teachers for the careful planning of the conversation, and the sharply focussed nature of the questions, suggests that they welcomed much of what the student teachers experienced as 'artificial'.

Two of the teachers claimed that their respective interns were successful in adding to their repertoire the teaching strategy on which they had focused in the procedure. While, then, the overwhelmingly majority of teachers made no claims about the ways in which the interns made use of the knowledge and expertise they accessed through engaging in the procedure, all save one had no doubts about the usefulness of the exercise for them, not least because the knowledge accessed - variously described as natural, taken for granted and automatic - was not usually articulated. In addition to the distinctiveness of such knowledge, the teachers also contended that it was especially useful in helping interns to understand the complexity of teaching and the sophisticated nature of teachers' classroom thinking. The potential practical benefits of enhanced understanding of teaching and of teachers were seen as the avoidance of experiencing failure in the classroom through being naively ambitious, and the increased likelihood of student teachers developing their own styles of teaching rather than aping the teachers with

whom they worked. Many teachers were also mindful of the benefits for the interns inherent in the process of pursuing through their questions the thinking underlying the teachers' observed teaching, arguing that it encouraged them to question their own developing practice and helped them to learn to think as experienced teachers.

With one exception the teachers were also conscious of the benefits accruing to themselves from engaging in the procedure. Their expressed delight and satisfaction at having the opportunity to talk about their actual practice in their own terms suggests that in their normal encounters with interns their craft knowledge remained tacit; and their claim that talking about their teaching in this way acted as a stimulus to their reflecting on it hints at the possible professional development benefits for them of working with interns.

# Chapter Nine

## The case studies

### Introduction

The focus of this chapter is on case studies of six intern/teacher pairs, two randomly selected from each of the three curriculum areas in which the interns worked. No new data were used in analysing these case studies; the data used were those that had already been used for the three preceding data-based chapters, namely conversations between interns and teachers following an observed lesson, interviews with interns and interviews with teachers. Although the data are not new, the purposes in using them are. The questions that were asked of these data in relation to each of the cases were :

1. In what ways are the participants' accounts of making arrangements for the observation and follow up conversation similar or dissimilar, consistent or inconsistent?
2. How do the participants' constructions of the observed lesson and of the follow up conversation relate to each other? How related are their perceptions of what made the lesson interesting for the purposes of the exercise?
3. What relationships are there between the participants' conceptions of this kind of exercise and of its usefulness?
4. In so far as they talk about the particular occasion, in what ways are their perceptions of factors that facilitated or constrained the exercise similar or different?

5. In what ways and to what extent do the ideas expressed in the interviews reflect the nature of the conversation?

## **The cases**

### **Jane and Megan**

Jane, a maths intern working in a 13-19 Upper School, was not known to the researcher. Megan, the teacher with whom she carried out the observation and discussion, was head of year and second in the maths department, and had worked with Jane not as mentor but as a member of the host department. One of Megan's closest colleagues in school was a long-standing friend of the researcher. The lesson observed and discussed was a third year (year 9) trigonometry revision lesson consisting of exposition and practice.

Jane found setting up the procedure a complicated operation. She was too busy during the S week period to negotiate and carry it out, and then found that when she did have some time during the second J week period after the school summer half term, there was a problem of 'finding classes' to observe as students in their last year of school were leaving and some of those staying were involved in special activities that took them away from their normal timetable. For Megan, on the other hand, it was unproblematic, perhaps because with the initiative coming from the intern she saw herself as a relatively passive partner in the negotiating process. It is equally possible that as an experienced teacher who was a head of year she was more used to, and more phlegmatic about, being involved in activities additional to her regular timetabled ones.

Jane's chosen focus was classroom control and 'how she (Megan) kept everyone working all the way through the lesson. And how she dealt with individuals who got bored, and how many people were actually doing what they ought to be doing at any one time'. Jane was used to working with Megan and was full of admiration for what she saw as the kind

of classroom control she wanted to incorporate in her own teaching. She picked out Megan's calmness as important, but there were other aspects of her expertise that she could not explicate - 'she just seems to have this, I don't quite know what' - that she was interested in unravelling.

The conversation between Jane and Megan was a relatively brief one of twenty four moves: as Jane said, it lasted 'fifteen, twenty minutes if that'. Both described its overall structure in similar terms, that is Jane asked Megan the sort of questions which in the latter's words, 'I will quite happily natter on about for quite a while', a description borne out by the content analysis data which shows that the conversation was dominated by questions from Jane (37% of all moves) and responses from Megan (38%), the rest of the conversation being taken up with Jane's reactions to what Megan had to say. The absence of structuring moves suggests that Jane refrained from talking about her own teaching and that Megan focussed on the questions she was asked.

In the light of Megan's assertion that it was good questions from Jane that had made it a good conversation, it is worth taking a closer look at the nature of those questions. Jane herself claimed to have taken account of the advice given to interns about 'not getting the teacher's back up, talking about open questions and being specific and not saying "Why didn't you do such and such a thing?" '. In terms of the openness of questions Jane's were broadly typical, 50% were open, and 50% closed. That 89% of her questions were related in some way to an aspect of the particular observed lesson also makes her average; what is unusual is that so many of that number were generalised questions rooted in the specific lesson rather than questions about the lesson itself. Whereas for all the cases the average percentage of questions about the specific lesson (specificity level a) was 49%, and 26% for the more generalised questions related to the observed lesson (specificity level c), Jane's were 25% and 63% respectively. The example of a question Jane furnished in her interview was of this more generalised kind, and interestingly, was also closed - ' "Can you expect to have all of your pupils concentrating all the time?" ' - and Megan commented that although the conversation began with talk about the specific

lesson it later broadened into 'much wider issues', a point supported by the coded transcript which reveals that it was the first two questions only that focussed on a specific aspect of the particular observed lesson. The coding also shows that Jane along with all the other interns was successful in avoiding questions of the type 'Why didn't you'...?' as no negative evaluations were recorded. An unusual feature of the conversation was that Jane did not ask a single question seeking a purposive or causal explanation; 50% of her questions focussed on procedural aspects of teaching whereas the average figure was 16%. This high incidence of 'how' type questions is reflected in the interview responses of both intern and teacher: 'she was asking me how to do things', said Megan; and Jane in commenting on what she had learned from the conversation talked in terms of techniques employed by Megan to achieve her goals.

Megan's remark that 'it was more a conversation than an interview' suggests that she felt at ease during it which may be due in no small measure to the way in which Jane reacted to what she had to say: all the reactions in Jane's talk were of one kind, namely expressing agreement.

The conversation is also distinctive in relation to the type and level of intentionality of outcomes. 45% of outcomes in Megan's talk were concerned with desirable state of pupils or of pupil activity, as opposed to an average across all cases of 28%; in Jane's case, all outcomes were of this type, again a far higher incidence than the average 32%. And whereas the overall pattern for level of intentionality of outcomes shows expectations as an average 6% in teacher talk and 4% for interns, in this case it was 18% for Megan and 25% for Jane. The single example of a question Jane gave the interviewer - and referred to earlier in this discussion - underlines this concern with expectations of pupil state and activity. The overriding concern of both Megan and Jane with pupil state and activity is further highlighted by the fact that 76% of the factors taken account of by Megan were concerned with pupils, and that in talk that was especially rich in factors taken account of with 4.11 per teacher move compared with the

average 1.69; and for Jane the figure was 100% as opposed to an average for all intern talk of 69%. Megan's pre-occupation with pupils is also evident in the interview:

I think I made the point to her that I was changing what I was doing in the lesson according to the vibes I was getting back from the kids, and that's what I was looking for from them - the cue to me that they were getting bored or they didn't understand - and I just did the normal things like asking them 'Are you O.K. with this? Shall I go on?' and if the majority said 'yes' then I went on. If they said 'No', I would have given them another basis example to try themselves.

The declared belief of the two participants that the planning and teaching of established teachers was different to that of novices, together with Jane's professed admiration for some aspects of Megan's teaching and the latter's admission that much of what she did was 'automatic', indicated that there was every chance of Jane accessing elements of Megan's professional craft knowledge in the conversation. Judging from the two interviews and from the conversation, such chances were realised.

Jane's interest, as mentioned earlier, was in understanding how Megan ensured that everyone was on task throughout the lesson, an aspect of teaching that she saw as part of 'classroom control'. There are also indications that this interest was driven in part by a desire to understand what expectations of pupil concentration and general behaviour a teacher might reasonably have. Jane was in no doubt that the conversation enabled her to take note of, and understand, some of the techniques used by Megan, and helped to clarify her thinking about expectations.

Megan was adamant that Jane's questions had made her think about those things that she did automatically and usually 'without thinking', and in talking about what she had said to Jane in the conversation emphasised the importance of being flexible - 'changing things according to the vibes I was picking up'. Her memory of the conversation was that she had explained how she got pupils to sit down and concentrate, and then was alert to such cues as '... the movement about, the twitching, getting bored, the drawing on the books ...; and she asserted that she had explained her actions and the reasons for them.

That Jane succeeded in getting access to Megan's craft knowledge is suggested by the high incidence in the latter's talk of goals and actions tempered by an array of conditions. Her response to a question from Jane about how she decides how long to spend 'expounding at the board' provides a graphic example of this:

I don't actually time it, though I'm conscious that if I talk too long and there isn't time for them to practise their skills, it's blown it. It's a blend of, I know the certain topic areas I want to cover and I gauge it by how they're responding to it. So, if for example I did three different types of examples on trigonometry, if I felt they really were not with me at all, I would have done some more examples on the board. But this was a revision topic so I felt that one of each type would be sufficient to refresh their memory which was all I was aiming to do. But to be structured rather than just to say, 'You remember this, don't you?' To start from first principles- it was very much the way that I'd talked about it when we had it in other lessons so I was really just repeating what I'd said several months earlier. It's very much gauging what their reaction is. If they were getting bored then that perhaps would indicate to me that I could speed it up a bit and not be so protracted in explaining what went where and why.

Jane and Megan were both satisfied that the time given to the observation and follow up conversation had been well spent. They were also in agreement that the 'formality' of the procedure, by which they meant that it was planned in advance with time set aside for a follow up conversation, and the fact that the intern had been given detailed advice about how to conduct the conversation were important factors in its success; Megan was especially impressed with the questions that Jane prepared during and after the observed lesson. For Megan the 'rapport' that she claimed existed between the two of them was a contributory factor in its success, and there is the suggestion that had she not seen Jane as an intern who would 'pick up' on what she had to say in the conversation, then she might not have been as fulsome in her reaction to it.

Jane had observed Megan keeping the pupils engaged throughout the lesson - something she wanted to achieve in her own teaching - and in the follow up conversation she had been able to ask the questions she had prepared, the responses to which she found 'enlightening', not least because she came away with techniques that she hoped to incorporate in her teaching when established with classes, and a clearer understanding of

what constituted 'realistic' expectations of pupil behaviour. Megan, for her part, derived satisfaction from having been forced to 'think deeply' about routinised aspects of her teaching and from having the opportunity to talk about 'this trying to read your audience', a skill that she felt was 'transferable' to working with pupils both in and out of the classroom.

It was not unusual for Jane and Megan to talk, and Jane was familiar with Megan's teaching. It is interesting, therefore, to note that the reason for their claims that the exercise had been a success was the recognition that on this occasion Megan's talk had been of a different kind. The conversation was brief, but it was very much to the point with both participants taking the exercise seriously. Jane and Megan obviously worked well together as student teacher and experienced practitioner. A striking feature of the interviews is the similarity of the terms in which they talk of each other: Jane 'admired' various aspects of Megan's teaching; and for her part, Megan declared herself 'impressed' with Jane 'in the classroom'. Jane and Megan clearly worked well together as student teacher and experienced practitioner, and it would seem that their respect for each other's practice was a key element in their successful experience of the procedure.

### **Elaine and Denise**

Elaine was an English intern and was therefore known to the researcher, but as she was not a member of the researcher's curriculum group of interns contact between them was limited. Denise was a teacher on a year's exchange visit from abroad, and was a member of the English department where Elaine was based. Prior to the interview the researcher had met her briefly while making visits to the school in her capacity as Internship Field Officer. She was not Elaine's mentor nor had she worked closely with her, but they had talked on a number of occasions and Elaine had observed Denise teaching early on in the PGCE year. The school, a relatively small city upper school, was well-known for the warmth and friendliness of its staffroom atmosphere. The lesson observed was a discussion lesson with a fourth year (year 10) group .

Elaine's approach to the task of observing and having a follow up conversation with two teachers was not whole-hearted; this was something that had to be done for the purposes of the self-evaluation curriculum assignment, a task that she did take seriously. The procedure was something to be 'cleared', and it was with this attitude of having a chore to complete that she set about making arrangements to observe two teachers. She 'found it a difficult time to try and sort it out' as the 'fifth years were disappearing' and there was 'only one English teacher that was left' as she had worked with the others, so following the suggestion of one of the teachers she approached an R.E. teacher whom she saw as having 'all these qualities' that she wanted to look at. The conversation with the R.E. teacher was the second one to be arranged, but it took place before the one under discussion and had some bearing on the way the latter was carried out; it is for this reason that it is referred to here.

There was no problem in making arrangements with a teacher from the department to which Elaine was attached, and Denise, as the one English teacher with whom she had not worked closely was the obvious choice. Denise was 'helpful' and 'very relaxed about it' which Elaine ascribed to her being 'very used to having people in observing her.' It is possible that one of the reasons for the ease with which arrangements were made was that Elaine was content to observe any of the teacher's lessons rather than select one which would be especially appropriate in the light of her chosen focus. In her words:

I think you have to end up with just taking whatever you get, and to try and manipulate it towards what you want it to. It's not a case of saying, 'Well, I want to specifically look at this, could you tell me a lesson where you do it?' because (a) it doesn't happen and (b) it's not fair to them to say... 'I want you to go and teach this because I want to see how it works.'

The conversation about the lesson took place in a small private room, the only interruption an especially powerful electric storm.

For Denise, the arrangements were very straightforward: they agreed that Elaine should come to observe one of her lessons during the morning of a day when she had no teaching commitments in the afternoon so that they could discuss the lesson after lunch.

At first sight it would appear that Elaine's contention that the conversation lasted for 'well over half an hour' was misleading as the conversation comprised only twenty moves. However, Denise's description of herself as tending 'to go on at great length' proved accurate: she was generally very expansive in her responses to questions - one move, for example, contained 606 words - making the conversation longer than the total number of moves suggests. The conversation was typical in that it was dominated by solicitations from Elaine - 45% of all moves in the conversation including 10% probes - that elicited responses from Denise; it was, however, the only conversation in which there were no student reacting moves.

It is worth looking at the questions asked by Elaine in the light of her comments about the way in which she carried out this conversation. Her experience of the first attempt at the procedure - with the R.E. teacher - left her feeling somewhat jaundiced about the advice she had been given at the University. In attempting to follow the guidelines, especially those concerning the avoidance of closed questions, she had asked what she called 'stupid questions' because 'teaching's not like that'. In the conversation under discussion she decided to eschew the guidelines resolving, in her words, 'to do it my own way and see what happens'. It is interesting, therefore, to note that in terms of openness Elaine's questions of which 43% were open and 57% closed were typical. There is, however, evidence to suggest that Elaine did 'do it' her own way, as in a number of respects her questions are distinctive. Across all the conversations the majority of questions - average 59% - were of the purely descriptive kind; a very high 71% were of this type in Elaine's case. Moreover, the remaining 29% were 'how' type questions compared with the average 16% , a reflection of her concern with procedural aspects of teaching that was commented on by Denise - '...she seemed to want to discover how you did that or how you seemed to do it so effortlessly...'. Elaine's

questions were also unusual in that 29% of them, as opposed to an average for all cases of 6%, related to a specific occasion or occasions other than the observed lesson (b level of specificity), a feature underlined by her remarks in the interview that she had been interested in finding out what Denise had done at the beginning of the year when she first had the class.

Another unusual feature of the conversation is the high incidence of outcomes in Denise's talk. A level of 1.45 per move compared with the average of 1.16 is worth noting especially as in Elaine's talk the figure - 0.33 - was lower than the average for all interns of 0.44. Even more striking, however, are the figures relating to the types of outcome with which both were concerned. In Elaine's case 67% of outcomes were about desirable state of pupils or of pupil activity, more than twice the average 32%, while for Denise it was 50% as opposed to an average of 28%. In addition, it is worth noting their apparent lack of interest in short term pupil progress: in Denise's talk a low 6% (compared with an average of 26%) were of this kind, while Elaine was one of the ten interns in whose talk there was no mention at all of pupil progress. In terms of level of intentionality of outcomes, the two participants differ; whereas Elaine talked of outcomes twice as much as she did of goals, which made her average for all interns, Denise's interest in outcomes rather than goals - 75% and 13% respectively - was unusual, as in most conversations teachers talked as much of goals as they did of outcomes. Apparent lack of congruence between Elaine and Denise is also suggested by the incidence and type of factors taken account of: Denise's talk was not especially rich in this respect (1.36 per move compared with an average of 1.69), but Elaine's was outstandingly poor as she was the only intern who made no mention of them. Since it is clear that Denise was not following Elaine's lead, it may be inferred that the factors mentioned were important to her, an inference given support by some of her comments in the interview when she recalled how she had explained to Elaine that because 'the kids are very good at picking up on something that is false', it was important that she behaved in ways that she 'was comfortable with, not artificial'. Denise was not unusual in making more references to pupils than to all other factors combined, but she was untypical in the

extent to which she took account of teacher state - 20% of factors taken account of, as opposed to an average of 7% for all teachers.

Elaine set about both observations with a concern about 'discipline - just how do you get them into the classroom, settled down, how do you start on that work?' In observing Denise she was also interested 'to look how you actually instigate a new topic...or how you go actually go about starting up and bringing back together a discussion group.' In the light of such a wide range of interests it is not surprising that Denise believed the focus of observation to be the lesson as a whole. Elaine's memory of the conversation was not as full as Denise's - due in part perhaps to her frustration at not getting access to what she had wanted - and at times, especially when talking about her disappointment with the outcomes, she did not distinguish between the two conversations:

I wanted to know about the discipline aspect with both teachers and I asked them quite a bit about it, and I found it very difficult to get them to actually say how the discipline thing worked...because they're both experienced teachers they found it very difficult to think back to how they got that situation started, to actually voice that. And they weren't aware of what they were doing, but it was just a natural thing to them. And I found that very difficult to get beyond that stage.

Getting 'beyond that stage' meant getting the teachers to talk about what they had done about discipline when they had been in a position similar to her own as a novice teacher, and she was clearly frustrated when they could not:

...well I said to them 'When you first started teaching, how did you feel? Was that very different?' And you know, they went 'Well no, I just always did it that way.' Which I must admit I couldn't see that, I am sure there must have been a change at some point. They must have learned through trial and error, through experience, but it was very difficult to get them to actually ...voice that.

Denise, on the other hand, felt that the conversation gave her 'an opportunity to articulate some of those things' that she had 'internalized' which enabled Elaine to understand why she did what she did. She saw the conversation as focusing 'primarily on classroom management' as Elaine wanted 'to discover how you did that or how you seemed to do it

so effortlessly,' adding that they moved on from there to talk about the impact on discipline of the way ideas were presented. Two key ideas that Denise believed she had conveyed to Elaine were the importance of developing a classroom persona with which one is 'comfortable', and of being prepared 'to give of yourself to young people' rather than confront them.

Interestingly, the conversation data suggest that these two apparently irreconcilable perceptions of the conversation are equally tenable: the differences between them lay not in their accounts of what was said in the conversation, but in their expectations of it and their perceptions of its usefulness and value. Denise's description of the conversation as 'moving off into other areas as you talked about something that you are interested in or teaching in a particular way...' is supported by Elaine who talked of Denise and other teachers 'picking up on a point in a question that when you said the question you didn't intend to pick up on, and then they go and talk at length quite often about something that's close to their heart, but you may not be finding out things that you set out to find out.'

In the exchange quoted below, there are indications of Denise having difficulty explaining how she had achieved the classroom atmosphere in which Elaine was interested; equally, there are signs that in trying to explain to Elaine that teaching was complex and that discipline was linked up with the teacher's whole approach to teaching, she was 'articulating' some of the things that over the years had become 'a natural part' of her teaching:

Elaine: At the very beginning of the lesson, there was , not an actual moment where the lesson started because they just, you didn't have to say, 'Right you sit down, be quiet,' they actually did it automatically. How did you achieve that kind of situation?

Denise: I'm not sure. There were lots of times when I never thought I would achieve it with that group, but for some reason and I really don't know why, one particular moment they just began to respond - it was almost like when you learned how to read, you were never quite sure when it was that you couldn't. But I can remember having real difficulties with them at the beginning of the year, and thinking my approach would never

work. It seems to have worked and that's just simply I think because I gradually worked on them individually and more or less eliminated those people that cause any kind of problem. I mean I actually stopped them from causing a disturbance, and then allowed the rest of the class just to get on with it, and they now seem to recognise quite easily that we are going to start, and they do that nicely.

In response to further questions about her approach and whether she had taught that way at the beginning of her career, Denise explained how she tried to avoid being aggressive and used 'positive reinforcement', adding that from the beginning she had worked to be seen by her students as 'someone who's actually trying to do something for them.' From the conversation it seems that Denise tended to move quickly into generalised talk about her beliefs and general approach to teaching - encouraged perhaps by questions about her 'approach' - with aspects of the specific observed lesson used more to illustrate these generalisations than to stimulate the unpicking of knowledge embedded in routine practice.

Elaine had wanted to know how she could achieve 'the perfect classroom atmosphere' that she saw in Denise's class where a group of 'difficult children...just sat there, they did their work, they joined in'. She came away disappointed and frustrated, claiming that she learned nothing from Denise that she 'wasn't aware of already', but that she had 'been left with lots of questions' which forced her 'to clarify' her 'own thoughts' :

...(Denise) actually said, 'As soon as you lay down rules they're going to be broken because that's the nature of rules in a school.' And I had gone in, I hadn't questioned the fact that children need to know exactly where they stand, and I felt it was very important to lay down the rules straightaway...So I found that very interesting and quite a problem ...I wrestled with that one for a while. You know that sounds so calm and logical and reasoned that it must be right, but yet why did I go with this idea? And eventually I sort of thought: 'Well, yes, that may work for them, but I still believe that you do need to lay down some rules.'

For Elaine, engaging in observation with a follow up conversation had been useful in so far as she had 'learned things not to do' which 'saves you making mistakes, finding out the hard way'. She also saw it as valuable for Denise who 'had to stop and think and

question things'. For her part, Denise made no attempt to conceal the enjoyment she claimed to derive from it. Describing herself as a teacher who does not feel threatened when asked about her teaching and as one 'who loves to talk about it so much', she thought the procedure a 'worthwhile' use of time as Elaine had learned from it and she herself had had to think about her teaching. She had felt able 'to talk freely' because Elaine's manner was unthreatening, time had been set aside for the conversation, and it had taken place in a private room away from the staffroom. She also hinted that the success of the conversation was due in part to the fact that she herself had a very 'positive attitude' to the 'profession'.

Elaine was a very self-reliant intern who claimed that she had not sought or received much help from the teachers with whom she worked: '...they let me get on with it...which is the way I like to work', asserting that she had learned to teach through 'trial and error, and sorting things out in that way'. It should come as no surprise then to find her wary of the value of engaging in the procedure, and then following her experience of it with Denise, cynical of its usefulness. She was looking for answers to problems she had encountered with some of her classes, and while asserting that teaching is 'very personal' and that you learn 'through your own experience', was hoping that Denise would be able to tell her how she had gone about classroom discipline when she had been starting out. It would seem that Elaine genuinely wanted answers to her questions, but they were questions that could have been answered in a more general conversation not pegged to a specific observed lesson. For Denise this was an opportunity to talk enthusiastically about some of her core beliefs as a teacher to a student teacher who appeared interested in her teaching. They had not worked together during the year and there was thus no shared understanding of each other's beliefs and concerns acting as a platform to this particular conversation.

## Stuart and Andrew

Stuart was a member of the English curriculum group of interns for which the researcher was responsible; they had, therefore, worked together both in the university and in school and knew each other well. Stuart's Internship school was an 11-18 mixed comprehensive in a largish market town. Andrew was not his mentor, but was one of the English teachers with whom Stuart had been working throughout the year. All the members of the school's English department were known to the researcher through her regular visits to the school as English curriculum tutor.

Stuart carried out the procedure with two members of the English department. He approached Andrew partly because it was 'convenient' as he had been 'assisting' him with a first year class (year 7), but he also regarded him as relatively 'innovative' and 'very interested in new ideas'. Above all, however, it was his perception of Andrew as a self-effacing teacher who 'needs a formal situation to bring him out' that led to Stuart engaging in the procedure with him in the hope of 'finding out his motives'. Setting up the observation and follow up conversation presented neither of them with any problems, but their accounts of making arrangements differ in some respects. Stuart explained that he simply informed Andrew that on a given day he would be 'observing rather than assisting' as the first year class worked on a newspaper project using information technology; Andrew, however, recalled deciding which lesson would be most appropriate, 'a setting up lesson rather than a doing lesson'. The conversation took place in Andrew's office the day following the observation. Of interest is the fact that on a previous occasion Andrew had been taken by surprise when at breaktime in the staffroom following a lesson with the same first year class Stuart had asked him about his teaching. It is clear from the two interviews that this was seen as a way of preparing for the audio-taped conversation under discussion.

In terms of overall structure the conversation was typical in that it was dominated by solicitations from Stuart and responses from Andrew, which together with reactions and

reaction/solicitations from the former made up 88% of the moves, the average across all conversations being 79%. In recalling the conversation both participants commented on the number of questions Stuart asked, and the content analysis reveals that with 33% (average 21%), it was one of the conversations with the highest proportion of student solicitations. From the fact that there were only three reaction/solicitations, it would appear that Stuart tended to move quickly from one area of interest to the next rather than extend discussion about a particular topic by asking follow up questions, which may account for his reference to 'bombarding' Andrew with 'lots of different questions'.

In his interview Andrew made constant reference to Stuart's questions with which he was 'most impressed', describing them as 'very sharp' and 'going to the point of why I do things in the way I do and why I think it's better that way'. It is interesting, therefore, to note that in terms of question type Stuart was no different from most interns in that his questions were overwhelmingly of the purely descriptive kind (type c); indeed, the percentage of 'why' type questions (type a) - 19% - was lower than the average of 25%. As in most conversations, the split between open questions (type a together with type b, partially open) and closed questions (type c) was around 50%; but whereas most interns asked no partially open questions, one in four of Stuart's questions was of this kind, leaving only 19% as fully open questions (type a), compared with the average of 42%. His remarks that although he found the particular observed lesson a 'good starting point' for his questions, he was interested in broader issues and also in what Andrew 'was going to do next' with the class is borne out by the content analysis. While only 13% of his questions were formulated in terms of generalisations not directly related to a specific aspect of the observed lesson (level d), relatively few - 38% as opposed to an average of 49% - were of specificity a, a specific question focusing on a particular aspect of the observed lesson. In addition 19% of his questions were of specificity b (concern with a particular aspect of another specified lesson(s), including those in the future) for which the average was 6%.

It would appear then that in framing his questions Stuart had to a large extent disregarded the guidelines. What is interesting is that his interview responses point to this being a conscious decision on his part rather than the result of his misunderstanding them or experiencing difficulties in attempting to follow them. As well as stating that he 'had no difficulties with the questions', he pointed out that 'they were different from what you'd been asking for', a reference to the fact that the English interns had been introduced to the guidelines by the researcher in her capacity as English curriculum tutor. There is, however, evidence to suggest that Stuart had followed the advice about being generally positive and encouraging in the conversation: there were no negative evaluations or probes seeking justification, and all but one of the other reactions were expressions of agreement (reaction a1), with the remaining one an expression of positive affect (reaction b1). This, together with the fact that all three of Andrew's reactions were expressions of agreement, lends support to Stuart's contention that he avoided putting Andrew on the defensive with his questions. An unusual feature of Andrew's responses, but not altogether surprising given Stuart's questions, is the extent to which they focussed on particular classroom events on other specific occasion(s), including in the future (specificity b); 26% of his responses were at this level of specificity, the highest for teacher talk in all the conversations.

An interesting feature of this conversation is that whereas the talk is typical in relation to mention of outcomes, it is unusual with respect to types of outcome. Stuart, as well as having a much higher than average interest in pupil state and activity (outcome c) and pupil short term progress (outcome a) with figures of 71% and 29% respectively against averages of 32% and 17% in intern talk, showed no interest at all in outcomes falling outside of the four delineated categories (outcome e), which in the conversations as a whole was the most popular in intern talk with 41%. Thus, unlike the average intern teacher pair, Stuart and Andrew were frequently not concerned with the same kinds of outcomes. With regard to level of intentionality of outcomes, Stuart was unusual among interns in showing as much interest in goals as in outcomes, and in this respect there was very little difference between his and Andrew's talk. Stuart's comment that he was

interested in understanding Andrew's 'motives' may help to explain his enhanced interest in goals revealed in the conversation.

In relation to factors the conversation is distinctive in a number of ways. First, Stuart's talk was very little concerned with factors, with 0.12 per move; and while Andrew's talk, with 1.17 factors mentioned per move, was typical of teachers, his total 'factor score' was well below average. Secondly, Andrew was untypical in his talk of taking account of resources (factor c) - 18% set against an average of 3% - and since there was no mention of resources in Stuart's talk it may be inferred that this was a factor of importance to him.

Andrew's assertion that Stuart's questioning made him 'reflect' on the way he taught is supported by the relatively high incidence of mental activities in his talk, none of which were directly prompted by Stuart's questions in which there was no mention of them. Andrew talked in evaluative terms about his teaching and typically both negatively and positively, and consistent with those of the teachers who talked of alternatives all five mentions by him were concerned with alternative actions. Andrew was also one of the small number of teachers keen to talk about their knowledge and understanding.

Stuart went into the procedure with no specific focus, but with the intention of asking questions about any aspects of the observed teaching that interested him. As Andrew was teaching the newspaper project for the first time, one of the things of interest to Stuart was 'seeing his dilemmas, what he was finding problematic with it, what he wanted to get out of it,' not least because it was the kind of project he himself was interested in teaching, which may account for his seeing the conversation 'as much as an advice thing for me, as learning about him in that particular situation'. As the observed lesson was the first in a series on the project, Stuart was also keen to go 'beyond' the lesson to find out how Andrew intended continuing with it. It is clear that he planned to base the conversation on the lesson; it is less clear what aspects of Andrew's expertise he was hoping to access.

Stuart's memory of the conversation was detailed and accurate to the extent that he recalled every subject that was covered in what was a very eclectic conversation full of questions that were not linked by a single focus. From his account of it, two points emerge. First, his interest in the 'content' of the lesson led to their talking about Andrew's plans for taking the newspaper project forward, and although he was satisfied by what Andrew had to say, it is clear from the transcript of the conversation that this talk was essentially de-contextualised. Secondly, in getting Andrew to talk about specific events in the lesson, he came to understand Andrew's reasons for his various actions, and in so doing realised that even apparently 'trivial' actions and decisions were important as, far from 'random' they were part of a coherent broad approach to teaching. The exchange quoted below illustrates this point:

Stuart: This is a really stupid question but you gave somebody a pen at one stage - do you always keep pens on hand, do you think that's...?

Andrew: No, I don't think that's a stupid question at all. I think that's absolutely fundamental with certain groups. If you've got somebody plaguing other people and saying, 'Can you lend me a pen, can you lend me a pen?' - and that can last five minutes or longer than that, you know that child isn't working, meanwhile you've shut everybody else up, he's the only one who's walking around the room saying, 'I haven't got a pen'...It can mean a very messy start to a piece of work. You've got the points over, they know what they've got to do and then there is this wretched disruption. So it's just so much easier...to say 'Right, here you are,' and give them a pen ...I keep a stock of writing implements and it's invaluable with certain groups who will not turn up equipped and you've got to decide whether it's worth making a fuss about it and saying 'You don't come prepared, you haven't got your pen or ruler or anything!' And they say, 'So what!'

Andrew could not recall any substantive details of the conversation; his memory was of being forced to think about his reasons for pedagogical decisions that he 'sometimes' made 'subconsciously ...because that's the way you teach', and there are indications in the conversation that even when Stuart's questions were of a descriptive kind, he tended to talk about reasons - but usually without revealing his reasons for specific actions taken. In the quotation below, Andrew tantalisingly lists the factors of which account might be taken:

Stuart: You allowed Natalie to kind of talk quite a while, and at times she was saying things that wasn't very clear. Is that something you would normally do, sort of allow kind of thinking it through like that?

Andrew: It's a very difficult thing to gauge. You want people who are possibly, who find it a little bit harder to express themselves although in her case she's keen to do it, she's very keen to try to express herself, which is a good thing. But when it rambles on and on and people start talking you lose the discussion because they haven't got something succinct to say and people don't want to listen to it. So there has to be a cut off point somewhere and it's deciding where it is which you can only do through experience I think, and deciding how bored the rest of the class are getting with this long involved explanation of something.

The exchange above also perhaps helps to explain why Andrew tended to talk in generalised terms as opposed to revealing his thinking behind the events of the observed lesson; in his question Stuart made it clear that the specific action he had noticed served to stimulate his interest in finding out what Andrew would usually do.

Andrew was adamant: it was the sharpness of Stuart's questions - which he assumed was the result of careful preparation - that had made him think, and it was the fact that the procedure took place at a stage in their relationship when they were able to relax with each other that had prevented him from feeling uncomfortable. Stuart was equally clear that although he sensed that initially Andrew had found the audio-taping 'inhibiting', it was the 'ritualised' nature of the procedure that had facilitated Andrew's talking as he was a quiet person who 'needs a formal situation to bring him out'. He also suggested that the delay in having the conversation until the day after the observation 'had a positive effect' because 'the distance' from the lesson made Andrew 'think more about what he was trying to achieve'.

Both participants commented on the enjoyment for Andrew of engaging in the procedure, he himself pointing out that it had provided him with a rare opportunity to 'reflect' on his teaching. Andrew also claimed that Stuart, having in the conversation gone 'one step behind' the teaching 'finding out reasons all the time', would now be

constantly asking of his own teaching such questions as ' "Why am I doing this? What are the children getting out of it?" ' For Stuart it had been an 'interesting' experience. He had acquired some ideas about ways in which computers could be used in English lessons, and the conversation had helped to 'fill in a picture' of what Andrew 'as an experienced teacher thought was acceptable in the classroom' and of what he did to maintain 'his kind of self-effacing poise'.

Stuart and Andrew were both well pleased with their experience of the procedure, claiming that it had been an enjoyable and worthwhile conversation. Stuart clearly respected Andrew as a teacher, and his aim of making use of a relatively formal procedure to get a normally reserved and reticent teacher to talk about his own teaching, worked very well. Andrew regarded Stuart as a thoughtful student teacher who was keen to learn and 'knew what he was talking about'. Stuart clearly understood the guidelines, and he was able to adopt the stance and tone implicit in them while adapting some of the specific recommendations to suit his purpose of having a conversation with Andrew that went beyond the events of the observed lesson.

### **Lorna and Frank**

Lorna was one of two history interns in an upper school and Frank was an English teacher who, while not a mentor, was used to working with student teachers and during the year under discussion worked with the pair of English interns in the school. The researcher did not know Lorna, but she had met Frank socially on a number of occasions through a mutual friend, and had had a number of casual conversations with him on her visits to the school as Field Officer.

Lorna decided to observe a teacher from a different department because she knew the history teachers well and saw this as an opportunity 'to see different things and different subject areas and to see whether the same sort of things were motivating kids'. On another intern's recommendation and from her own perception of him as 'a nice person'

and as 'the kind of guy who would motivate and interest and involve everybody in his class,' she chose Frank.

Lorna found setting up the procedure rather complicated because she had a fairly full teaching timetable and her non-contact time did not coincide with Frank's. Throughout the negotiations, however, she found Frank very helpful and it was arranged that she should observe him two weeks later when he would be launching a new project with a third year (year nine) 'mixed ability class', and then talk to him later that day. For his part Frank found it 'quite flattering' to be approached by an intern from another department who left him satisfied that he 'knew what I was letting myself in for'. The conversation took place in Frank's 'comfortable' office attached to the sixth form block at a time when few sixth formers were about, conditions described by Lorna as 'ideal'.

In terms of broad structure an unusual feature of this conversation was the type of moves in Frank's talk: it was one of five in which the teacher asked the intern a question, and one of three in which teacher reacting moves accounted for more than 10% (in this case 13%) of the total number of moves in the conversation. 56% of Frank's reactions expressed agreement and a further 33% were an elaboration of what was said by Lorna, which may account for her description of him in the conversation as 'really pretty easy to get along with'. The agreeable tone of the conversation referred to by both participants can also be seen in Lorna's talk: 29% of her solicitations were positive in their evaluation, considerably more than the average 10% for all interns.

Lorna's contention that she 'was conscious of phrasing the questions correctly' is supported by the content analysis of her solicitations. Whereas in terms of type she was very much an average intern with 58% (average across all cases 59%) of her questions of the descriptive kind (category c), 25% (average 25%) 'why' type questions, and 17% (average 16%) of the 'how' type, in relation to openness and levels of specificity her questions were above average in their adherence to the procedural guidelines. 58% of her solicitations were open as opposed to an average of 42%, and she was one of 13

interns (out of a total of 28) in whose talk there were no questions formulated in terms of a generalisation not related to a specific aspect of the observed lesson (specificity d). In her interview Lorna talked of asking Frank 'specific questions about what he did in the lesson', an observation that is borne out by the analysis which reveals that the number of questions focussing on a particular aspect of the observed lesson (specificity a) was high, 75% compared with an average of 49% for all interns. The fact that 60% of Frank's responses were of specificity a - the average being 43% - is a further indication that this conversation was unusual in the extent to which the talk focussed on the particular observed lesson. The one element of the guidelines that Lorna appeared to ignore was that concerning probing; 0.17 for the ratio of reacting/soliciting moves to solicitations is low in comparison with the average of 0.56.

An interesting feature of this conversation is that whereas mention of pedagogical actions was higher than average - they were mentioned in 82% of moves in Frank's talk compared with an average of 69%, and in 76% of Lorna's moves as opposed to an average of 68% - incidence of outcomes was either typical, as in Frank's case, or lower than average which was the case for Lorna. Lorna's talk is also distinctive in relation to type of outcome; 75% were concerned with desirable state of pupils and of pupil activity and 25% with short-term progress, compared with the average for all intern talk of 32% and 17% respectively, figures which are perhaps best seen in the light of her declared interest in 'motivation - pupil interest and involvement'. Frank too showed a higher than average interest in short term progress and desirable state of pupils and pupil activity, with figures of 33% (compared with an average of 26%), and 37% (average 28%) respectively, but it is in relation to level of intentionality of outcome that his talk is unusual. In more than half of the conversations there was no mention by teachers of hopes and aspirations and the average for all cases was 5%; the figure for Frank was 17%. Frank's talk was also unusual in terms of use made of past experience: it contained six mentions of use made of past experience out of a total for teacher talk in all conversations of 29, and it was the only conversation in which aspects of the particular observed lesson were used to illuminate a past problem (category b).

A distinctive feature of the two interviews taken together is the disparity between Lorna and Frank in their capacity to recall the conversation: Lorna had a detailed and accurate memory of what they had talked about; Frank, on the other hand, although he remembered the lesson and how he had felt about the conversation, made it clear that he did 'not remember the details'.

There are clear indications that for Lorna there was a tension in, on one hand wanting to carry out the procedure 'properly' by, for example, following the advice she had been given, and on the other seeing the observation element of the procedure as the more productive, with the conversation more an opportunity to 'confirm hunches' than to access the teacher's craft knowledge. She found it difficult, for example, to use the lesson as a preparation for the conversation because, in her words, '...a lot of what motivates people is the atmosphere, the aura of the classroom...and his relationship with the kids and things like that, so a lot of it was quite subjective and just my sort of feeling about what was going on...' However, 'concerned' that she 'phrased the questions in the right way' she asked Frank a number of direct questions, some of which 'might have been contrived, or set up a little bit'. One such 'direct' question was, 'What were your particular reasons for getting them into groups?' and in the interview Lorna explained that 'I suppose I knew why he had set up the group work, it all made sense to me, but I asked him because I wanted to make sure that he thought it was the best way to get them going...'. Frank, for his part, suspected that Lorna knew the answer to some of the questions she posed:

She was asking why I did certain things and it was fairly obvious. I remember thinking that she knew - she obviously had an idea why I did them but she wanted to hear it from me...

It would, however, be misleading to suggest that the conversation was a charade with both Lorna and Frank simply going through the motions. There are indications that Lorna came to value the conversation more than she had anticipated, and that Frank's

suspicious about her questions owed more to his tendency to take his expertise for granted than to the fact that one or two of her initial questions were not entirely genuine. By her own admission, Lorna came into the conversation feeling 'nervous' and with 'only four questions to ask him', but she found that she 'got a lot more information' because other questions came to mind as they talked and she 'ended up with a question which was very, very broad but just what he felt he actually did to motivate and interest and involve everyone in the class.' Lorna described this question as 'really productive because it got him to think about what he was doing and also to help me pick up on other things which I might not have done from the kind of questions I was asking.' The accuracy of Lorna's memory and a suggestion that the 'other things' referred to were aspects of Frank's craft knowledge can be seen in Lorna's question and Frank's response:

Lorna: I was running out of specific instances to question you about at this stage (pause) so this is very very general: what do you think you as teacher did to motivate your pupils?

Frank: Well, (pause) well, I hope the idea appealed to them. Obviously it's an English exercise in editing, creative writing, thinking and so on, but it's also something that will go into print and they will perceive that it's helpful for other people, so I hope the task motivates them. I hope the dividing up (pause) some of the lesson was me talking to them, and some of the lesson was them in groups, and some was on their own, and that helps the concentration. Also I hope the range of teaching styles helps them. Sometimes being funny with them, chatty, sometimes firm, sometimes sarcastic. I think I know them enough individually to know what works best with some of them and what with others. Some flattery and cajoling with Nyla who's a nice girl but who nearly always starts with a complaint, but if you humour her a bit, a bit of charm and chat - on the whole, I find remaining cheerful and biting my lip works with her, and she is one of the hardest workers. So it's knowing what will work with different ones is part of motivation. What else? I suppose sounding enthusiastic about the task.

Frank's response quoted above is typical of his talk in the conversation in that it is about pedagogical decisions and outcomes moderated by factors of which account is taken; and yet, an insistent refrain in his interview was an expressed concern that the conversation had been of little use to Lorna as everything he had said was 'so obvious' and 'run of the mill'.

Lorna was clear that Frank's warmth and relaxed approach to being observed with a follow up conversation and the fact that although he had plenty to say in answer to her questions 'he didn't run away with them', were salient features in making the conversation - about which she had felt nervous - an enjoyable experience for her. She also recognised that the way in which she had conducted the conversation was a contributory factor in its success. In framing her questions she was careful to 'put them in the right way' so that 'it didn't sound like I was criticising him', and she had not been slow 'to compliment him' which she claimed had 'helped on a couple of occasions'. She had, on the other hand, felt constrained by the advice she had been given about asking specific questions, which she had interpreted as meaning that she should not ask broad questions about the specific observed lesson but should focus on individual events in it. Lorna also found that having the opportunity to listen to the conversation on audio-tape not only made her aware that Frank's talk 'was actually helping me more than I realised at the time', but also that it helped all of it 'to sink in'. Frank's comment that it was 'ideal in that we were on our own in peace and quiet and not interrupted', and his description of Lorna as having 'organised it very well' and as having been 'very nice', need to be seen in the context of his remarks that 'not remembering what I said, I would hope that they were all fairly commonsense things that didn't require half an hour's intensive talk'.

In discussing the ways in which Lorna claimed to have benefitted from engaging in the procedure, it is important to take account of two considerations. First, she had anticipated learning a great deal simply from observing a teacher in a different subject who was reported to be good at motivating pupils, and in this she had not been disappointed. Secondly, the 'whole writing of the self-evaluation assignment', of which the procedure was a central part, had helped her 'to focus' her ideas. As mentioned earlier, Lorna had gone into the conversation seeking confirmation of various 'hunches'. She had been aware, for example, that one of the reasons for the difficulties she had come across in trying to motivate and involve all of her pupils was her lack of detailed knowledge of them; Frank pointing out that 'knowledge of the class was important' not

only had endorsed her viewpoint but had also given her 'some encouragement for the future', when as a qualified teacher she would have the opportunity to build up knowledge of pupils in her classes. In some ways, however, she had been taken by surprise; for example, she learned that what appeared to be a random selection of pairs reporting back was deliberate with 'the least able' starting off 'because they would have the best chance of being able to put forward their ideas and having them accepted', and 'the most able girls' going last 'because they would have the hardest job putting forward ideas that hadn't already come up...' Lorna was especially interested in equal opportunities which she had taken as the starting point for her self-evaluation, but as she had not worked with Frank she had no idea whether he shared her concerns in this respect. She was intrigued, therefore, to find that in his teaching he 'was doing all these things that I had decided were important ...and that ... it's just good teaching, that good teachers will endeavour to do these sorts of things for the class'. Lorna asserted that this experience had made her aware that teachers with diverse broad conceptions of teaching might well be trying to achieve similar purposes in their everyday work in classrooms.

Frank made no claims about the value of the procedure to Lorna; on the contrary he kept reminding the interviewer that he had doubted whether it was useful for her, and he was reassured, but not totally convinced, by the interviewer's assertion that Lorna had indeed found it useful. Frank had no such doubts, however, of the benefits for him. He felt that it had been valuable 'just simply by talking about my own lesson' because it made him question why he had done certain things in the lesson which in some cases led to his thinking that there were better ways of achieving his goals; and one of Frank's clearest memories was 'at the end of it making one or two notes myself of things that perhaps I should have done differently'.

One of the interesting features of this case is that in spite of Lorna's initial misgivings about the value of the conversation compared with the observation, and Frank's reluctance to accept that anything he said to Lorna could have been useful for her, in many respects it was the kind of conversation that it was hoped would take place.

Clearly, Lorna's social skills and Frank's affable manner and interest in helping a student teacher were important in the success of the experience, but it is equally clear that Lorna had taken seriously the task given to her as part of the self-evaluation process, and that in following the guidelines she had enabled Frank to reveal the thinking that underlay his observed teaching.

### **Simon and Sara**

Simon, one of two maths interns attached to an 11-18 mixed comprehensive school, carried out the observation and follow up discussion with Sara, one of the younger teachers in the maths department. Simon and Sara had talked with each other in the past and he had observed some of her lessons in the first few weeks of his time in school, but he, unlike the other maths intern, had not taken any of her classes. Neither of them was known to the researcher.

Simon carried out the procedure on two occasions, the one under discussion being the first of the two. The only difficulty he experienced in making arrangements was in finding the time to explain to the teachers what the procedure entailed and on which aspects of teaching he wished to focus. This he ascribed to 'the free and easy set up' of a maths department in which all the teachers were willing to have interns in their classrooms; 'they're so used to having interns coming into lessons, they didn't quite appreciate that this is slightly different...'. Simon chose to observe one of Sara's lessons because he had observed her in the past and he thought she was a 'good teacher'. He found her very helpful to the extent that she incorporated into the observed lesson - a second year class (year 8) the particular 'style of teaching' in which he was interested. The conversation, which took place in the classroom immediately after the lesson and lasted 'for about fifteen minutes', was uninterrupted. Sara was 'a bit wary' of having the conversation audio-taped, but she was not aware of any problems in organising the observation and conversation. That her perception of the situation was very different

from Simon's is suggested by her comment that it was 'lucky' that she had a 'free period' following the lesson.

In terms of overall structure the conversation between Simon and Sara was unusual in a number of respects. To begin with 30% of the total number of moves were structuring moves - double the average across all the conversations - and the 17% for Simon mark him out as the intern who made the highest number of statements in relation to other moves. Secondly, it contained the highest percentage of teacher reacting moves, 19% compared with an average of 6%. Such figures inevitably mean that less of the conversation was taken up with solicitations from the intern and responses from the teacher than would normally be the case. It comes as no surprise therefore to find that it was the conversation with the lowest percentage for the combined total of intern solicitations and teacher responses - the two moves that it was anticipated would dominate the conversations - together with intern reactions and reacting/soliciting moves. On average those four moves constituted 79% of the total number of moves; in the case of Simon and Sara, it was 47%. It is, however, worth noting that although this conversation stands out from the others in the high incidence of intern statements and teacher reactions, it is not untypical in terms of the nature of those statements and reactions. None of Simon's statements, for example, were about his own teaching and all were related in some way to the specific lesson. Furthermore, across all cases the most common kind of teacher reaction was type a1 expressing agreement, and the second most common an elaboration by the teacher of what the intern had said (type d), together accounting for 82% of all teacher reactions; 87% of Sara's reactions were of this kind. A similar pattern can be detected in Simon's reactions: there were no probes seeking justification (e2), and with the exception of a single instance of type c, an expression of reservation about what the teacher had said, all reactions in his talk were divided evenly between expressions of agreement (a1) and elaboration (d). There are indications then that this was an agreeable conversation in which, as they both commented Sara was 'not on the defensive', with the participants reacting positively to each other's talk, and each eager to add to points made by the other.

In terms of number of moves the conversation was unremarkable; it comprised 47 moves and the average was 54.

Sara was conscious of the part that Simon's questions played in helping her 'to talk about my reasons for doing things', and there is evidence to suggest that he had taken note of the advice he had been given. His claim, for example, that many of his questions were seeking reasons for Sara's actions in the lesson is borne out by the analysis which shows that there was a higher proportion (60%) of type a ('why') questions in his talk than in that of any other intern. Moreover, in terms of specificity not only was his was one of the thirteen conversations in which there were no instances of questions formulated in terms of generalisations not directly related to a specific aspect of the observed lesson (specificity d), but 80% were specific questions focussing on a particular aspect of the observed lesson (specificity a), which compares favourably with the average of 49%. In the light of the evidence about the type of questions he asked and their level of specificity, the fact that his questions tended to be more closed than open when in most conversations the split was nearer 50/50 suggests that he found it difficult to ask open questions. The characteristics of Simon's questions outlined above can also be found in his probes, and a picture emerges of an intern intent on finding out the teacher's reasons for specific actions observed in the particular lesson but with a tendency to pose the questions as tentative understandings for which he was seeking confirmation or denial.

Simon's success in avoiding framing his questions as broad generalisations was matched by Sara in her responses; all were related to specific classroom events (levels, a, b and c) and a very high 75% were about a particular aspect of the observed lesson (specificity a). This was too a feature of the conversation that both participants commented on: Sara straightforwardly described the two of them as 'specifically talking about the lesson', and Simon, drawing comparisons between the two conversations he carried out concluded that the one with Sara 'was more confined to the focus', adding that 'this was good'.

A distinctive feature of the conversation concerns type of outcome. Both Simon and Sara showed a much greater interest in pupils' short term progress (type a outcome), and a relative lack of interest in pupil state and activity (type c outcome), than did other interns and teachers. In Simon's talk, 44% of outcomes were of type a and 11% of type c, whereas across all conversations interest in pupil' short term progress (type a) accounted for 17% of outcomes in intern talk, and concern with pupil state and activity 32%. Similarly, 40% of outcomes in Sara's talk were of type a (pupils' short term progress) - a far greater proportion than the average for all teacher talk of 26% - while her interest in pupil state and activity (type c), accounting for 20% of the outcomes in her talk, was lower than the average 28% for teacher talk. Concern with pupil progress rather than pupil activity can also be seen in Simon's comment that he was looking at 'styles of teaching' as a way of addressing what he saw as a central question - 'How can I maximise the learning process?'

Sara's talk revealed that, alongwith the other teachers, she was pre-occupied with factors concerning pupils when taking pedagogical actions or setting goals, but it also revealed - with a score of 25% - a greater interest than most in content (factor d). It was, however, in relation to mental activities that Sara stands out from her peers. In her talk there are 20 mentions of mental activities, and with 0.83 mentions per move it was the richest in this respect. Sara emerges as a very self-critical teacher, less confident than most in her intuitive judgements; and it is possible that her being one of the youngest and least experienced teachers involved in the research is more than coincidence.

Simon, concerned that he was not always using the most appropriate 'style of teaching', was interested in looking at 'different styles' hoping to find an answer to the question - 'What is appropriate in particular circumstances and particular learning situations?' Although at this stage his intended focus was rather broad, his central question suggests that he was aware that the nature of the classroom teaching expertise the procedure was designed to enable him to access was highly contextualised. It would appear that while observing the 'excellent' lesson of Sara's he was so taken with the use of pupil discussion

as a teaching strategy that he narrowed his focus of interest. Sara, although she could not remember either the lesson or the conversation in any detail was clear that Simon had been focusing on 'different teaching skills' and that the lesson he observed was 'pupil-pupil discussion in small groups of four'.

Simon claimed that the conversation revolved around the reasons behind Sara's observed actions in the lesson, a claim endorsed by Sara who said that she had talked about her 'reasons for doing things', and the following typical extract from the conversation shows this to be the case:

Simon: When you asked them at the end - you asked individuals - you asked Donald to explain his idea...

Sara: I'd seen the groups, and in that group I knew Donald had had the idea and that's why I asked him and I was fairly sure. I'd seen these two groups had ideas and I hadn't seen any other groups with ideas - Elizabeth's group came up with something. That was why I asked individuals. If we'd had more time maybe, if they'd got a bit further on, then I could have asked each group in turn, but I knew some groups hadn't really come up with anything, so it wasn't worth wasting time on them because of the time pressure.

In this brief response to a question about an apparently straightforward pedagogical action, Sara reveals the kind of thinking behind her actions that Simon had been looking for. In Simon's comments about the conversation, especially when recalling Sara's responses to his questions, it is possible to detect his excitement at accessing Sara's craft knowledge. In referring to the exchange quoted above, he said:

...I was also asking questions like, 'Why did you choose that particular group to express their findings to the rest of the class?' 'And the answer was because she'd seen that they'd actually done it, it was all written down so she knew that they were going to give the answer. But I would never have noticed that if I'd just observed. She'd been around each group, she'd seen what they'd done ...and when she asked the groups to report back she could pick one group which could get the pace moving...

For Sara there were three factors that had been important in facilitating the observation and follow up conversation with Simon. First, she had talked with him before about

teaching and as a result found him 'very easy to talk to'. Secondly, the fact that they had been able to have the conversation straight after the lesson meant that 'it was immediate and everything was fresh', and Sara contended that she would have forgotten the details of the lesson - and with them the reasons for her actions - had she had to wait even for only two lessons. The third and most critical factor had been Simon's questions which not only told her what he wanted to know, but also enabled her 'to pinpoint things' which was difficult when, as she argued, so much of what she did was 'automatic'. It is also interesting to note that when talking of his questions, Sara made frequent reference to their specificity. The one element of the procedure that had caused her any concern was the audio-taping of the conversation.

Simon asserted that as both teachers and interns were 'hard-pressed' and usually pre-occupied with thinking about the lesson to come, the observation and follow up conversation might well not have taken place had it not been part of the 'official' programme. Above all, however, he attributed the success of this experience to the fact that he was genuinely interested in understanding what had gone into a teaching strategy he wished to incorporate in his own repertoire which meant that, in his words 'I wished to get answers to my questions'.

Sara was cautious in talking about the benefits resulting from their engaging in the procedure. She claimed that Simon had understood the reasons behind her observed actions, but more significantly he would remember what he learned because she had been able to explain her thinking with concrete examples from the lesson, and in the future when he used pupil discussion as a teaching strategy he would be able to use the observed lesson as a point of reference. It is interesting to note that the claims made by Simon about the benefits accruing to him from the observation and follow up conversation lend support to Sara's argument. He explained that in the final period of J weeks, finding himself teaching the class he had observed Sara teaching, he decided to try out what he had learned even down to doing it at the same point in the weekly timetable. From his comments it is clear that he followed Sara's example in detail, and 'it

worked absolutely'. Simon claimed that 'he knew it would work with 2J because I had seen her do it with this particular class, at this time of day and in this situation', adding that this initial success had given him the confidence 'to carry on in this style of teaching'. Interestingly, there was no mention in either interview of benefits to Sara.

Sara comes across as a self-effacing, self-critical teacher. That she found the observation and audio-taped follow up conversation less intimidating than it might otherwise have been and was able to reveal the thinking behind her actions in the observed lesson, owes much to the way Simon conducted the interview in general, and to the specificity of his questions in particular. Sara had been willing to engage in the procedure because she knew and respected Simon as a pleasant, enthusiastic student teacher; for his part, Simon believed that he could learn from Sara, and his respect for the skills that she displayed in the observed lesson was genuine.

### **Ben and Kate**

Ben, one of two history interns in a relatively small 11-16 mixed comprehensive school in a rural setting, carried out the procedure with Kate, his mentor who had been a PGCE student at the University at the time when Internship was being developed. During the course of her work as an English curriculum tutor, the researcher had been a frequent visitor to the school and had often chatted with Ben and Kate in the school staffroom. As Internship Field Officer she had also had more formal contact with Kate at various meetings of mentors both in the school and at the University. Kate was very interested in school-based initial teacher education and was eager to be a skilful mentor.

Ben's decision to engage in the procedure with Kate came from a mixture of personal, practical and professional considerations. He knew Kate quite well and his asking her questions was part of their relationship as intern and mentor, so he felt 'it was easier to approach her' than someone with whom he did not have a working relationship. He also regarded her as skilful in that aspect of teaching on which he was focusing: he wanted to

know how she managed to be 'friendly in the classroom' while at the same time ensuring there was 'a good working atmosphere'. Ben asserted that there were 'no problems' making arrangements as Kate was 'willing to do it', while conceding that there had been some difficulties in finding an appropriate lesson. An early indication that Ben's and Kate's interpretation of the intended purposes and procedures of the exercise might well be idiosyncratic was in their arranging that Ben should be observed by Kate before he observed her. The follow up conversation to Kate's lesson was to take place in the staffroom during 'a free period the day after'. Kate's memory of setting up the procedure was very different from Ben's: 'it seemed like it was a major hassle to arrange this damn interview' she said of the conversation with Ben. Furthermore she was not convinced that the lesson Ben observed was entirely appropriate as it was the first lesson of a unit on prejudice and discrimination within a modular course, which meant that she did not know the class well.

Ben and Kate were in agreement that Kate 'did most of the talking', a description borne out by the content analysis which reveals that, as in most of the conversations, teacher responding was the most common type of move (in this case 40% of all moves compared with the average 34%). In broad structural terms the conversation was what had been anticipated and was typical; 90% of the moves were made up of responses from Kate together with three kinds of move from Ben - solicitations, reaction solicitations and reactions. The conversation, however, was unusual in the extent to which the talk was in generalisations that were not rooted in the observed lesson (level of specificity d): 45% of Ben's solicitations were of specificity d - as opposed to the average in intern talk across all conversations of 19% - and 63% of Kate's responses were of specificity d, compared with an average of 28%. It would seem that Ben, unlike other interns, had ignored the guidelines pertaining to specificity, but nonetheless 45% of his solicitations were about an aspect of the observed lesson (specificity a), compared with an average of 49%. However, only 15% of Kate's responses were of specificity a (in comparison with the average of 42%), which suggests that even when asked a question about the observed lesson she tended to talk about her teaching in broad generalised terms that were not

directly related to the particular observed lesson. In their respective interviews both of them commented on the generalised nature of the conversation which Ben attributed to the broad 'vague' nature of his focus which 'could not be identified in one lesson' and which necessitated understanding 'a lot of general background'. Kate contended that 'the lesson was the starting point...but it tended to broaden out'; what is interesting about this conversation is that so little of the exploration of broader issues was rooted in the observed lesson (specificity c).

Ben's questions, unusual in that they were either very specific or very generalised, were also untypical in terms of openness and type. He asked a higher proportion of closed questions than did any other intern - a very high 85% of them were closed compared with the average of 53% - and 85% of them were 'what' type questions (type c), again a far higher figure than the average 59%. The follow up questions he asked - one for every two solicitations which makes him typical in this respect - fit the same pattern: 67% were closed, 67% were of specificity d, and all of them were descriptive questions (type c), indicating that he asked them in order to confirm his understanding of Kate's response to an earlier question rather than to probe deeper into her expertise. Reflecting the pattern shown by this evidence, the questions Ben talked in his interview of having asked were closed, descriptive and generalised. Kate commented that 'some of his questions put me on the spot which made me feel defensive' which may explain why three of her four reactions were qualifications of what Ben had said. In his reactions Ben was like the overwhelming majority of interns in being far more positive than negative.

Ben was one of two interns who talked exclusively of general or residual outcomes (type e), while Kate showed considerably more interest in pupil state and activity (38%) than in pupils' short-term progress (8%), the respective figures for teachers as a group being 28% and 26%. In her interview Kate pointed out that in talking to Ben about what she did to create an 'apparently informal atmosphere' and 'in being oneself in the classroom' she had stressed that 'it would differ for different groups' as there were 'many things to consider'. It comes as something of a surprise, therefore, to find that far from being rich

in mention of factors, Kate's talk was relatively impoverished: frequency of mention in her talk was 1.12 per move, well below the average of 1.69. As in all the conversations the majority of references to factors were about the pupils, but Ben and Kate also showed an enhanced interest in teacher state (factor g). In the talk of each of them this accounted for 1 in 5 mentions of factors, considerably higher than the average of 5% for interns and 7% for teachers, but not entirely unexpected given the focus of the observation and conversation; and it is the nature of the topic of conversation that perhaps explains why Kate was the only person from among all the teachers and interns who made mention of factor j, awareness of being a teacher in the classroom.

With a view to addressing his central concern of 'whether or not I should be myself in the classroom', Ben engaged in the procedure with Kate focussing on her 'personality in the classroom.' In his account of the kind of questions to which he was seeking answers there are indications that he was interested in having some of his own thinking confirmed, and that some of his questions were of such a generalised nature as to make the observation redundant:

I wanted to know how she achieved this balance of control and friendship in the classroom. Was it stuff she did everyday, every lesson, or did she change, or did she set the ground rules a long time ago? How much effort did she put into being a teacher or how much effort did she put into being herself in the classroom...?

It would appear that, notwithstanding the sincerity of his intention and desire to learn from Kate whose 'attitudes in the classroom' he so admired, Ben was either not wanting to, or was unclear about how to access the highly contextualised knowledge embedded in her practice.

The two accounts of the conversation when compared with each other and examined in relation to the conversation itself reveal some differences between Ben and Kate in the importance they attached to the various issues discussed. For Ben the part of the conversation that centred on the ways in which Kate claimed to change on entering a

classroom was the most important, whereas for Kate, 'the main thing' that she made clear to Ben was that behind the apparent informality of her lessons 'there is quite a lot that is going on at the back...and it's not really the haphazard approach that's taking place...and the way I would teach some groups I wouldn't others.' Neither of them mentioned the teacher's language and its impact on the pupils' use of language which was the subject of six questions and three probes from Ben and the issue to which most time was given.

For Kate what had made the observation and follow up conversation more than 'just a passing conversation' was the time given to it and the fact that the questions came from Ben which meant that she knew 'he wanted this information'. This was the first occasion on which she had been observed and then 'interviewed' about her teaching and she relished the opportunity to talk in 'more detail' and to say 'more clearly' some of the things about which she had talked with Ben in the past. In her comments there is the suggestion that Kate saw the observation and follow up discussion as an opportunity for her as Ben's mentor to talk with him about an aspect of his teaching that continued to concern her:

...it's maybe a pity that the conversation couldn't have taken place earlier ... maybe the kind of information, the kind of experiences we were talking about I could have shared with him earlier on.

Clearly, Kate found the experience discomfiting. She explained that she would have preferred to know Ben's questions beforehand as at times in the conversation she felt 'on the defensive', and she disliked having the conversation in the staffroom, feeling 'intimidated that other people were listening to me talking in a way that I wouldn't normally talk at school to other people and colleagues'. Above all, she disliked having the conversation audio-taped arguing that it made her feel 'vulnerable' and 'inhibited' as she did not have sufficient confidence in what she was saying 'to believe that it's worthwhile to actually listen back to'. In addition to these causes of discomfort offered by Kate, implicit in some of her interview responses is an acknowledgement that by this late stage in the PGCE year Ben should have resolved any problems concerned with

adopting the teacher role in the classroom, and that as his mentor she should have done more to help him:

Often I think perhaps I assumed that he was picking up what I was thinking, or maybe he hadn't, and to have said that clearly in an interview situation perhaps might have been more helpful to have done that earlier on.

In the light of her experience of the procedure, Kate's claims that she had benefitted from the conversation because it had made her think, and that Ben had been given 'another perspective on teaching' in an area in which he had expressed interest, should perhaps be seen as an attempt by a young teacher who was an enthusiastic supporter of school-based initial teacher education politely to tell the interviewer that the general idea of setting aside time to have a conversation after an observed lesson can be useful.

'We didn't really say, "Why did you do this?" very much', said Ben explaining that the procedure would not have taken place had it not been an integral part of the self-evaluation process and assignment, and having a focus to the observation and discussion also helped him to carry it out. He was also clear that given the sensitive nature of his focus - 'being yourself in the classroom' - he would have found it difficult to ask questions of anyone other than Kate; in his words, 'when it was somebody I liked, you don't feel you are criticising when you are asking questions'. While conceding that one of his questions had made Kate feel 'uncomfortable', and aware that his chosen focus was 'a difficult thing to identify', Ben claimed that he had experienced no problems and that he had been able to conduct the conversation in the way he thought appropriate. He was equally positive about the ways in which he claimed to have benefitted from his experience of the procedure, arguing that he had a better understanding of 'teachers in general' as a result of understanding Kate more, that he realised that the issue of whether and in what ways teachers should change when they go in the classroom is 'something you have got to struggle with', and that it made him think about 'the things teachers do to give off signals'.

It is not easy to make sense of a case in which neither of the participants was engaged in the intended exercise of seeking and giving access to craft knowledge. Ben was very positive about the experience, claimed that he had not found it problematic and that he had been able to conduct the follow up conversation in the way he wished. And Kate, although expressing misgivings about some aspects of the procedure (mainly organisational ones) did not question the generalised, de-contextualised nature of the talk in the conversation. The question to be asked therefore is - What did Ben and Kate think they were doing?

To begin with, Ben's choice of focus for observation and follow up discussion - 'how to be oneself in the classroom' - is surprising on a number of counts. First, it is a very diffuse notion. Secondly, it is an extremely self-centred concern and as such one which would be expected to engage the attention of student teachers in the early stages of their development, and not, as in this case, as they come to the end of their course. Finally, it is singularly inappropriate in terms of gaining access to teachers' craft knowledge as it is not meaningful in terms of practitioners' primary concern, the pupils. With a focus of this kind, there was every chance that the intended purposes and procedures of the exercise would be disregarded.

It has already been suggested that Kate, concerned that Ben should learn how to behave appropriately in the classroom, under the cover of talking about her teaching of pupils and revealing her craft knowledge, in fact adopted the stance of a teacher of student teachers. Ben, concerned with his own teaching and wanting Kate's advice about whether he should 'be himself' in the classroom, was satisfied with this; indeed, his questions and general conduct of the follow up conversation served to encourage Kate in her de-contextualised talk. It would appear then that Ben and Kate were unconsciously colluding with each other in the conversation: while Ben was 'inappropriately' failing to focus on Kate's observed teaching, Kate was 'inappropriately teaching' Ben, by focusing on his needs and transforming her knowledge to meet them.

## Conclusions

Each of the six case studies offers two mutually consistent accounts of the observation and follow up discussion, with each of the two participants contributing very different information from their respective positions. In each case too, there are different evaluations of what was said and done. In four of these - those seen as broadly successful from the point of view of the participants and of the researcher - any such differences are more than anything else a question of different emphases emanating from a desire to give credit to their partners: Jane, Lorna, Simon and Stuart were full of praise for the way in which the teachers responded to their questions, while Megan, Frank, Sara and Andrew talked not so much of themselves as of the quality of the interns' questions and of their general manner in setting up and conducting the exercise. In the other two cases, the source of the different evaluations lay elsewhere. Elaine managed to conceal from Denise her frustration with the whole exercise, so that Denise was left believing that what she had talked about had been of value to Elaine; and in the case of Ben and Kate it was the researcher who was out of step, since she alone saw them as having failed both to follow the procedure and to achieve its purposes.

The most striking feature of the cases is the extent to which the conversations were dominated by the suggested guidelines. Even the conversation that least resembled that which had been anticipated and hoped for, that between Ben and Kate, comes across as a divergence from the suggested procedure rather than as a conversation of a distinctly different nature, which may account for its somewhat bizarre quality.

To judge from these cases, there seem to be two factors that are critical in enabling a student teacher to access an experienced practitioner's craft knowledge. The first is the student teacher's conviction about the value of such an exercise coupled with their broad understanding of it. In the two unsuccessful cases the suggested guidelines were, for the most part, disregarded: in Elaine's case she did not believe in the value of getting

teachers to talk about their observed teaching; and Ben, although regarding himself as a believer, simply did not seem to understand what it was all about. In the four successful cases, each of the two participants spoke of respecting the other; mutual respect emerges as the second of the key factors in the exercise. For the interns, respecting the teachers with whom they engaged in the procedure meant believing that there were aspects of their practice from which they could learn. Respect for the interns was more complex; teachers' respect for student teachers carries with it notions of approval. All four teachers approved of the way in which the interns set up and carried out the observation and follow up conversation; their conduct in the conversation was evidence that they were serious learner teachers, eager to learn from established practitioners; and for Megan, Sara and Andrew, all of whom had had previous dealings with interns through being members of the departments to which they were attached, this confirmed their previous high opinion of them.

The individuality of student teachers is inevitably highlighted in a situation in which they are asked to decide not only on their focus of concern, but also on the teacher whose observed teaching will be the subject of the interview. Jane, Simon, Lorna and Stuart were from three different subject backgrounds, worked in different schools, had different areas of concern, and engaged in the procedure with teachers who differed from each other in many respects. Yet all four were able broadly to follow the procedural guidelines and gain access to the thinking that underlay the teaching they had observed. Perhaps then, the most interesting conclusion to be drawn from the case studies is about the capacity of a standardised, artificial and relatively rigid procedure to accommodate such diverse concerns and relationships.

# **Chapter Ten**

## **Conclusions**

### **Introduction**

In the first part of this final chapter, the evidence that has been gathered is interpreted in relation to the research questions. However, as the thesis developed, the range of issues on which it seemed necessary to gather information went beyond the narrowly-focused initial research questions, and conclusions are distilled from this further evidence about how interns and teachers saw the procedure in relation to other ways in which the former learn from the latter. The chapter then moves to consideration of the conduct of the research; and concludes with a discussion of the wider implications of this study for understanding student teachers' learning, for policy and practice in initial teacher education, and for future research.

### **Answers to the research questions**

Each of the research questions will be looked at in turn.

1. Is it possible, through generalised explanation and demonstration of models, to give interns an adequate understanding of the value of gaining access to the professional craft knowledge of experienced teachers, and an understanding of how this may effectively be done?

The simple answer to this question is that it is possible, but that, as is clear from the work carried out in the first two years of the study (reported in Chapter Three,

Preliminary studies), it may be difficult to persuade some student teachers of the value of gaining access to experienced teachers' craft knowledge to the extent that they will attempt to do so, because of their preconceptions about teaching and learning to teach, their relationship with teachers, and their school situation. Since the actions taken to overcome the barriers that had been identified proved effective in that, as reported in Chapter Four, virtually all of the interns in English, history and maths claimed to have engaged in observation and follow up discussion with teachers, it is worth recalling the measures taken.

First, in order that interns would give their attention to the procedure as a means of accessing teachers' craft knowledge, it was essential that it was seen as a structured part of their curriculum programme, rather than as a 'good idea' that they might follow up should time allow. Evidence in Chapter Seven from the intern interviews indicates that for a number of them their motivation in engaging in the procedure was that it was a part of the course; and recognition of its value came afterwards. Secondly, evidence from the two sets of interviews and from the case studies supports the view taken that student teachers, being both properly self-centred in that they were interested in the teaching of others only in so far as they could relate it in some way to their own developing practice, and also having diverse concerns and needs, were more likely to value gaining access to those aspects of a teacher's craft knowledge of particular interest to them, than to craft knowledge in general. It was for this reason that observation and follow up discussion was made part of the interns' self-evaluation, an exercise that takes place in the second half of the PGCE year, and is driven and controlled by the interns themselves. There is a good deal of evidence in the findings from the teacher interviews in Chapter Eight to support the notion that for the procedure to succeed, student teachers need to be in a state of readiness for learning: it would seem that in order to get access to experienced teachers' craft knowledge student teachers need to have a sufficiently developed understanding and experience of teachers and of teaching to ensure that they are well-motivated - that is, they have a genuine interest in seeking to understand more about a

teacher's observed teaching; are less inclined to be hasty in their judgements; and have the requisite social skills to set up and carry out the procedure.

From the evidence of the intern interviews it is clear that they were not all fluent in using the procedure, probably because it was new to them, which suggests not only that they were not sufficiently convinced of its value to engage in observation and follow up discussion with teachers on a more regular basis, but also that to do it well they needed to be more practised in doing it. However, the evidence from the analysis of the conversations suggesting that interns did have a broad understanding of how to access teachers' craft knowledge is well supported by the interview data and by the case studies. From all four data-based chapters emerges a picture of interns observing a teacher and then, focusing on the teacher's observed teaching, having a follow up conversation in which the intern asks questions and the teacher responds. There is clear evidence too in all four chapters that the interns understood the importance of adopting a positive stance and of taking pains to ensure that teachers were not put in a position of having to defend their teaching.

As asserted at the beginning of this answer to the first research question, one may conclude that although it is possible to give student teachers an adequate understanding of the value of gaining access to the professional craft knowledge of experienced teachers, and an understanding of how this may be done, there are certain important prerequisites for success, as shown above. Perhaps most significantly of all, the timing must be right in terms of interns' professional development, and they must have some ownership of the agenda rather than it being seen as alien or imposed.

2. What are the problems for interns of finding the opportunity to observe and interview teachers in the way suggested?

That the interns experienced as stressful the finding of opportunities to observe and interview teachers about the observed teaching can be clearly seen in the findings of the

questionnaire and intern interviews carried out as part of the preliminary studies reported in Chapter Three; such were the perceived problems that most interns did not succeed in carrying out the exercise. The actions that were subsequently taken (outlined above in answer to the first research question) served to alleviate that stress, not least perhaps in lowering expectations of the regularity with which interns would work with teachers in this particular way. In considering this question, therefore, it is important to remember that, in the main study, the interns were only expected to carry out the exercise in all its entirety - which included audio-taping the conversation - on two occasions.

The problems experienced by the interns in the main study emanated from the interaction of the normal rhythm of school life with a focused, planned procedure that was demanding of the time of both the student teacher and the teacher who needed to be free of other commitments at the same time. In addition, making arrangements included ensuring that the follow up conversation would take place in private, something that, as reported in Chapter Seven, two interns were unable to do.

Findings from the two sets of interview data presented in Chapters Seven and Eight support the contention that the interns in the main study were able to cope with the problems of setting up the procedure because they were established in their respective schools. This enabled them, for example, to take account of the likelihood of teacher cooperation when deciding whom to approach. More importantly, although the procedure was 'unnatural' in that it made demands of space and time that took time to sort out, and although it was seen by the interns as going against the grain of their ongoing relationships with teachers, the interns had sufficient confidence to take the initiative and, more critically, this was accepted and even welcomed by the teachers.

3. What are the difficulties encountered by interns in observing and interviewing teachers in the way suggested?

From the evidence of the content analysis presented in Chapter Six, it can be seen that difficulties experienced by the interns in adopting the appropriate role and stance, and in employing the suggested tone in the conversation, were relatively small. They took on the questioning role, focused on the teachers' teaching, and were far more positive than negative, an interpretation supported by the teachers' experience of the procedure, as reported in Chapter Eight. There is also evidence - as in the case of Elaine and Denise (Chapter Nine) - to suggest that even in those conversations in which the interns were frustrated, disappointed or bored with what the teachers had to say, they avoided putting teachers on the defensive.

The content analysis also draws attention to the two main areas in which the interns did not follow the advice offered, those of openness of questions and probing. The correlational analysis shows that the extent to which interns asked open questions is unconnected with their getting access to craft knowledge, an indication perhaps that the notion of openness, a key feature of the suggested guidelines, needs to be reconceptualised. The case of Simon and Sara (Chapter Nine) also suggests that the concept needs to be re-examined: the posing of questions framed as understandings for which Simon sought confirmation or denial did not deter Sara from revealing the thinking embedded in the observed teaching. With hindsight, one can see that a fuller understanding of the effect of openness would have been possible had the interaction between moves been analysed on the basis of the content analysis.

As for probing, at first glance the evidence of the content analysis is more than a little confusing since probing is negatively correlated with the articulation of craft knowledge. However, a closer scrutiny reveals that although the interns did ask follow up questions that were not seeking justification, they were not of the kind envisaged or suggested by the researcher. There is insufficient evidence to state with any assurance that the

explanation for this lies in the interns' misunderstanding of the guidelines; it is equally possible - especially in the light of the evidence in Chapter Seven that a number of interns consciously modified the procedures - that they decided not to probe the teachers' answers for fear of appearing aggressive or impolite.

As discussed in Chapter Seven and illustrated by the case of Elaine and Denise, the difficulty experienced by a small minority of interns was in having to feign interest in a lesson seen as boring, or in a teacher's talk regarded as unhelpful. It is clear, however, that the source of greatest difficulty for the interns was the procedure itself which called for interactions with teachers of a distinctly different kind from the ones to which they were accustomed. The findings from the intern interviews underline the self-consciousness that interns felt in having to engage in a procedure commonly described as 'artificial' and 'formal', and as such, dramatically at odds with what they saw as a more natural way of working with teachers. The reaction of the teachers, as reported in Chapter Eight, to what they made clear was also a new experience for them was very different: they showed no awareness of the difficulties experienced by the interns, and applauded the formal nature of the procedure.

These contrasting perceptions require explanation. On one hand, it seems probable that the interns, established in their schools and coming towards the end of their course, saw in the informal, more relaxed ways of working with teachers - ways that were also more in tune with the everyday school rhythm - affirmation of their acceptance as colleagues in the teaching profession, and they were reluctant to jeopardise that. However, they appear to have been adept at concealing from the teachers the discomfort or apprehension that they felt. And those interns who modified the procedure seem generally to have been skilful at retaining its essential characteristics, while reducing its air of artificiality.

As established practitioners, the teachers sought from novices respect for their expertise and sincere interest in wanting to learn to become a teacher. A thread running through

the teacher interviews - for example, in their talk about observation, and about their experience of observation with follow up discussion - is an awareness that teaching can be misunderstood. The exercise in which they were asked to engage was concerned with accessing the expertise that was in the observed teaching and that was seen as a valuable source of knowledge for the interns. It is not surprising, therefore, that although this was new and different, when the guidelines were broadly followed, it was welcomed by the teachers, not least as evidence that the interns were serious as learners and respected them as practitioners. The four successful conversations reported in the case studies offer support to this argument.

4. To what extent does the interns' use of the various suggested questions and behaviours correlate with the teachers' articulation of the craft knowledge they had used in the observed lesson?

The results of the correlational study in Chapter Six showed a very strong and linear connection between a major student factor largely reflecting interns' use of the suggested questions and behaviours, and a major teacher factor reflecting teachers' articulation of their craft knowledge. This clear relationship provided substantial support for the central hypothesis which had guided the action research. There were, however, two ways in which that support was qualified: the openness of interns' questions, a central concern of the guidelines, was not correlated either with other aspects of their use of the guidelines or with the teachers' articulation of their craft knowledge; and the extent to which interns probed (for clarification or elaboration) was negatively related to teachers' articulation of their craft knowledge.

5. Apart from articulating the craft knowledge used in the observed lesson, how else do teachers talk about their teaching and how does that relate to the part the interns play in the post-lesson conversation?

In retrospect this research question seems unimportant because of the extent to which, in the conversations with interns, teachers articulated their craft knowledge. The results of the content analysis of the conversations clearly demonstrate that the teachers made relatively few references to their past experience and that, as Brown and McIntyre (1993) found in their study, they revealed little of their classroom thinking processes. However, the results of the content analysis also draw attention to the considerable variation among teachers in their readiness and ability to talk about their teaching in terms of the observed lesson; and it is evident that a minority had little difficulty in wandering off into broad pontification. Support for this latter claim can be found in the case of Kate, one of the teachers featured in Chapter Nine, who consistently talked about her teaching in broad generalised terms unrelated to the observed lesson. Since the content analysis was developed in relation to ideas of professional craft knowledge, teacher talk that revealed little such knowledge was described primarily in such negative terms; and nothing was noted about such talk that was interesting in more positive terms.

As for the second half of the question, both the correlational evidence and the evidence of the case studies of Ben and Kate and of Elaine and Denise suggest that in response to generalised questions, teachers will talk in decontextualised ways, and that a more generalised failure on the part of student teachers to follow the guidelines tends to generate teacher talk with little fine-grained information about their classroom practices.

6. What are the various ways in which interns react to, and make use of, the craft knowledge used in the observed lesson and articulated by the teachers?

In attempting to answer this question, one must face up to two problems. First, when interviewed, neither the student teachers nor the teachers talked in terms of teachers' craft

knowledge, and while it is possible to differentiate between those conversations in which the teachers tended to articulate their craft knowledge and those in which they did not, it is necessary to be cautious when making claims about how the interns reacted. Secondly, since, as reported in Chapter Seven, most interns were not seeking to put to immediate practical use what they learned from the articulation of the teacher's craft knowledge, the major question of the use to which they put it remains to a large extent unanswerable.

Notwithstanding the note of caution, evidence from the interviews with the interns and from the case studies, suggests that those interns who did gain access to the teacher's knowledge and expertise embedded in the observed teaching, recognised it as different from other kinds of teacher knowledge, and considered it worth the time and trouble it had taken to access it. There is evidence too in Chapters Seven and Nine that the small minority of interns who reacted negatively to what the teachers had to say, tended to be those who believed that it was possible to understand a teacher's teaching from observation alone.

Evidence from the intern interviews, supported in the case of two of the interns by evidence from the interviews with the teachers, indicates that those few who had engaged in the procedure with the intention of making immediate practical use of what they had learned, were successful in incorporating into their own teaching, the skills or strategies that had been the focus of the observation and conversation. Most of the interns, however, set about the exercise with no clear intention of the use they would make of what they learned from the teacher, beyond any such learning being seen as useful to them in terms of the self-evaluation task. The evidence of the intern interviews and of the case studies suggests that most were satisfied either with being reassured or with being made to think. The use to which in the future they might put their claimed enhanced understanding of teaching and of teachers is, therefore, not answerable from the available evidence.

7. Although not one of the research questions formulated at the beginning of the main study, the following question was one with regard to which both interns and teachers had a lot to say:

In what ways does the experience of engaging in the procedure relate to other ways in which interns learn from experienced teachers?

The findings from both sets of interviews indicate that for virtually all of the interns and the teachers the procedure was unique in that it was planned in advance, was carried out within a framework of standardised guidelines and had a clear purpose. The power relationship between student teacher and teacher was also unique: the student teacher in deciding on the focus and in asking the questions had both power and responsibility, but not at the expense of the teachers; on the contrary, they in turn felt liberated in having the obligation and the opportunity to focus on their own craft knowledge. It is also evident that for many interns and teachers it was an especially productive way in which interns could learn from experienced teachers. Although, as is evident in Chapter Seven, many interns were discomfited by what they experienced as an unnecessarily formal way of talking with teachers and spoke in general terms of their preference for more informal interactions with teachers, they were very critical of their experience of observation and of being observed and given feedback. The teachers too were severely critical of the normal patterns of observation by interns.

### **The conduct of the research**

In common with many research projects, the conduct of this study was constrained by time, and a question to be addressed is whether time and energy were judiciously apportioned to the different phases and facets of the study. The analysis of the conversations between interns and teachers, for example, was extremely time-consuming: the content analysis system took many months to develop, and its

subsequent application to the transcripts of the conversations was far from straightforward. Was it worth it? It is tempting to argue that the system was unnecessarily complex, and that the findings from this set of data do not represent a good return on the investment. There was always the possibility of settling for a considerably more straightforward system that did not, for example, attempt to apply the same categories to both participants, and it was momentarily tempting to take the easier option. However, the process of developing the content analysis system was helpful in two respects. First, the necessary teasing out of Brown and McIntyre's formulation of teachers' craft knowledge helped the researcher to understand it more fully. Moreover, while the final system was not necessarily more intricate than that implied in the results from Brown and McIntyre's study, the elaboration of those intricacies serves to reinforce confidence in their claims. Secondly, the need to operationalise the ideas used in giving guidance to the student teachers has helped to clarify the concepts used, while the detailed results provide a strong basis for further clarification and improvement of the guidelines.

Mention has already been made of the conduct of the interviews, but here it is worth examining in what ways and for what reasons the researcher found interviewing difficult. In all research interviews, a balance has to be struck between employing social skills so that the interviewee is relaxed and inclined to be forthcoming, and maintaining a research discipline so that the interview is more than a casual conversation. In semi-structured interviews this tension is highlighted; and when such interviews are carried out within an action research framework, the potential pitfalls and problems for the interviewer are considerable.

In the interviews of twenty four interns and twenty four mentors carried out as part of the preliminary studies, the researcher showed that she did not fully understand that there is a difference between controlling responses and controlling the interview. In her anxiety to maintain an open stance - and not control the responses - she failed sufficiently to discipline the interviews (especially those with the teachers), with the result that they

were very diffuse, and as explained in Chapter Three, impossible to analyse fully in the time available. This mistake was not repeated in the interviews carried out as part of the main study: the interviewer was much more alert to the need for probing, and to the importance of checking that her agenda had been addressed. However, achieving and sustaining the requisite balance between warmth and hard-headedness was doggedly elusive. Part of the problem was that the researcher's feelings of gratitude to the interns and teachers for agreeing to lengthy audio-taped interviews, and relief at having been able to arrange them, led to her perhaps putting even more emphasis than necessary on the affective aspects of the interviews.

In addition to concerns about the fruitfulness of the content analysis system and about the conduct of the interviews, a persistent problem for the researcher was the one always inherent in action research, namely the tension between development and research. Research and action are two different enterprises, but the differences between the two are quite subtle. For the researcher, the identification and articulation of 'problems', such as interns' need to appreciate teachers' craft knowledge as a potential solution to their own problems, is a success in itself. But such elucidation of problems is also of value to the actor, provided that it contributes to the development of viable solutions to these problems and thence to plans for action. Nor does the researcher lack problems of her own, for example about how to gain access to the evidence she needs without imposing her own preconceptions. The tension does not seem even to come from the clearly different nature of the two sets of problems; it comes most strongly, perhaps, from the need for both kinds of problems to be solved within limited time frames and from the competing priorities that they therefore present. Does one, for example, plan the details of the new year's programme that has to start next month using one's best understanding of what the previous year's evidence has shown? Or does one devote the available time to a more rigorous analysis of that evidence, in the hope of gaining new insights and risking a poorly planned programme?

Although the researcher was not a teacher enquiring into her own practice, she was in the position of many teacher practitioner researchers: she was an experienced actor, but a novice researcher. It might be assumed that such a situation would lead to the researcher focusing on the development at the expense of the research but, unlike practising teachers engaged in action research, she was working in an environment in which research was seen as a worthwhile activity. The difficulty for her lay not in a lack of interest in, or commitment to, the research, but in fully understanding the relationship between the two. At times, the tension between them was experienced as anything but creative. The need to justify conclusions on the basis of careful examination of the evidence, for example, was sometimes seen as an unnecessary brake on the action or a fussy complication of it; and there were occasions when developmental rhythms became a serious constraint on the research.

## **Implications of the study**

### **Student teachers' learning**

An implication of this study that echoes the extant literature is the dominant reality of student teachers' varying idiosyncratic ways of thinking about learning to teach and about teaching. It is also the case, perhaps, that this reality assumes even greater importance when student teachers are engaged in learning from experienced practitioners as any such learning necessarily involves the interaction of two sets of idiosyncracies.

In extreme contrast is the second implication emerging from this study of the commonality among student teachers in their almost obsessive concern with what is 'natural' as opposed to 'artificial'. Their anxiety not to be out of step with the rhythms of school life together with the busyness of schools and of teachers, is revealed as the overriding factor governing their learning opportunities in school, except for what has to be done to meet the formal requirements of their course. This study illustrates the fact

that if schools and student teachers do what comes naturally to them in terms of student teacher learning, that learning will be dominated by patterns of socialisation, with the student teachers wanting and being encouraged to learn predominantly through absorption and osmosis. It illustrates too how these patterns can be broken, but only through the imposition of a relatively sharply defined and apparently rigid procedure. It seems very likely, given the pervasiveness of the domination of school-based teacher education by such patterns of socialisation, that sharply defined and clearly required procedures may be much more widely necessary if school-based teacher education is to realise its potential.

The third implication of this study in relation to student teachers' learning concerns their changing perceptions of what is relevant to their learning as they progress through the year. This study suggests that a critical factor in student teacher development is their readiness for different kinds of learning. It seems, for example, that only when they have achieved their basic competence as classroom practitioners and are correspondingly confident, that they are ready to think beyond immediate practical concerns. Thus not only were the interns' ideas of 'relevance' radically different in the latter part of the year, but also their understandings of the kinds of learning that could be valuable to them were very different. As the much more structured curricula and procedures for school-based teacher education that are necessary come to be developed, there will need to be much fuller recognition in schools of the very different possibilities for learning at different stages of even a one-year course.

## **Implications for policy and practice in initial teacher education**

### The procedure

This study suggests that it is possible for student teachers to access experienced teachers' craft knowledge through the adoption of procedures broadly similar to those used by

Brown and McIntyre (1993) when interviewing teachers following observation of their teaching. Furthermore, there are indications that such a procedure may be uniquely effective in enabling student teachers to access craft knowledge. There is, for example, no support for the findings of the Scottish study, as reported by McAlpine et al (1988) that the success of some teachers in revealing their craft knowledge is independent of the conduct of the student teacher; and there is every indication that, with the exception of collaborative teaching (and that of a limited kind), established ways in which student teachers engage with teachers do not offer opportunities for gaining access to craft knowledge.

Evidence from this study points to the importance of a clear structure in any guidelines offered to student teachers about how to gain access to teachers' craft knowledge, and about the difficulties for teachers in articulating it. Misgivings about the wisdom of attempting to provide a uniform procedure for the use of student teachers whose idiosyncratic preconceptions, concerns and needs are well documented can be set aside. It is clear from the evidence of this study that student teachers can be relied on to adapt and modify guidelines to take account of the context and the personality of the teacher, and of their own distinctive purpose; and clear, highly structured guidelines provide a framework for individual adaptation and manoeuvre.

In addition to indicating that it is possible for student teachers to make effective use of a procedure based in broad terms on one used by researchers, the study also reveals that in two areas - those of openness and probing - the procedure needs to be reappraised.

For Brown and McIntyre (1993), openness was 'a crucial strand' of their research strategy:

Openness on our part was seen as essential if the teachers were to be encouraged to bring to consciousness their own perceptions, concepts and decision-making processes. (p.36)

Student teachers are, however, in a different social situation from that of researchers, with different criteria and different kinds of expertise, and it would be unreasonable to expect all of their questions to be open. Moreover, to assert that in terms of their helping the teachers to reveal their craft knowledge to the student teachers, all open questions are helpful, and all closed questions problematic, is to oversimplify: only certain kinds of open questions are helpful, and only certain kinds of closed questions create difficulties. The relative frequency of open questions may not therefore in itself be a problem with the procedure; however, the lack of correlation between the openness of questions and the accessing of craft knowledge is puzzling. It is possible to make tentative suggestions that the lack of correlation may be associated with student teachers being in a school for a sustained period of time and getting to know the teachers very well so that they are sometimes well placed to ask well judged relatively closed questions. Nonetheless, it remains the case that on the basis of the evidence so far analysed it has not been possible to find a satisfactory solution to this puzzle. Clearly, therefore, it warrants further work, starting with a more detailed analysis of the responses which followed different open and closed questions. The strength of a content analysis approach was that it showed the respects in which adherence to the guidelines had the predicted effects. A more open kind of analysis will be needed in order to generate new hypotheses and new guidelines.

Probing is the second area of the procedure that calls for further work. The results showed that the student teachers, while successful in avoiding follow up questions that call for the teacher to justify an earlier response, tended to use probing in order to clarify or confirm their understanding of teachers' responses to earlier questions, in effect saying, 'Have I understood you properly?' Moreover, there are indications that even when probing for elaboration, student teachers are seeking wider generalisations which may encourage the teacher to talk in decontextualised terms. Clearer and more persuasive guidance about the kinds of probing that will not appear negative but can give access to richer information about teachers' craft knowledge seems to be needed.

It was suggested earlier than an important aspect of the procedure is the structure that enables student teachers to make intelligent use of it to suit their distinctive contexts and purposes. First, however, they need to be persuaded of the value of adopting it. The powerful effectiveness of the changes that were introduced at the beginning of the third year of this study points to the importance of it being an integral part of the planned programme of teacher preparation, introduced to the student teachers in the latter stage of their course, and related to their agendas in terms of their self-evaluation. There is also the possibility that the fuller introduction to the nature of teachers' craft knowledge that was offered to the student teachers was a contributory factor in their adoption of the procedure.

### The Internship scheme

What are the implications of this study for Internship? Clearly, there can be no complacency about the extent to which Internship principles have become practice within the scheme. Furthermore, given the difficulties in setting up the operation for what, it must be acknowledged, is but the first step towards student teachers making use of teachers' craft knowledge on an equal basis with other sources of knowledge and thus looking at it critically, one needs to ask whether such an aspiration is realistic. This study shows that any testing of the knowledge accessed was done privately and furtively; there is clearly a very long way to go before the goal of bringing the critical evaluation of teachers' craft knowledge into a public and accepted curriculum can be countenanced, let alone achieved.

It is also evident that at the time of the study there was much work still to be done before the aspiration of fruitful observation of teachers and of effective observation by teachers of student teachers with provision of feedback could be realised. It is possible that the situation has changed as a result of the widespread use by mentors of a detailed handbook that was the culmination of a research and development project subsequent to

this study. In the absence of any evidence, however, that must remain at the level of a possibility.

### School-based initial teacher education

It is those who take teaching not to be a highly skilled activity who would justify the move to school-based initial teacher education on the simple grounds that it gives student teachers greater opportunities to practise teaching. The much more justifiable argument for this move is that it offers the possibility of student teachers learning more effectively from the expertise of practising and experienced teachers. However, as this study has demonstrated, or at least exemplified, such learning depends on highly organised and structured procedures which, in relation to the normal life of schools, are likely to be seen by many - and especially by student teachers - as very artificial. For those accustomed to thinking of schools as places for the teaching of children only, an explicit planned curriculum for initial teacher education, and correspondingly planned learning procedures for student teachers, will seem unnatural; but without such planning and the associated 'artificiality', the potential benefits of the recent changes are unlikely to be realised.

### **Implications for research**

This research project focused on a specific procedure with a specific purpose within the framework of school-based initial teacher education. No apologies are offered for the specificity of this focus. On the contrary, it is argued that research of just this kind - although not only of this kind - is needed on a substantial scale if primarily school-based initial teacher education, which now seems to have been firmly adopted in England, is to realise its potential or is even to be a satisfactory substitute for what it replaced.

First, to investigate further the implications of what would seem from this research to be a very promising procedure, there is a need to investigate in what ways, if at all, student

teachers make use of the craft knowledge articulated by teachers. Most of the student teachers in the present study were very confident of its value to them in understanding better what was involved in the observed teachers' apparently effective ways of dealing with aspects of teaching which they, the student teachers, were interested in; but it is clearly important to try to trace the impact of such learning on the future thinking and practice of student teachers.

The implications of the procedure should also be pursued in relation to teachers. In what ways, if at all, do teachers benefit from articulating their craft knowledge? It has been consistently claimed by the teachers in Brown and McIntyre's (1993) study, by the teachers in Scotland in the study reported by McAlpine et al (1988), and by those in this study that they benefit from the process of articulating their craft knowledge. Such claims need to be investigated critically.

In the longer term, there will be a need to ask about the conditions necessary for a curriculum in which student teachers, having gained access to teachers' craft knowledge, should openly examine that knowledge critically. In present circumstances, it is almost inconceivable for such a critical perspective to be employed in anything other than a hidden way; yet such a perspective is necessary. Exploratory studies to understand better the cultural taboos and personal insecurities which make such an approach impossible at present need to be followed by action research studies testing the adequacy of strategies for change.

However, this research has been, and these further suggested projects would be, focussed on only one of the many different procedures necessary for a school-based initial teacher education curriculum. Similar attention needs to be given to other procedures, many of which should develop from existing practices. Yet too little is known about these existing practices. For example, little is known about the various kinds of conversations that take place between student teachers and teachers in school: what are they about?; how are they structured?; who takes the initiative? We need to know much more about

these conversations. Among other things it would be useful to know in what other contexts teachers' craft knowledge may be revealed. In a search of the literature, the researcher did not come across any studies that offered similar detailed analyses of other kinds of interactions between teachers and student teachers. Such analyses would provide useful new starting points.

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OBSERVING TEACHERS AT WORK : MAKING SENSE OF WHAT THEY DO

The kinds of ordinary, everyday things which teachers do routinely and more or less spontaneously in classrooms, can be a source of concern to an Intern or beginning teacher. There is much to be learned from watching experienced teachers, but it seems that the more skilful the teaching, the easier everything looks and the more difficult it is to understand how success is achieved.

It is not always possible for you, as Interns, to appreciate the complexities of classroom life simply by attending the lessons of experienced practitioners; you may indeed misunderstand if you are not thinking about the class and the teaching in the same way as is the teacher. You can, however, develop a much fuller understanding of a particular lesson if, following observation, you are able to discuss the lesson with the teacher. You can better understand, for example, the teacher's purposes, the pupil activities and types of progress with which the teacher was pleased and the action taken to bring them about, and the conditions that (s)he had to take into account when deciding on the appropriateness of certain actions. The procedure outlined below has been developed to enable you to make maximum use of the opportunities afforded by observation in order to learn about teachers' skills, strategies and achievements in the classroom. The focus is always on the teacher's successes and how these are achieved, and there is no question of you being encouraged to make judgements.

In advance of the lesson the Mentor establishes the focus of observation which, in the first few weeks of your time in school, is likely to be basic classroom management skills: introducing the work of the day to a class; beginning and ending a lesson; the transition from whole class to group activity. As the term progresses, and your understanding (and experience) of classrooms grows, the Mentor, in selecting a focus for observation, can respond to what you need in order to demonstrate these basic abilities. Once these have been established, you will be in a position to take the initiative in determining the focus of observation. At this stage then, the most fruitful agenda is likely to be one that has been suggested by you and has been agreed upon in discussion with the Mentor. You may wish to concentrate on those aspects of the Mentor's teaching that you regard as their major strengths; equally, you may decide to focus on an aspect of teaching that you as inexperienced teachers find especially problematic. Once the focus has been determined, the Mentor decides which lesson would be the most appropriate to observe.

In advance of the lesson the Mentor also gives you any information which would help you to have a better understanding of the lesson you are to observe. This could entail telling you about individuals in the class, describing the work the class has been doing, outlining the teacher's goals, and providing you with copies of any worksheets or other materials that the teacher intends using with the pupils.

During the lesson you will need to make notes to serve as a basis for the interview with the teacher which follows the lesson.

In the interview you should ask focussed questions about specific events in the particular lesson you have observed, with the aim of coming to a fuller understanding of the teacher's thinking and actions in the lesson. It is useful to tape-record the interview - which should last for ten to fifteen minutes - so that you may later reflect on what you have learned from watching

an experienced teacher at work. Since the interview focusses on events and actions observed in a particular lesson, the sooner it takes place following the lesson, the more useful it is likely to be; ideally, it should take place on the same day as the lesson observed.

It is hoped that throughout the period of J and S weeks it will be possible to follow the suggested procedure for observation and discussion about once a fortnight.

Interviewing the teacher : some suggestions and reminders

1. It is generally useful to ask questions that focus on:

(a) the teacher's successes or achievements.

You might start by asking the teacher to identify some aspect of the lesson (within the predetermined focus) that gave her/him satisfaction.

Example: What pleased you most about the group work today?

(b) the actions taken by the teacher to achieve those things.

Examples: I noticed that they all managed to do the experiment successfully. How did you bring that about?

or: You said that you were pleased that everybody in the class contributed to the discussion. What did you do to bring that about?

(c) the teacher's reasons for taking the action s/he did.

Example: Can you tell me why you did that?

(d) the conditions, circumstances etc. that led to the teacher making the decision to take a particular action.

Example: How did you know they were tired of reading?

2. In the interview you can help the teacher to talk about the ordinary, everyday things that s/he usually takes for granted. Never be afraid of saying: Could you tell me a little more about that?

Example: Intern: You said that you were pleased because the noise level was appropriate; can you tell me how you judged what was an appropriate noise level?

Teacher: It's a balance, isn't it? The atmosphere is there, but the work is there as well. I was happy with the balance today. It's personal, it's hard to say.

Instead of moving on at this point to something else, it would now be helpful to ask:

Intern: Can you talk a little more about that balance, and, for example, how you knew when it was the right balance?

3. Try not to frame your questions as generalisations; relate all of your questions to the particular lesson observed.

Example: How did you manage to get Patrick and Clare to do so much work? rather than:

What do you do to encourage or persuade unwilling pupils to work?

4. Try not to go off the point. Your job is to seek information from the teacher, which means asking questions about what you saw in the particular lesson observed. Try not to be diverted from this purpose by, for example, relating anecdotes from your own experience, or by speaking of some other areas of teaching, important though these may be.
  
5. For many teachers, being interviewed in this way will be a new experience, and they may feel anxious about being asked about what they did in a lesson, and why. Be sensitive to these anxieties, particularly in the way you ask questions. For instance, a question which invites a yes/no reply does not help a respondent to give an informative answer; but, more important, it may also convey suggestions of what the teacher should/should not have done, and so have overtones of criticism.

Example: Did you have a lesson plan?

6. Never ask: Why didn't you .....?

Hazel Hagger  
October, 1987

HH/skl

## WHAT'S TO BE LEARNED FROM TEACHERS?

While you are watching the video of the teacher at work in the classroom, make notes on this sheet of anything that interests or puzzles you, or anything that you would like to understand more fully.

When you have finished watching the video, please respond to the two questions overleaf using your notes as a basis for your answers.

What would you want to know that you cannot know simply from looking at what is going on in the classroom?

What are the questions you would ask the teacher in an interview following the lesson?

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Peter Benton MA  
Tutor for the Postgraduate  
Certificate in Education Course

23 October 1987

*To Professional Tutors; Mentors  
General Tutors; Curriculum Tutors*

Dear Colleagues,

Assessment of Interns

Over the past months we have several times discussed aspects of assessment of Interns and have already agreed certain principles and understandings which are recorded in the Internship Handbook. I think that now the Interns are settling into their schools, it might be helpful to remind ourselves of some of the points and to look at what they mean in the context of working in the classroom and supervising the Interns.

The attached guide *The Supervision and Assessment of Interns* is presented under four main headings:

Principles  
Dates  
Diagnostic Assessment  
List of Important Abilities.

At a later stage in the year, more information about Interns' self-evaluation will be sent to you.

The guide is for the use of all teachers working with Interns and is based on sections E and G of the Internship Handbook.

I also enclose copies of the note relating to learning from *Observing Teachers at Work* which has been given to all Interns. This has appeared in the Internship Handbook as Schedule (c) and further copies were promised at the Gulbenkian Conference at Keble when, as you may recall, Hazel Hagger talked about learning from the practical craft knowledge of teachers. The additional notes on *Interviewing the Teacher: some suggestions and reminders* are new. Both sections have been extensively talked through with the Interns at sessions in Norham Gardens.

Finally, I am delighted to be able to remind you that Hazel Hagger, as Field Officer for the scheme, is very keen to come into schools to talk to Mentors and/or any teachers working with Interns about any aspects of Internship and in particular about monitoring progress, assessment, and learning from craft knowledge. There is a film, relating specifically to this last item which you are most welcome to see. Interns have already seen it as part of their session on Observing Teachers at Work.

Internship has got off to a splendid start. Thank you all very much for the time effort and professional commitment that have set the scheme on course.

With Best Wishes,

  
Peter Benton

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13 January 1988

Observing teachers at work: making sense of what they do

Dear Intern,

In October you were introduced to a particular form of observation of experienced teachers which called for a discussion with the teacher following the observed lesson. During the lecture we outlined the specific procedure that we had found enabled Interns to make maximum use of observation to learn about teachers' skills, strategies and achievements in the classroom.

The two school-based days during J weeks have been very hectic for both Interns and Mentors; it's not surprising, therefore, that a number of you have not yet taped an interview with a teacher following an observed lesson. In any case, now that you have more experience of classrooms both as teachers and as observers, such observation will be of even greater value.

Attached to this letter is a short questionnaire. I should be very grateful if you could complete it as soon as possible and return it to my pigeon hole as I am interested to know about your experience of this procedure so far.

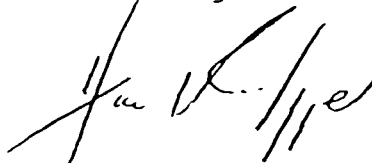
Whether or not you managed to try out this particular form of observation last term, we should like you to use it at least twice this term, once during the J weeks (before 13 February), and once again during the first half of the S weeks (between 22 February and 25 March). I am contacting all of the Mentors to remind them of this kind of observation and to inform them that you have been asked to make arrangements to observe and interview an experienced teacher (most probably the mentor) on at least two occasions this term.

For this kind of observation to work, it is important to understand the particular purpose of it, and then to follow the suggested guidelines. If you no longer have a copy of the written material that was distributed in October when you saw the video, or if you would like to talk about this particular way of learning from teachers, then please come to see me.

I have plenty of audio tapes should you have trouble in getting hold of one, but I would remind you to check that the tape recorder is working properly and that the sound quality of the tape is good before you begin the interview. When you have done your observation of the teacher with follow up interview, please label the tape with your name(s), lesson observed and date. Similarly, please label the second interview which can be recorded on the other side. Once you have finished listening to, and learning from, the tape, I should be grateful if you would put it in my pigeon hole.

I look forward to receiving your questionnaires and tapes.

Have a good term,



Hazel Hagger.

Enc.

Observing teachers at work: making sense of what they do

If you observed and interviewed a teacher as a pair, indicate this on the label of the tape, but please complete the questionnaire individually.

THERE FOLLOW FIVE STATEMENTS. SELECT ONE WHICH BEST DESCRIBES WHAT YOU HAVE DONE SO FAR, AND CIRCLE THE NUMBER OF THE STATEMENT YOU HAVE SELECTED.

1. I have a tape of an interview with my mentor (or other teacher) following an observed lesson.
2. I have attempted to follow the procedure outlined, but I have not taped an interview.
3. I observed my mentor (or other teacher) and talked with her/him afterwards, but did not restrict myself to the kind of interview suggested.
4. I have not attempted to observe and interview my mentor (or other teacher), but the way in which I have approached teachers has been influenced by what was said in the lecture about the professional craft knowledge of teachers.
5. I do not think I have been influenced in any way by the lecture in October.

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PLEASE COMMENT ON THE NATURE OF YOUR EXPERIENCE OF THIS KIND OF OBSERVATION, GIVING THE REASONS FOR HAVING DONE WHAT YOU DID.

COMMENT

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Please return the completed questionnaire to my pigeon-hole (staff pigeon-holes through door on left immediately after the main entrance to No. 15). You are free to fill in your name or to remain anonymous.

Name .....

If you have selected statement 1, then return the tape of the interview along with the questionnaire (two questionnaires if you observed and interviewed as a pair). Remember to label the tape with your name(s), lesson observed and date.

Thank you very much for your help,

Hazel Haqger.

#### **Appendix 4: Transcript of student interview**

Q Right this observation and discussion thingy, you did it twice, yes?

A Yes

Q OK, do you want to talk about them separately or, yes I think we ought to talk about them separately, separately really, then we can bring them together at the end.

A OK, yes.

Q So the first one right. Did you have any problems setting it up, in making arrangements?

A Yes I did, for the first one really, because people weren't too keen to be interviewed and taped and listened to for the people of the Department of Education, so both my interviews were in the last week of S weeks, because no one was too keen until pushed that they had to get this done.

Q OK, what was your focus?

A I was focusing on discussion in maths lesson and that was set up and the lessons I observed I did specifically from a maths point of view, for maths discussion less as opposed to other discussion in another style of teaching.

Q Right, taking the first one first, was what, was it the appropriate lesson, was there discussion?

A Er, there was discussion, yes, it was, er, it was quite difficult to focus on how it was achieved, because i knew the teacher hadn't really pre-planned the lesson until about 5 minutes before it, so I could see that she was, how her mind was working and sort of where she was getting stuck with her approach, so it was quite difficult to focus on how valuable to actual discussion was, I was focusing too much on the teacher and thinking what she's going to do now, because I knew she hadn't decided what she was going to do.

Q Right, that's difficult. When you observed, did you sit and write notes, did you just watch or did you sort of go off smiling to yourself or what?

A I wrote one or two notes, but I gave up after about 5 minutes, I thought it was more valuable to just to sort take in what was going on then take any notes afterwards or think about it afterwards, so at the time I was just giving my attention to what was going on, when you write things down you miss little bits of it.

Q That's right. The follow up discussion, did that take place soon afterwards or the next day, couple of days later or...?

A It took place, quite soon afterwards, a couple of lessons later.

Q Did you have a private place to talk?

A Yes we did, we went to an office, so we weren't interrupted.

Q Without kids rushing in and out or anything like that?

A No.

Q In the discussion what was the teacher like, relaxed, uneasy or what?

A Uneasy about the tape, so think the teachers tend to be unnecessarily defensive, they seem to go on the defensive line from beginning rather than just sort of analysing what's gone on. I hope it wasn't my questioning technique, but it just seemed a very unnatural sort of conversation, I talked to the teachers before and had a joke and got what I wanted out of it, whereas I tended to be a lot more formal.

Q Fine, so what did you find difficult? So, can you, I don't know if its possible for you to be more specific about what was difficult as you tried to follow the procedure as sort of laid down?

A Yes, well, one of the problems I had at the time with it being quite soon after the lesson was that I had thought that it wasn't a very good lesson ...

Q Right.

A Which made it, on reflection it probably wasn't as bad as it was in my mind at that time it being quite so soon afterwards. At the time I thought it wasn't as good as it might have been ad I know that teacher can do some really good lessons, so I knew she

hadn't performed anywhere near her best at the end of it, that was quite difficult and er, I knew, also I knew at the time that the main reason that we were doing it was for the benefit of the people in the department as well as self-evaluation so we were there and we were conducting this interview, but we weren't that interested in what we were talking about.

Q Right, yes you were going through the hoops.

A Yes

Q Yes right, so did anything useful come out of it at all? Do be honest, if the answer is no, answer no.

A Er, well what was interesting was the part of the lesson where she got definitions from several groups about vectors and she, and they went about eliminating them, they had to vote on the one which one they thought was most appropriate and then we picked the least popular one and I didn't know if she picked the least popular one, for the sake of discussion or whether she thought it was the best definition.

Q Because you didn't know, and you were actually ...

A Because I didn't know, because I would have picked another one.

Q Yes.

A And it turned out that she picked it because she thought it was the best definition. That was interesting, because I think the way definitions work you shouldn't pick any of them and pointed out things that were wrong with other ones and discuss them.

Q Sorry to push on this. How was that useful for you as a sort of beginning teacher to know that or was it ...?

A Well, that that was really just a point of interest.

Q Point of interest.

A More than anything else.

Q Did anything useful at all come out from observation?

A Er, not from the discussion, although from the lesson I had a little bit, I definitely learnt what I learnt from observing the lesson rather than discussing it afterwards. In fact in general, I found that after I'd been teaching during the S weeks, that it was very useful to observe lessons afterwards, particularly with a focus and think, You know I don't do that, why don't I do that and the discussion element wasn't needed.

Q Why not, total, absolute honesty here. What about with the second teacher, was it the same sort of thing that they were on the defensive, weren't keen?

A Er, no no they were a lot better, er it was a much more interesting lesson I thought the children were much more involved and so it was a more exciting lesson, and I was more interested in achieving that sort lesson than the previous one that I had observed. So, yes a number of things were useful from that.

Q Can you remember them?

A Yes I was interested, one thing that interested me was the teacher's mannerisms, which I don't think she was aware of

herself, that actually have quite an effect, like looking puzzled and I asked her to explain. Now, she wasn't really aware that she was doing those and I asked her about those and also I wondered to what extent she was leading the class in the direction she wanted to go.

Q Right.

A To what extent she was just letting them explore things for themselves, so that was quite interesting to to work out what she was trying to do, and afterwards tried the same thing in the work of lesson of the same class which she observed and then get her thoughts on that and then we discussed that.

Q It was actually something you tried out for yourself?

A Yes, that's right.

Q And am I right in thinking, and I don't want to lead you here at all, but you're saying through being to discuss it with you actually did find out some things which you couldn't just from the observation in that particular instance?

A Yes yes.

Q Were your questions genuine?

A Yes, yes I actually wanted to know how to do that sort of lesson, because I find discussion on the scale where everyone in the class is involved is quite difficult to orchestrate, particularly with some subjects in maths where you can be discussing something and the brainiest person in the class will sort of five minutes in or quite early on, will produce an answer which says absolutely everything about what you wanted to discuss and 99% of the class don't know what's going on and it's quite an awkward situation. but that was quite valuable discussing that and things that came out of that particular subject matter being more suitable for that sort of lesson than this, it was quite useful.

Q If you had to put your finger on why the second one was better than the first for you, by better I just mean it was actually of some use to you whereas the first one wasn't really, what were the sort of factors, was it the lessons, was it teachers or ... was it the way you asked the questions, I don't know, the general atmosphere?

A I think the teacher in the second lesson I found it easier to discuss with anyway, because the teacher in the first lesson was the head of them all.

Q Was that the mentor as well? Yes I know her.

A Yes, and more assertive and although she's got a certain character, we get on alright, I find it more difficult to discuss freely with her, whereas the second teacher I find it much easier to discuss and it's a teacher that I very much admire in a lot of ways. I think she's very good and she's always willing to talk about what she's doing or what she's going to do or what she's done and give you helpful advice, I found that much more, easier to talk to.

Q Was the second conversation different because you knew her better? Did you ask different kinds of questions, or what?

A Er, we started off on some specific questions about the lesson, then I think we talked about one or two points in more general terms, that had come out from that. I didn't ask sort of general questions about teaching

as a whole it was more sort of building out of the lesson, I think, I can't remember in detail.

Q A lot has happened since then, great.

Anything else you want to say about those, you know about having a go at those two things?

A Er. Not really no.

Q OK, fine, thinking about the year as a whole and and in sort of learning from experienced teachers as much as anything?

A (pause)

Q Not necessarily the things you learnt but the ways in which you learnt? Like observation, perhaps planning together, perhaps teaching together, perhaps then talking about your lessons, you know all those sort of things? Can you just talk about those for a bit?

A Yes I think, going back to quite early in the course and in the initial training where we have to do, or were meant to do quite bit of observation, I didn't find that all that easy to do at that stage. We also had just done three weeks observation before we started and I

wanted to get on with things a bit, but when it came to, I focussed very much at the beginning of the course on trying to work out how people kept good discipline in the classes, not that I had a go myself, but it was something I wanted to get right when I did start, so early in the course I was trying to, I was focusing on how they kept the discipline in the class or how they seemed to present themselves to me, and it all seemed to be very easy to them because they, I suppose that they got their confidence and had already established themselves in their classes and all that sort of thing. So I was looking at how they actually structured the lessons, beginning and ends of lessons and how they reprimanded pupils if they did and how pupils got to know where they stood, so that was something that very much focused on, early on rather than perhaps on focusing on, on how they were achieving things based on the contents of the lesson ...

Q Yes

A And the children's learning and I think that became much useful as I got to do some one teaching myself, well I thought these, how many people have learnt this, and if often happened, why I learnt and at that stage it

became much more useful to talk to teachers who observed my lessons or to observe their lessons again. Although once S weeks began I didn't really then observe many lessons until right at the end of S weeks and the beginning of the final J weeks, so some of the things I've learnt since then I haven't really been able to put into practice in a whole class situation.

Q You said that the observation was a bit difficult at the beginning because you had already done three weeks of the intensive observation any way ....

A Yes.

Q Can you say more about that?

A Um, I don't think you know what you're looking for at that stage, because you haven't tried things, you don't know what you'd do in that situation and yer, it does get boring it's a bit like being at school yourself, when you don't do these lessons and if you're taking part too much. Most lessons I observed I didn't just sit at the back and observe I moved around the room and the children and we discussed the lessons with ... the teachers who were quite often willing

to discuss in the middle of the lesson what they were doing and where they were going next, which was quite interesting and then, I learnt to what extent, just talking in the staff room to what extent the people target their lessons, because when we started we planned down to the last detail and just to find who wrote down notes and who didn't ...

Q On the back of an envelope.

A Who had thought about it until five minutes before.

Q Yes yes. so you had conversations in the staff room, did you do any collaborative teaching with teachers?

A Any what, sorry?

B Any collaborative teaching with teachers?

A yes we didn't, not sort of as a double act, the teacher would say quite early on, perhaps you'd like to, this is what we're going to do then perhaps you'd like to introduce the activity to the class so you'd do that at the same time, so that was quite, it was quite good. I like the way in the J weeks at the

beginning of the course that you can

gradually get introduced to, the teaching.

So I think that was a very positive aspect of the course in general and being able to do bits in other people's classes.

Q Yes. Thinking again generally about teacher experience, knowledge that they have from that experience, you've mentioned observation and teachers, when you're observing, chatting to a member of staff in the staff room, of all the ways is there one you'd pick out as being the one that's been most valuable to you?

A Um (pause)

Q Or least valuable, can you differentiate?

A I think early on what was tremendously valuable at school was thinking about the lesson you were going to do and what you had to teach, meant you had some ideas of how you could teach those but not really knowing how to put those into a lesson, become a lesson in itself, sort of things that people should be doing, and just to talk that over with teachers. And they'd say, 'that's a good idea you can use that if available maybe

you'd like to think that', that sort of thing early on is very useful.

Q What about observation and discussion, can that be valuable?

A I think it's more useful to be in the lesson, than maybe just to informally talk as it comes naturally in conversation about a lesson, that you pick up some things, you might not sort of learn enormous amounts from each lesson but little things, whereas if you sit there you're going to observe a lesson and then you're going to talk about it afterwards, that's not such a useful way of doing things.

Q Say why? I'm sorry, they are difficult questions I know.

A I think you've got to be very well focussed on what you're doing, and it's always very difficult to pick out certain things from a lesson that you specifically want to talk about, or maybe you've gone in and you want to look at a particular point and maybe that's not the most interesting thing about the lesson anyway or maybe that point isn't in the lesson.

Q So you're saying it's difficult to have the focus before because it might not be there?

A Yes.

Q On the other hand if you don't have a focus it's difficult to know what to pick out?

A Yes I think that's right. And quite often with things that come out afterwards things that maybe, the teacher thought it might be useful to do that at that stage, or they can see that certain people are having difficulty so they have decided to take a course of action and, they did something because, now that wouldn't necessarily be planned beforehand it might just be ad lib. I find it, I just find it more, just easier to talk about things informally, I find teachers come out with a more useful remarks when they are not sitting down specifically discussing something.

Q Yes right. Just going back to something you just said about wasn't necessarily planned it's done ad lib and so on, was that useful to understand, that, but hadn't necessarily been planned but they were doing it ad lib ad so on?

A Yes I think so, I don't think it will be something I would have wanted to do myself, early on but yes, I think the ways that they knew enough about that type of lesson or content that they were quite happy to do that, whereas I think early on in teaching I wouldn't like to suddenly decide to 'Oh, I forgot what I planned here so do this off the top of my head'.

Q Yes yes right. The informality that you've talked about a couple of times, I mean can you say more about that? Why is it better for you, much more ad hoc stuff you might chat about?

A I think it's better because it's much more diversified then and if it's in the content of a natural conversation, people are much more likely to say what they think rather than, or their real attitudes rather than thinking, I think if you put someone on the spot, they might have an instinctive reaction which is their real reaction, they might have, or just by being put on the spot, they start thinking about things and give you a different answer from what they instinctively thought.

Q Right.

A So you are getting a different sorts of answers.

Q So as a kind of interim you like to sort of talk with them about their work and about your work but you want it to be, for you the useful way is when it's informal?

A Yes.

Q Fine thank you. A couple of other things to sort of ask you about, I don't want these things to influence what you've just said, so before we go on to it, is there anything else you want to say about what we've talked about so far, about observation and follow up discussion or about the other ways that you've learnt from teachers and so on?

A No not really.

Q Right then. I am going to make some statements and I want to know whether you disagree or agree with them. 'A lot of beginning teachers believe that you can only learn, or you learn largely from a teacher whose style is similar to your own style of teaching;. Do you agree or disagree with that?

A I agree and disagree in different ways, I think you can learn a lot from a teacher who's similar to you, whose style is similar to yours from the point of view of practicalities in the lesson, but as far as ideas are concerned and different approaches you can learn a lot more from somebody different from you, and even though you might not have the same style or approach you can use their ideas. If you observe people the same as you you're not going to get, not going to advance so much.

Q Right OK thank you. Right another statement this is ... make it easier really. 'Thinking about experienced teacher and their experience, they are able to sort of take out of their experience and make it useful to you by applying it to your teaching, so the useful knowledge that they have, if it's useful at all, can come out when they are talking about your teaching, you should have done this and so on, and that's, and that's a good way of them using their experience to help you?'

A Yes, yes I think so, where there, you're teaching in a particular way and they have, they have to think about what you do, maybe you're not doing something as well as you

might and they have to analyse the way they do things themselves to, to help you improve, I think that's quite interesting for them, I think, so they are having to think about their own knowledge and how they do things before they can help me.

Q OK. Finally, no not finally, penultimately, um this business, this whole business about people like yourself learning from experienced teachers, it's only useful so long as you can, if you like, establish, sort of recipes, if you like, or generalised rules about what you should do, and it's not useful if you can't put it into your own teaching?

A Um, I think if you can't put it into your teaching you can still glean something of what they're doing, I ultimately think if you can't put it into your teaching anyway, or gain anything from it then it can't be useful but ... (pause)

Q That's true, put it into your own teaching and gain some use, I suppose the question can you gain something useful even if you can't put it into your own teaching, I suppose that's the distinction here that I'm trying to make, or is it only useful in so

much as you can only put it into your teaching?

A I think that if it's a positive thing, then it's only useful if you can put it into your own teaching. If it's a negative thing then you wouldn't want to put it into your own teaching, you would have learnt how not to do something.

Q OK, is that useful to learn not how to do something?

A Yes I think so, if you were saying say what did I do until that happened, then you learnt to really say, if you create an atmosphere in which people are going to get sort of so over excited that they are not going to be able to do anything, then that's not a good thing to do in your lesson and you want to catch that before it happens. So, you can learn by other people making mistakes.

Q Right, final one, 'you as a beginning teacher can understand experienced teachers' teaching by observation, not by observation and discussion but by observation'. What do you think of that?

A I think you can once you've had quite a bit of teaching, so maybe towards the end of the course you can look at their lessons, what they're doing and understand what they're trying to do, whereas the start of it you haven't a clue what they are going to do. You just sort of watch someone and say that's a school lesson, but you don't know why, what they're thinking about and various things.

Q So back to this thing about once you have had some experience of teaching you actually know what you are looking for and it's useful then to observe, but there isn't necessarily any need for any sort of follow up discussion really?

A That's right there might be one or two just little points that you want to say did you do this because of something else, but basically what you are getting is, you know, you're just observing and from that you can see what they're trying to do or maybe talk to them for a couple of minutes before the lesson, just to find out what it all means.

Q OK thank you very much indeed, thanks very much, Bob.

## Transcript of teacher interview

Q You've had loads of conversations with May, you've worked with her all year, how was this observation and interview different?

A Well, she asked me to prepare something that I could, I suppose show a specific area, like praise and punishment and I set up things that would allow that, well to be available for that and because she took the group, she had done, I would then go in. It's a difficult one to do, they were on the sort of basis whereby if there was a mistake or the lesson wasn't very well structured structured or you didn't on that day feel sharp enough, they would exploit that, so there was always this business, of you know, nailing them down right from the start. But having done that, within the right sort of context, the fact that she was observing, usually meant that she could observe the things accurately enough, I could then try out the things we had talked about, and she could then talk to me afterwards. Talking about it afterwards was as important as the observation, I would think, because I could think it through about why and certain things and certain times and

she asked me could, she asked me about that, so it was very useful, and although she said about the fact that it was stage managed and all this sort of business, in fact some of those, those two discussions were really very good, because there was a focus.

Q What made them really good?

A I think it was because I was having to think about it all, or think about it beforehand, consider that during the lesson itself and then discussion afterwards I was having to actually formalise it, and explain, explain within that context the certain things that I had done, which you don't normally do as a teacher.

Q How do you mean?

A Well, I mean last year was very interesting on the whole, because I was having to redefine things that I'd done and think about it from the point of view of a new teacher coming in, which I do generally, but this actually makes it a bit more structured to think it through.

Q Where you surprised by any of the questions? Do you remember being at all surprised by any of them?

A Some of them I couldn't answer, I mean, I didn't know the answer to them, and I had to talk round it before I, I got underneath it before to work out why I had done something, so if you'd asked me a question about, it is very difficult to think of an example, but something, why did I do something at that point and I only did it at that point because as a teacher you are playing the juggling game and it was appropriate at that stage to do it. There was a situation, I think I remember the lesson she was talking about, there was a situation where we were doing stage coaches, I think. I was going to take them down to take a look at Marlborough House, it was just a case of wanting to get them active at the beginning of a lesson, and I would have closed it all down if they'd started to misbehave. I got them out here and we started to construct a stage coach and I created a situation that three or four of them were horses, all four of them horses. And there was something I said, and I can't remember what it was now, but it was funny on their basis as well as hers, it was about Mr Ed, Mr Med, Mr Ed, there was a joke about that and there was a joke about something as well to do with Jamie who is a difficult lad. He was one of

the horses on the floor, that was just a way of controlling him, as well as keeping the others amused, and using his boredom at that point because he lost interest so I brought him back into it - there is all this sort of business. Now I had to think that through when she asked me, it was obviously one of the things that do because you realise that it needs to be done. But it's not necessarily anything you think about, so the answer (pause) ... Questions like that I didn't know the answer to, because they weren't in the plan, they weren't something I thought about, they weren't something I reacted to because I was playing that because of that group of people.

Q It sounds fun, I wish I'd been there. Do you think that was helpful for May? You said that you hadn't planned it, and so on ... Do you see what I'm getting at, Stu?

A Yes, yes I mean, I think, I think one of the things she might have learned from it, is that you can't just joke with a group and not have the discipline in the background, but once you have the discipline in the background you can joke but even that can go wrong sometimes and it's something that has to be spontaneous for it to work as we said, that fits in, in the whole sort of spectrum of it

and if the lesson is reasonably tight and disciplined we can fit in things like that and keep the pace going. You can't say right I'm going to do a joke, obviously that doesn't happen, you can't fit a joke into your programme, so it's a combination. May I think started the year thinking that teaching was going to be reasonably easy, and with her skills it was reasonably easy in some ways, but what she didn't understand was it took a combination of experiences as well as learning, as well as basic skills you've got anyway to allow you to within the lesson to actually teach a bunch of twenty, thirty kids. It's because it's not a lecture it has to be, it has to have a certain fizz to keep going, especially with a group like that. I think she benefitted a great deal with having that group. They tested out her, her skills and organisation, authority and she did very well.

Q The kind of things you talked about, how do you see that as part of your total expertise? I mean is it sort of minute, peripheral, important, central, I mean is it as important as everything else, or can't you remember what you were talking about? One of the problems I have with these questions that if I explain too much I'm prompting you.

(Pause) Right, the kind of things you've talked about with May on this occasion were sort of getting behind what you were doing in the lesson .Do you see that as, as important , having an important place in your total expertise or is it fairly unimportant?

A What allowing her to get to that?

Q Yes.

A Oh very important in a way it was an exciting year this year, actually being the mentor, not only was I able to rethink my own philosophy to do the teaching and have a sort of insight into, into the structure of what I have been doing for the last few years anyway, but it was also an opportunity to put forward in both sort of advice as well as example, the important things I feel about teaching, but without trying to indoctrinate. I mean that's as important as anything else, because both Steven and May have to develop their own ways of doing things, so I, I would tend to give a structure in survival for them, give them how I saw things fitting in, and I quite forcefully wanted to put forward my views on things and how I think kids should be treated and how they should

be taught. Yes, I see it as being quite important, quite central.

Q The conversation you had with her on this work the two of you had on this specific occasion, were they very much rooted to within the lesson, to what she'd observed or ...?

A Quite specific, I think, we followed, I occasionally expanded upon, well in normal situations I'll do this or this is a different circumstance, so I did draw in different things, but it almost always was to do with examples to do with the lesson, and specifically for that.

Q How, how is that different from someone sitting down having a cup of coffee with you and talking about praise and punishment which you might have been doing?

A Well informally, in an informal situation, say in the staff room over there, it doesn't go on as long or in as much depth, it's much more sort of incidental, and although we will occasionally dip into a discussion on what do you think of this, or how would you deal with this, it is very much a case of asking Bill ( a teaching colleague) what his opinion

is on that and be gone. We generally have the same sort of opinions, but we're nicely varied, so there is a sort of difference of opinion to get hold of. In the formal interviews either on tape or just me speaking to them, then it goes into far more depth and we would deal with specific points and we'd structure it down, work it through, so yes, there is a big differences. They get more out of the formal session, so if I sat down and talked about discipline, I would have thought out what I felt would be the important points to get across, combining that with what's in the handbook and putting by own notes and talking it through with them. As I said with Steve I went through role plays with him, we came in here, because I didn't feel he should be with May while he did that and I was a naughty boy and I wanted him to deal with the situation, that was it, because I didn't feel he understood certain things or was able to grasp them, because I didn't feel Steve had enough depth of experience to work out quite what was going to come to him and therefore he couldn't conceptualise that situation, he had to have it faced him in the form of me. What are you going to do now Stuart because I am not going to do what you've just told me to do?

Q And when May observed you and sort of asked you the sort of questions, the conversation, I'm trying to make sure I understand, the conversation was different - how was it different say from the other conversations you said were more formal than usual?

A The big difference with this new scheme is that the mentor actually feels they have a role and gets to grip with it, whereas before it was almost always incidental conversations and things, and there was a certain amount of talking, or we are only just looking after them, because I did it for six years before, that was a very sort of haphazard, there wasn't anything we could really get your teeth into, so this situation cropped up, but they wanted to talk to you, you do so freely.

Q When May asked, when May asked questions about your teaching, what sort of questions were they? Was it , for example all about classroom management, or was it about history, or what?

A It was a bit of everything, I suppose.

Q A bit of everything?

A Yes, within these specific interviews with the tape recorder, as you do with specific things, general things come out as well. On the whole I think we discussed practically everything, because it was within a structure and was about content she was interested in finding out about. (Pause) She was interested in all kinds of things - why did I do that? Or what do you reckon if we do this sort of thing?

Q Could it have been managed better by May or by the Department or whatever, about observing you and asking questions about your teaching? In other words, how was it for you?

A (laughter) Um, that's an interesting question, I'm not sure that this is the right sort of answer in a way, but I felt the impetus, that aspect of it trailed off dramatically in the second term of J weeks, right, it died then, because there wasn't the, there wasn't the incentive really on either side to really get to grips with it, and the discussions weren't formalized, and therefore it just I thought those were wasted weeks in terms of me as a mentor with a plan, although I must say, there wasn't anything frantically pressing on us, I

necessarily wanted to get across to them, but for circumstances one way or another we didn't get that done, so there was that aspect of it. But on the whole I saw them, probably, two lessons a week during the S weeks, or there were two slots in which we could interview and so there was a lot of time I spent talking to them about this.

Q And, and this one that May the two that May taped, at the beginning did you feel that you know, that May was, had helpful questions? Were they questions that you could answer?

A Yes they were, I remember conversations being full and I felt at the end of it that I'd got across you know, the things I would have liked to have done about the things she was asking, I felt it was quite rewarding both ways.

Q It takes a lot of time hasn't it, this observing you and the follow up discussion, and the kind of things we talked about or the kind of material revealed, I mean are there easier ways of getting access to that?

A Well, I guess although we only had a couple of interviews and there was the other situations in which we talked about the other things, which were probably a bit more

concentrated, so I thought within the time that was very useful way of using that, I certainly didn't feel at the time that it was a thing I had to fit in and it was a real drag, because it was simply one of the things we were doing, she used one of the times we normally discussed things to follow up that observation.

Q Would you I mean ideally, if there were time, would you want to do it more often?

A In a way we did. You see the tape recorder thing was just an amusing thing initially, because she didn't like hearing her voice and it was a case of getting used to that situation, but it was simply a case of talking, she had to do it on a more structured basis when she was interviewing, but we regularly spent and with Steve probably 40 minutes discussing something that they wanted to talk about and whether it was within the structure of the course or something that they felt they needed.

Q Did they regularly observe you as well, and sort of follow it up, or was it, was this different in this respect ?

A Yes.

Q How was it different?

A Most of the discussions wouldn't be on the observed teaching.

Q Right.

A There was less discussion on observed teaching, or less time on the discussion of observed teaching, what this was, was quite an in-depth discussion on particular things, that were observed, other than that they would talk about something they'd seen, but only as a sort of pocket for 10 minutes or so, because, in actual fact, most of the time the observed lesson didn't fit in with the rolling programme of when I was going to be seeing them, because either they were teaching or I was.

Q If it were possible to work in terms of programming, in terms of your time, would you want to have more or less of them talking about your observed teaching? Do you think it's at all helpful for them?

A A little bit more, but not much more.

Q Can you why?

A Well if it was possible to fit in, and the time is the problem.

Q Time?

A It's a real problem .I can't see it fitting in with the present structure, there'd have to be a specific lesson set aside, you know, more on top of what we've got already, eh, they would get stuck into it and we'd be able to observe more than praise and punishment or

Q Whatever.

A Whatever, we would be able to observe a series of things, they'd be able to actually look at the way that I dealt with the less able within the lesson, so we could almost structure it on that basis, of 5 or 6 things that they would benefit. from. I think that would be quite useful for them, but within the constraints t we've got I think that was as useful as we're going to get. Because you would lose out, other people would lose out, by me discussing for a longer period of time.

Q Fine, so in terms of its usefulness, was it ok coming when it did in the course and sort of on top of other things?

A I think it could have come earlier.

Q It could have come earlier?

A Yes.

Q When would you say?

A I don't really know really, I think it could have come in the first term.

Q The first set of J weeks?

A No not then, the first set of S weeks.

Q First set of S weeks, - why do you say that?

A Because at that point they are much more clued up about what they are supposed to be looking at anyway.

Q Right.

A J weeks they are just getting into it and the first set of S weeks I could see a couple slotted in there, and a couple in the second set, where this was only the second set I think, yes it was.

Q Yes.

A And it was after they had taught the groups, and therefore they were observing groups that they had already taught, which was useful of course, to see the situation there. But yes certainly.

Q Sorry to keep on, Stu, but can we go back to why and how this was different ?

A Well , (pause) because it was within the structure that we were going to have the interview formally on it afterwards . The whole thing required me thinking in depth more about it, and even in the interview there was depths that I got to that I hadn't thought through properly, because of the questions that they asked. So yes I can see that helping a great deal in that, whereas otherwise it is usually me imparting some of the information and them discussing what I'm telling them, the other way round is really quite useful.

Q Penultimate question, I've already asked it really, I'll ask it again to make sure I've got it right. In a 36 week course, which is what they have, I mean there is such a lot to learn about teaching, would you see the kinds of things they got hold of from this as priority

knowledge along with everything else during their training year, or is it something else?

It's not that important so it, it could wait until the probationary year or until they had been teaching 5 years or something.

A No I think it's priority knowledge, although I do think that there are some interns who wouldn't benefit from it.

Q Why's that?

A Because they haven't got the other foundation aspects sorted out properly. Now I felt May was already there, so what she was doing was asking me about things, because she had got the other stuff sorted out, she's asking me to go to the next level down.

Q Right.

A I don't feel Steve , although he benefitted from it, but for him it was simply an exercise to go through, very much more, whereas May did it because she wanted to learn about the sort of things she was learning.

Q That's really interesting - can you say a bit more about this level business?

A What she hadn't got ... not sure how to answer that. But because May knew what she was doing basically, but hadn't got the experience, one way of finding out quickly how things were done with experience was asking someone who was doing it, whereas for Steve it took, it wouldn't have been that easy for him to get on to that level. I think we still do it though for people like Steve, because with all the combinations of things, they'll still get an insight into any conversation. It's more fruitful for someone like May , because basically she was an interested teacher, wanting to learn more rather than as a student who was doing PGCE , which is a difference.

Q Final question , Stu. Anything you'd like to say that I haven't given you a chance to, that's come to mind while we've been chatting?

A I don't think so.

Q That was very good of you, Stu, thank you very much.

A Thank you very much.

## Appendix 5: Content Analysis System

### PROCEDURAL GUIDELINES - GENERAL

Teacher - code T

Intern - code S

Start with first move with substantive content and then code everything

In any move in which the talk is of the intern's experience of teaching- irrespective of who is speaking - add suffix S to coding of move.

T: *Sometimes that group can be very tricky*

S: *Yes, I found them very difficult at first last term*

reacting move, talk about intern's experience - **REA-S**

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To indicate that a line of thought or argument is continuing following an interjection by the other speaker, add (C) to the coding of the move in which the speaker continues with the line of thought - **STR(C)**

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**Content dimensions** are coded only if they relate to the **teaching** of the teacher or intern

- within responding and structuring moves, content and specificity are coded within a sign system
- implicit action or outcome - e.g. ' *Why did you start the lesson with such a communal good morning?*  
*To gather the class together so that they know when it begins*'

In the response, the action is assumed. The intended outcome is coded, as is the assumed action. The assumed action or assumed outcome is coded when it is necessary to show links - for example, when a factor taken into account is dependent on it. If implicit action or outcome is coded, level of specificity is coded at the level talked of previously. Otherwise it is not.

- in soliciting moves, the various categories are coded in terms of what is said or meant by the solicitor, rather than the response expected or sought.
- there are three main kinds of coded connections:

1. action ---- goal

2. that factor --- choice of action

3. that factor ---- choice of goal

# MOVES

The unit of analysis is a move. Moves describe the verbal manoeuvres of the teacher and intern. Moves are classified in **five** categories according to the function they serve in the discussion.

**structuring and soliciting** = **initiating** moves  
**responding and reacting** = **reflexive** moves  
**reacting/soliciting** = both **initiating** and **reflexive**

**structuring moves (STR)** - launch discussion in particular directions; they implicitly direct the conversation. They do not elicit a response, and are not in themselves direct responses to preceding move(s). Thus, the giving of information which is not in response to a preceding move constitutes a structuring move.

**soliciting moves (SOL)** - intended to elicit a response, and are clearly directive in intent and function.

**responding moves (RES)** - a responding move occurs only in relation to a soliciting move(s) and is directly elicited by a solicitation.

**reacting moves (REA)** - a reacting move is occasioned by a preceding move(s), but is not directly elicited by it. A reacting move may elaborate, clarify, expand, synthesise, rate or modify: it rates what was said in the move that occasioned it or modifies another move.

**reacting / soliciting moves (REA/SOL)** - a reacting move containing either explicit or implicit probing is both a reaction and a solicitation, and is, therefore, a reacting/soliciting move.

# MOVES

## procedural guidelines

Begin with the first move with substantive content and then code everything. All coding of the nature of the moves is from the perspective of the speaker as perceived by the researcher.

### identifying moves:

- within the talk of any individual utterance, a move ends when a new kind of move begins
- a change of speaker leads to a change of move
- within an utterance, a structuring move ends when it becomes a soliciting move
- a soliciting move ends with a change of speaker or with the change of perceived intended function of what a given speaker is saying
- a reacting move always begins at the beginning of an utterance. It is in operation when the speaker evaluates or discusses a previous move; rephrases or refers to a previous move; expands a previous move. It ends when any of the following occurs: the utterance comes to an end; a soliciting move begins; the speaker indicates the end of the reaction by some verbal convention; a discernible shift takes place in the utterance to an area not mentioned before and/or not under immediate discussion.

### *REACTING MOVES ARE KEPT AS SHORT AS POSSIBLE*

- distinguishing between soliciting and structuring moves - in order to remind the listener of the part of the lesson to which s/he wishes to refer, the speaker posing the question will often describe a part of the lesson as a preface to the solicitation or as the solicitation itself. When such a phrase, statement etc., contains an assertion that goes beyond mere description of what was observed, it is coded as a structuring move. When in doubt, descriptions and/or evaluations of part of a lesson about which a question is being asked should be included as part of the **soliciting** move rather than being coded as a separate **structuring** move.

### other operational procedures and reminders

- soliciting moves - a distinction is made between solicitations which take the interrogative grammatical form - (SOL/Q) and those which take other forms - (SOL).
- responding move is coded when it is a response directly elicited by a soliciting move (SOL or SOL/REA). When the speaker assumes what the question is and takes up a subject that is simply mentioned by the other speaker, it is not coded as a responding move. A reaction to a solicitation is when the reaction is about the solicitation rather than a response to it.

*Why did you move those two to the front?  
I would have thought that was obvious*

# **SPECIFICITY**

Specificity is coded to denote:

- \* the specificity of any coded pedagogical actions, outcomes-intended and otherwise, and teacher knowledge and understanding
- \* the highest level of specificity occurring in any move in which anything specific to the lesson observed is mentioned, irrespective of the mention of pedagogical actions outcomes, and teacher knowledge and understanding

There are four categories:

- (a) particular action, event, section, phase or aspect of the observed lesson, including products of the lesson and thinking about the lesson
- (b) on another specified occasion or other specified occasions - including those in the future - focus on particular action, event, section, phase or aspect of the lesson or lessons. Could include a whole term - "I spent the first term in conflict with them" - specificity b
- (c) a move formulated in terms of a generalisation which is directly related to an action, event, section, phase or aspect of the particular observed lesson, and of which mention has been made within the solicitation or in a prior move
- (d) a generalisation that is not directly related to an action, event etc., as above.

# SPECIFICITY

## procedural guidelines

### 1. Soliciting and soliciting/reacting moves

the specificity of SOL and REA/SOL moves is determined by the **substance** of the solicitation. Thus, if the SOL or REA/SOL is tied to an explicitly expressed observation of something that has taken place in the particular observed lesson - within the solicitation or in a prior move - then it is seen as **rooted** in the particular observed lesson.

- The response to a SOL or REA/SOL which has been coded c is also seen as rooted if it maintains that level of specificity, and it is therefore coded c.

### 2. Hypothetical considerations - 4 levels of specificity - a, b c and d, applied when coding specificity of an action or intended outcome

\* when the hypothetical consideration refers to the particular observed lesson, code level of specificity a

*If they hadn't taken to it so quickly, what would you have done?*

pedagogical action, specificity a

\* when the hypothetical consideration refers to another lesson(s), code b specificity

*You were talking about the lesson last week - what would you have done if they hadn't worked so successfully in the groups?*

pedagogical action, specificity b

*I would have hit them*

pedagogical action, specificity b

\* when the hypothetical consideration is of a generalised nature, but is rooted in the particular observed lesson, code c

*Would you approach the work in the same way with a different class?*

pedagogical action specificity c

\* when the hypothetical consideration is of a generalised nature and does not refer to any specific lesson or lessons, code specificity d

*What would you do if a class simply refused to work?*

*I'd hit them*



# NATURE OF REACTION

## procedural guidelines and notes

1. defining characteristic of a reacting/soliciting move is that it is a probe and is, therefore, coded e. As the categories are not mutually exclusive, a reacting/soliciting move may be coded in terms of other categories in addition to e
2. reacting moves should be kept as short as possible. Often what appears to be a long reacting move will be a reacting move followed by structuring. This is especially the case with regard to qualification. The simple qualification expresses reservations ( see above), while an elaborated qualification contains substance and asserts that something is or is not - it introduces new considerations. Thus, it is a structuring move.

*To a certain extent that's true, but classrooms are very unpredictable, and you can't always anticipate how pupils are going to react to something.*

REA - c (to a ...true); then STR (but ...something)

## NATURE OF SOLICITATION

seeking causal or purposive explanations (why) a  
**when you actually started looking at them, the documents, did you decide to read them out yourself because you didn't want to allow any room for disruption, with them reading it out?**

seeking procedural explanations (how) b  
**How did you manage to get that group at the back to take the work seriously?**

residual category (what) c  
**So when you first started out teaching, did you ever follow an approach?**

Note

If neither a nor b, then code c

# OPENNESS

(applies only to SOL and REA/SOL moves)

(a) **open** - respondent free to construct a response

*I noticed that you let the pupils decide which groups to work in  
and  
What were your particular reasons for getting them into groups?*

(b) **partially open** - either a solicitation to which the respondent is left to construct a response, but the solicitation only makes sense on the basis of an assumption made by the solicitor about the respondent's concerns or reasoning:

*When you asked that question why did you think it would motivate the class?  
or*

a solicitation in which the respondent is offered a suggestion to assent to or dissent from and is also offered an open alternative:

*Did you let them pack up early because they'd finished or what?*

(c) **closed** - a solicitation to which either the response could be simply 'yes' or 'no':

*Did you move him because he was misbehaving?  
or*

a solicitation which invites the respondent to choose from among suggestions given by the solicitor

*Did you ask the girls at the back to lead the discussion because they're bright or because they were messing about?*

~~~~~

## Note

Any solicitation expressed as a statement is deemed open since it does not guide or constrain the respondent.

Assumptions made by the solicitor that the respondent did have reasons for doing particular things are not treated as affecting the openness of the solicitation. The openness of the solicitation is affected when assumptions are made about the nature of the reason.

# PEDAGOGICAL ACTIONS

a single category -(a)

**ALL** pedagogical actions are coded

- \* pedagogical decisions are counted as actions  
*I decided to let the group work continue to the end of the lesson because it was going well*
- \* within any single move, pedagogical action(s) coded once only irrespective of the number of pedagogical action(s) mentioned. When there is more than one pedagogical action linked to different other things than those actions should be coded separately with their respective levels of specificity.
- \* solicitations about unspecified actions are coded as pedagogical actions:  
*What do you think you as a teacher did to motivate your pupils?* - coded as pedagogical action

Note

Links can be shown with pedagogical action in prior move

Necessary to put in pedagogical actions move that are in a single move if level of specificity is different - and there is a **CLEAR SHIFT IN SPECIFICITY**.

- \* Involving the pupils is seen as an action rather than a goal

# OUTCOMES - INTENDED AND OTHERWISE

(kinds of outcomes and status of the degree to which they're intended)

- (a) **short-term progress**  
expression of desire for change - actual or considered - in the pupils in terms of their attitude, learning acquired, skills mastered, artefacts produced, coverage of work. Such changes - actual or considered- are deemed to be short-term if related to the particular observed lesson or the particular topic, scheme of work or skill being taught within the particular observed lesson.
- (b) **long-term effect(s) on pupils**  
as (a) above, but relating to a time span that goes beyond the particular topic, scheme of work or skill being taught in the particular observed lesson.
- (c) **desirable state of pupils or of pupil activity**
- (d) **desirable kind of lesson/atmosphere/teacher-pupil relationship/pupil-pupil relationship**
- (e) **other or unspecified outcomes**  
In relation to the five categories above (a) - (e) also code nature of intentionality, 1 - 3 below, and/or outcome
  - 1. expectations
  - 2. goals (intended outcome)
  - 3. hopes or aspirationsthese are not mutually exclusive - one can, for example, both hope and expect

# OUTCOMES - INTENDED AND OTHERWISE

## Guidelines for coding

1. All outcomes - (a) - (e) - are also coded for **nature of intentionality**.
2. When coding nature of intentionality, there must be evidence for 1, 2 or 3. If there is no evidence, then code 4, the residual category - outcome(s) without identified intention. A simple rule is that 1, 2 and 3 relate to intentions, not to anything that actually happens, whereas 4 tells us whether it happens. Generally one knows something to be an **actual** outcome only if there is evidence that it is judged to be desirable and/or undesirable (as implied by the definition of categories a-d) or if it is a realisation of a coded expectation, goal or hope, or if there is clear evidence and what happens/happened is seen as a consequence of teacher activity or decision making.
3. Motivation is coded (a) - short term progress
4. Category (e) - other or unspecified outcomes - is a residual category and caters mainly for unwanted outcomes.

*They partly couldn't understand it, but even with me reading, they weren't prepared to work.*

5. Evaluation - if there is explicit evidence of evaluation made of either the goal, expectation, aspiration or outcome, code evaluation. Evaluation is often expressed as pleasure/displeasure:

*I was pleased with the way they co-operated in the groups*

(claimed outcome, positive evaluation - (c 4) (b1))

*I wanted the pupils to ask creative questions, and that was an appropriate thing to do*

*I was pleased with the way the pupils asked creative questions*

*I wanted the pupils to ask creative questions and they did*

*I wanted the pupils to ask creative questions and I was really pleased with the way they did*

*I wanted the pupils to get to the stage where they could ask creative questions. We didn't actually get there today, but I was really pleased with how hard they worked.*

*I wanted them to ask creative questions, which they did, but it didn't get us very far.*

When a hope, expectation or intention is linked to an outcome in the sense that the hope etc., is realised or achieved, both are coded within a pair of brackets to show the connection.

6. A changed intention is not a negative evaluation. An unchanged intention explicitly not realised is taken to be a negative evaluation:

*I hoped that we would get through quadratic equations, but we didn't*

(short term progress, hope, negative evaluation - (a3) (b2))

7. Solicitations about unspecified outcomes are coded as outcomes -

*What did you hope would happen?*

# FACTORS OF WHICH ACCOUNT IS TAKEN

(factors coded **only** if taken account of)

Factors are always related to action(s) and/or outcomes - intended or otherwise - coded. Links are indicated by drawing a line connecting the coded factor with the coded action or outcome.

## (a) pupils

1. individual pupil(s)
2. identified sub-group
3. class
4. classes
5. year/age group
6. pupils in general
7. consideration of differences among pupils - 'they're all individuals'
8. pupil state (tired, bored, noisy, finished work, way in which they're responding etc.)
9. pupils' knowledge, understandings, pre-conceptions, attitudes

## (b) time

1. amount of time for, or within, lesson
2. time of day, week, term, year

## (c) resources

## (d) content

## (e) phase

1. within lesson
2. observed lesson within a series of lessons with the class

(f) **social acceptability** - perceptions, attitudes, opinions of others such as colleagues, senior managers, governors, parents, local community.

(g) **teacher state** - including perceived skills, ability, 'type' of teacher

(h) **curricular and examination considerations**

(i) **classroom circumstances created by the teacher** (e.g. group work)

(j) **awareness of being a teacher in the classroom**

• interaction of two or more categories indicated thus:

 for example a  c

## Guidelines:

- it is a sign system, therefore factors are not mutual exclusive
- there must be positive evidence that it is being taken account of

# MENTAL ACTIVITIES IN RELATION TO TEACHING

(Within this dimension one is seeking differentiation in terms of operation, not in terms of content; it is not what the teacher decided, but more in what kinds of processes the teacher was engaged when making up her mind.)

(a) **planning**

1. planning or re-planning engaged in before the lesson
2. planning or re-planning engaged in during the lesson
3. future planning
4. residual category - disconnected planning

(b) **evaluation of teaching**

1. positive
2. negative

(c) **alternative** - instead of another - when there is consideration of an action or intended outcome as an alternative to an action or intended outcome that has been explicitly mentioned within the move or a prior move.

1. action(s)
2. intended outcome(s)

*Example: Instead of dividing them up into groups, could you have achieved the same results with whole class discussion?* pedagogical action and alternative c 1

(d) **hypothetical considerations** - the option(s) available for the teacher in different circumstances.

1. action(s)
2. outcome(s)

*Example: If the group at the back of the class hadn't been so noisy, what would you have done?* hypothetical consideration - d 1 ;  
factors taken into account - a 2

(e) **Validity of expectations or predictions** - when there is coding of expectations and there is an assertion by the teacher or inter about the expectation having proved to be valid or invalid.

1. positive
2. negative
3. qualified

# MENTAL ACTIVITIES IN RELATION TO TEACHING

## procedural guidelines

1. A zero coding in this dimension means that any actions and/or outcomes coded are being reported as actual practice, whatever the level of specificity. (This does not apply to evaluation)
  2. **Planning - in moves other than soliciting and reacting/soliciting moves**, for anything to be coded as planning there must, within the move, be evidence of both of the following:
    - (i) explicit mention of some kind of purposeful activity such as planning, deciding, intending, thinking about what to do as well as
    - (ii) at least two connected components of the reported thinking (it could be two actions; action & goal; action and reason for action;)Even when the word plan (or planning) is mentioned in such moves, unless there is also some substance with at least two elements, it is not coded as planning.

*'I was pleased that they had got excited about their stories because that's what I had planned'* is not coded as planning.

When coding planning, one consideration is that it is mentioned by one of the two speakers as some kind of mental activity (in this way, planning is seen as more complex than simply deciding- which would be coded as a pedagogical action)
- In **soliciting and reacting/soliciting moves**, planning is coded when the word plan or planning (or synonyms) is used.
- To sum up: in moves other than solicitations, it is the researcher's concept of planning, not the speaker's talking of planning, that is coded as planning.
- 'Did you plan for that to happen?'* - closed question asking about the mental activity - code planning
- 'Yes, I had planned to do that'* - intended outcome achieved - no coding of planning
3. **Planning - coded 1** unless there is an indication that planning during the lesson etc is being discussed or reported. Since planning is preparation for teaching, it is coded linked to a goal and/or action. (The residual planning category - 4 - indicates that planning is discussed but in a de-contextualised way, and is, therefore, not coded as linked to a goal and/or action.)
  4. **Evaluation - applies to all soliciting and reacting/soliciting moves.** In these moves code for positive or negative; if neutral, do not code. (So, in any SOL or REA/SOL move, it is inferred that the question was neither positive nor negative when there is no coding for evaluation). In other moves it applies only when there is explicit evidence of evaluation ( see notes on outcomes - intended and otherwise). In **all** moves, evaluation is only coded when it is direct or indirect evaluation of teaching. Such statements as *'They're a dumb lot'* and *'This is a wonderful school'* would not be coded for evaluation since in neither case is teaching being reported or discussed. Show links with coded action or outcome by drawing in connecting lines across the dimensions.
  5. **Alternative - always linked to a goal or action - show connections with lines.**
  6. **Hypothetical considerations - any hypothetical is dependent on different factors and/or intended outcomes, therefore any hypothetical coding will be linked to a factor mentioned and/or an intended outcome.**

Hypothetical considerations will always include alternatives, but the hypothetical alternative is not coded as an alternative since it is not presented as an alternative to an action taken in, or an outcome of, any specified lesson or lessons. 'If clauses' can be misleading - we are concerned with hypothetical considerations, and if clauses do not necessarily fall into this category.

\* for levels of specificity with regard to hypothetical considerations, please refer to notes on specificity.

## USE MADE OF PAST EXPERIENCE

**(a) learning from experience**

- x. it worked before and so ...
- y. it didn't work before and so...

**(b) aspect of particular observed lesson to illuminate a past problem**

**(c) drawing on past experience to extend the discussion about the particular case**

All categories in relation to:

1. pupils
2. content
3. context
4. pedagogy
5. teacher state
6. outcomes

(1-6 above are not mutually exclusive)

### Procedural guidelines

Do not confuse with use made of past experience in the actual teaching when for example alternative actions or goals are actively considered. When one is comparing or contrasting the conditions - the circumstances of today with those of a previous occasion(s) and comparing appropriateness of one or more actions in relation to those conditions, then use made of past experience comes into play.

*It's always important to start off this topic with practical experience. When I taught it first, I used to kick off with definitions written up on the board, but that wasn't half as effective.*

a y 4 (ii)

*Today I didn't give them any clues or pointers. With another class last year I started them off with sort of cryptic clues and it worked very well, but they were very different.*

*Another way of getting them to understand it is to do role play. That can work really well but you have to feel confident and have the right kind of class, otherwise it can be chaotic. I once tried it with this group and it was a disaster, but with my other year 8 group I often use it.*

(c1,4,5,) (ii) ay

# HOW THE TEACHER KNOWS OR UNDERSTANDS

A single category - a

~~~~~

## procedural guidelines

Care needs to be taken in distinguishing between this dimension and 'mental activities in relation to teaching'. In a sense, this dimension is a sub-set of the other, but with the emphasis on the teacher's interpretation of those things related to classroom teaching and learning rather than on planning or action.

The topic mentioned is noted with a view to possible categorisation later; at this stage there are no tentative categories.

**Specificity** is coded:

*How did you know they were getting bored?* - specificity a

*I know when pupils are getting bored because ...* - specificity d

*You said that you got them into groups because they were getting bored. How can you tell when pupils are getting bored?* -solicitation rooted in the particular observed lesson -specificity c

## Appendix 6: Intern/teacher conversation

- I: Right you started the lesson very quickly with a burst of question and answer, was there any specific purpose for doing it in that way? 1 SOL/Q
- T: I was wanting to remind them of what we'd done before, get them interested in what we were meant to be doing during the lesson which was document work, and it's a way of doing a recap and preparing them for the next stage so that questions were designed to be a combination of revision as well as preparation and it was a way of getting those who weren't really concentrating or were thinking about something else like what they've done at lunchtime to start thinking about History. It's also a way of me imposing my authority and discipline on them as a, as they are not a very easy group, saying 'I'm here, I'm in charge you will answer my questions and you will answer them in a way that I want you to.' So it's a combination of all this. 2 RES
- I: So you've thought about that before hand. You were going to go in there and be very snappy and very quick off the mark after you took the register, you were straight into the lesson.? 3 REA/SOL

T: Yeah, yes, I didn't want to spend a long time doing administration and things, I wanted to get on with looking at the sheets, partly because I had a lot of information to get through and I wanted them to get into it as soon as possible. So I didn't want to spend time mucking around with who'd forgotten their book and all this sort of business.

4 RES

I: Right, when you actually started looking at them, the documents, you decided to read them out yourself. Is that again, you didn't want to allow any room for disruption and them reading it out?

5 SOL/Q

T: Well two things really, they would've found some of the words difficult and some of them would have read them in a way which wouldn't have got the information across very well. So what I wanted to do was, as I read through them, I wanted make comments and expand a bit on points so that they would understand them clearly enough, so that in the end they could answer the questions. I also felt that having started in the way I did, I could control them while I read at the same time - one of the difficulties of reading yourself through this information, is that it gives all the other kids a chance to not

6 RES

concentrate. So I think almost as I started I looked at somebody and found they weren't concentrating on a sheet of paper and I told them to concentrate on it, I can't quite remember who that was now, but I thought, I think it was Chris who was looking out the window, so I brought his attention to it which hopefully will have got all the others, decide to get the others to concentrate and then I moved on going through the documents.

7 STR

I: Yeah, when looking at the documents you tended to get a general picture from each document, quite a graphic description of what navvies was like, but you didn't really go into the individual things, individual bullets, did you think that was unnecessary?

8 SOL/Q

T: There was going to be too much if I went into that much detail, what I was trying to get across to them, what mainly was navies were like, getting an impression from the documents, it wasn't more of an impression in the first instance. We were then going to as we worked through the documents come on to this problem of fliers, it was designed really to get them once they got the impression to start focussing their minds on it so I was trying to give them impression first of all so they could be interested and then

9 RES

they could move on to them actually looking at detail.

I: Right. You looked at a couple of documents then you got down to write some points down in rough then you looked back at documents .What was that designed for - to again deal with the disruption problem?

10 SOL/Q

T: Yeah if, if I said at the beginning right we've got four or five documents here I want you to get into pairs, and here are the questions, and go away and sort them through, I'd have then been in the situation that five or six of them wouldn't have concentrated at all, for a number of reasons, they didn't, they wouldn't have understood what it was, and they weren't prepared to concentrate on it, or even try and understand it, weren't prepared to work even though there were a variety of reasons, so to a certain extent it was very much guided by me to begin with and then it was aimed at having guided them and explained what they were about, I then wanted them to look at them again and work out further information that I had not mentioned. I'd explained what it all meant, but then I was hoping that, to extract the information as a recap, because they are not

11 RES

very bright and they will also disrupt the lesson.

I: So you think it's important to have like the constant interruption of the teacher throughout the lesson or the teacher talk at the start and then let them get on with their work for the remainder of the lesson ?

12 SOL

T: In a situation like that on that occasion, that's the way I, I wanted it to be. It's the last lesson on a Tuesday they're not particularly interested in looking through documents on navvies, but I wanted to deal with those documents with them, and because of that and because it fitted into that point of the course, that was the way that I did documents with them. On another occasion, in another circumstance I would've given them the work to do in groups to report back that that's perhaps first lesson on a Friday or, or Tuesday.

13 RES

I: It was a very, very tight lesson .That minimise the room for ... (interrupted )

14 STR

T: That's right, it minimises the room for them to misbehave but at the same time it keeps them concentrating on it so each time they work on their own, there is a short pocket of

15 REA

a few minutes. / I only wanted a certain amount from the documents so they could all achieve that or most of them could achieve it and then we could move onto the next one.

16 STR

I: Your mannerisms seem to be quite relaxed, are you conscious of this?

17 SOL / Q

T: Yes and no, in the first session with, with that group it's always slightly tense to begin with because you're not quite sure of the mood that some of them are in, and some of them are very confrontational on occasions and when you start something like that you're not sure whether they're going to be responding to your questions, or whether they're going to be just sitting there expecting everybody else to do the work, and if you don't get any response you're going to have to do something else in terms of teaching them. Having started off, I found that Jamie and Andrew and one or two others were prepared to cooperate for whatever reason their mood was in that day, then I was able to continue in a way that was more relaxed and anyway the material itself, once we got into it, which was one I talked about before getting into the stuff and talking through it was quite interesting, navvies are quite an interesting bunch of people. So they had

18 RES

characteristics about them that the kids would be vaguely interested in and they were easily able to answer questions about them when you asked them questions about it. It varies from lesson to lesson, on that occasion my rapport with them was reasonable but it doesn't mean to say it was not conscious.

I: Yeah, you've got quite a few difficult kids in that group. ~~How~~, did you actually set about creating a rapport with, with those individuals at the beginning?

19 REA

20 SOL/φ

T: No. I spent the first term in conflict with them quite a lot of the time and then in open conflict in terms of being punished they were being punished at the end of every lesson, about four or five of them to one degree or another and it took them to the end of the first term to get the basics whereby I could rely on them acting in a way in the lesson in which I expect, I will expect, so that up until then, it was a conflict situation, with the only reason that it isn't a conflict now is that they've come to accept my standard and I don't need to impose that by punishing them. That doesn't mean to say that they won't occasionally try it on, but they will, but so long as I maintain an immediate reaction when they transgress my standards, they won't do it very often.

21 RES

I: That was what you were doing when you were talking to Jamie about ... pencil just ?

T: That's right, yeah, and he will always if he doesn't have a pencil, draw in pen and I will always ask him to do it again, it's happened three or four times.

I: They seem to be quite uncooperative about that.

T: Yes.

I: You only did, you dealt with it very quietly and didn't make a big thing out of it.

T: Yeah, yes there's no point in confronting someone like that, openly in class because they then have to stand up to you because of their peers, and you know all that stuff so it was simple insistence, if he'd gone further I would have taken him out of the class and talked to him outside.

I: Right.

T: You know I think you solve the problem by getting hold of a pencil for him and then insisting that he does it in the way that you

ask him to. He just couldn't understand why the hell he couldn't draw in pen.

I: Right, when you were talking with Jamie, you actually said to him, when you're dealing with, about the pencil and he was like being quite uncooperative about it, you said 'I'm not going to discuss it with you, ' that kind of thing. Do you actually think about those words or does it just, something that comes naturally, is that significant in a way?

T: Yes, I don't know, that's interesting. It's a case of in that circumstance, in that situation, with that particular person, he in the past has drawn in pen and in the past I have insisted that he redoes it and does it in pencil, not on every occasion because he doesn't have a pen and pencil and therefore he inevitably draws in pen, but when I find he's doing it I require him to redo it so he moans that I require him to do things in pencil and in fact most people in the school do, but what he doesn't understand is why, he doesn't understand that you need to draw in pencil if you make a mistake. He doesn't feel that's important because he doesn't feel he'll make a mistake, or he doesn't feel it matters that the presentation's not very good. So you're in a situation there where he, he feels quite

strongly himself that it doesn't matter, so if he, give him a platform upon which he can start arguing with you about it, you then get into a situation where you might have to punish him for arguing with you and then being rude to you and ill mannered because he feels got at. So what I tried to do there was nip any, any of that element coming into it in the bud by saying 'I'm not going to discuss it with you' which meant we've done this before you know why, think about this and if you don't do it, we will move into the next stage which is punishment, redo that work etc. So 'I'm not going to discuss it with you anymore,' is all of those things. That's what it means.

I: But it's still done in a very, you know quiet kind of way, it wasn't like, get this, I expect you to have pencil or pen. Wasn't that kind of ..? It's all done so quietly

T: Yes that's right. I mean in actual fact, there's hardly any need in the classroom situation to lose your temper in that way, all that would actually happen is that the pupil and you have a bit of a scene which the other people then perhaps exploit, you lose your rag a bit which means you're not as calm with the other pupils and the lesson doesn't go as smoothly

as it ought to. You've got to control your emotions in that way. It's rarely useful shouting, mind you shouting it is a way of sorting things out on an occasion as you've noticed.

I: Would you ever shout in your classroom?

T: I have done I would again but most of the time it isn't productive and it's very counter productive, usually all the kids see is a red faced teacher kind of spluttering and getting annoyed, you know that's fine.

I: In the second part of the lesson it was like the kids were getting on with their work, how do you manage to keep control in more that kind of open lesson, when they're getting on with the work themselves?

T: Right, that lesson was broken into two areas whereby the first part was very much teacher directed, and they had small pockets of five minutes which they worked on a lot of points and they they came back reporting to me and I try to keep the momentum going with it, to get through the documents, to get across the ideas of navviesto them and given them the impression of what the navvies were like. I didn't actually want to do lots of work on

navvies and neither do I want to do lots of work in terms of writing on them, but I wanted to have part of the lesson on that, the second part of the lesson on that, the second part of the lesson was, was something that they had done before, which in actual fact was a bit of lack of organisation on my part whereby I didn't realise how long it would take for them to do the chart on the development of railways in Britain, and so I found myself going from one lesson to another on that, so the second part of that lesson was quite simply, let's get this finished off, it was almost like I had made a pact with them in the previous lesson that they would have time in this lesson to finish it off.

I: Right.

T: Now what I gave them was about 35 minutes to finish it off, it's not half, about half an hour or so, is that alright. Something of that nature, which meant they didn't have quite enough time to do it as well as they would like to have done, but they had enough time to complete the main part of it which was the writing and not the drawing, although some of them could finished the drawing off, so in effect what happened was they were then

given the opportunity to finish off something that has been left unfinished for a while so there was an element in most of them in wanting to do it, cause they had it rough or they had it on a sheet of paper or whatever and then I just simply, having set that up, given them a shortish time to do it in, kept going round and seeing what stage they were all at

I: So it was a matter of like very close monitoring?

T: The close monitoring of it as well as giving them the situation in which, no there wasn't any pressure in that, in terms of me imposing upon them, you very often get groups like that, they work better without you teacher directing them as to what to do - if you gave them a well structured set up and then said get on with it, they could quite often work better that way, unfortunately.

I: Does that minimise, the chance of them disrupting you know?

T: Yes that's right.

I: Answer these questions or something.

T: Yes exactly, a lot of disruption comes from teacher pupils interaction, you can't get away from the fact that you have to have that quite a lot of the time, but you have an introduction and then the rest of the lesson for the 40 or 50 minutes is a well structured project type of worksheet sort of exercise, which is interesting enough. Quite a few kids will get on with that without needing discipline hovering over them. It's only if you give them a badly sorted out worksheet, go away and do that, for an hour, they sit there and are fidgety unless they have a bee in their bonnet about something else, and then you've got to deal with that first, separate, but that's how that works.

	move	reaction	openness	nature of solicitation	highest level of specificity	pedagogical actions	outcomes	mental activities	factors taken into account	teacher knowledge and understanding	use made of past experience	notes
1	S SOL/Q		a	a	a	a	S	S		S		
2	T RES				a	a	a <sub>2</sub> d <sub>2</sub> c <sub>2</sub>	a	a <sub>8</sub> , a <sub>3</sub>			
3	S REA/SOL	e1	c	c	a	a	a	a1				
4	T RES				a	a	a <sub>2</sub>	a	d			
5	S SOL/Q		c	a	a	a	a <sub>2</sub> c <sub>2</sub>	a				
6	T RES				a	a	a <sub>2</sub> c <sub>2</sub>	a	a <sub>9</sub> , a <sub>3</sub> , g <sub>1</sub>			
7	T STR				a	a	c <sub>3</sub>	a	a <sub>1</sub> , a <sub>8</sub>			
8	S SOL/Q		c	a	a	a		c1				
9	T RES				a	a	a <sub>2</sub> c <sub>2</sub>	a	d, a, e1			
10	S SOL/Q		c	a	a	a	a <sub>2</sub> c <sub>2</sub>	a				
11	T RES				a	a	a <sub>2</sub> e <sub>4</sub>	a	a <sub>2</sub>			
							a <sub>3</sub>		a <sub>9</sub>			
12	S SOL		c	c	c	a						
13	T RES				a	a		d <sub>1</sub>	b <sub>2</sub> a <sub>8</sub> e <sub>2</sub>			
14	S STR				a	a						
15	T REA	a <sub>1</sub> , d			a	a	a <sub>2</sub> a <sub>1</sub>	a				