DOCUMENT RESUME

ED 303 301 RC 016 939

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TITLE Student-Teachers Learning from Experienced Teachers.
INSTITUTION Scottish Council for Research in Education.
SPONS AGENCY Scottish Education Dept., Edinburgh.
PUB DATE Jun 88
NOTE 65p.
PUB TYPE Reports - Research/Technical (143) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Classroom Observation Techniques; Cooperating Teachers; *Educational Research; Experimental Programs; Foreign Countries; Higher Education; Interviews; *Lesson Observation Criteria; *Student Teachers; Teacher Education; *Teacher Education Programs; Teaching Methods
IDENTIFIERS *Scotland

ABSTRACT

This document provides part of a final report to the Scottish Education Department on a study of student teachers' observations of and interviews with cooperating teachers. The purpose of the research was to help student teachers acquire an understanding of and control over teaching methods. The findings are from experiments with three samples of student teachers undergoing their initial training in Scotland. The first sample consisted of eight students at the start of their first college term. They were based at the same school to observe teachers. The second sample comprised four students, each having completed one college term, based at different schools for their observations. The third sample comprised four student teachers assigned to the same school in departments according to their areas of specialty. All the students were instructed on how to interview cooperating teachers after their observation sessions. The substance and success of these interviews were then assessed by researchers. The document offers reactions to the experiment by students and teachers. Students were asked whether the interviews helped them gain a fuller understanding of the observed teaching. Cooperating teachers were asked about the positive and negative aspects of having student teachers discuss classroom methods with them. The students' interviews were compared with the researchers' recommended approach and assessed for the success in eliciting the desired information from teachers. No obvious differences among the three samples were apparent. The students had generally favorable opinions of the interviews. All the cooperating teachers also responded favorably. There is some discussion about modifying and institutionalizing the procedure. (TES)

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STUDENT-TEACHERS LEARNING FROM EXPERIENCED TEACHERS

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From 1984 to 1988 the Scottish Education Department funded a major research project which set out to understand how teachers construe and evaluate their own teaching. The development of a research approach, which had considerable success in gaining access to the knowledge which guides the ordinary everyday actions and successes of the classroom teacher, was followed by its application in a related context. It formed the basis of the generation of a set of procedures designed to help student-teachers learn from experienced teachers. This report documents the formulation, testing and early implementation of those procedures in pre-service teacher education.

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Report arising from the *Qualities of Teachers: building on experience* project (reference H/214/1) funded by the Scottish Education Department (SED) between June 1984 and May 1988, and based initially at Stirling University Department of Education and latterly at SCRE.

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The Scottish Council for Research in Education, 15 St John Street, Edinburgh EH8 8JR

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PREFACE

Although this document provides part of a final report to the Scottish Education Department from a research project, it is nevertheless interim in nature. It offers a relatively complete account of a piece of research, but we regard it as interim because we are still engaged in a study of the extent to which the procedures we have been developing and testing can be implemented, and institutionalised, in the initial training of teachers. We are making this report available now, however, for others who may be interested in the problems of helping student-teachers to learn from experienced teachers, and also for our own benefit since we would welcome the opportunity to enter into dialogue with others about this most important element of the preparation of teachers.

The research is a collaborative effort between an institute for educational research and a university department with responsibility for the pre-service education of teachers (the Scottish Council for Research in Education and the Department of Educational Studies at the University of Oxford). The aspects reported here were carried out during 1987 and 1988, and built on earlier work which two of us started at another institution (the University of Stirling) in 1984. That research was concerned with trying to gain access to, and to understand something of, the knowledge which underpins the craft of classroom teaching. Elsewhere, we have called it the 'professional craft knowledge' of teachers. We were greatly encouraged by what we, as researchers, were able to learn from teachers about what they value in, and how they conceptualise, their own teaching. The approach we used gave us access to teachers' ways of thinking about their classroom circumstances, and about the actions they take in those circumstances; this provided us with a range of insights, well beyond those which most traditional classroom research has uncovered, about teachers' implicit theories of teaching.

If researchers can gain access to the knowledge which guides the ordinary, everyday actions and success of the classroom teacher, then why not use the same methods to help the student-teacher learn from the experienced professional? What can seem ordinary, everyday, familiar, routine aspects of teaching to the teacher with several years in the classroom, may be a source of considerable anxiety to the beginning teacher. Many a student has had an opportunity on one day to watch a teacher with a class of interested, hard-working, well-behaved pupils, and on the following day has been given charge of the same group who turn out to be disruptive, bad-tempered, idle and showing signs of extreme boredom. It is usually very difficult to explain how the experienced teacher achieved success with the class, and it is rare for the initial training of teachers to provide students with the means of unravelling these mysteries. Trial and error, and re-invention of the wheel, by the beginning teacher as he or she is launched into a career in the classroom is the usual approach. This report maps out an initiative in which we have developed and tested a practical procedure which is designed to help student-teachers gain access to the knowledge experienced teachers use in their teaching.

The findings which are described here are primarily those from relatively controlled 'experiments' with three samples of student-teachers, undergoing their initial training in Scotland, together with their supervising teachers. These 'experiments' were designed to test out the usefulness and feasibility of the practical procedures we were developing. Sections 8 to 12 provide a detailed account of the findings which are then summarised in Section 13.

In parallel with these 'experiments', explorations were being undertaken on the implementation of the proposed procedures in a new scheme for initial teacher-training in Oxford (see Section 14). This approach has allowed us to collect evidence of two kinds:

(i) evidence from a 'naturalistic' setting with a full cohort of student-teachers and with the procedures as part of the general pre-service teacher education programme (Oxford)

(ii) evidence from small samples under 'controlled experimental' conditions where the procedures have been kept separate from the general programme (Scotland).

Section 15 is called 'Interim Conclusions'. We are looking forward to making use of our findings, using them to modify our approach and testing out revised procedures with the new post graduate student-teacher intake in Oxford in the academic year 1988-89. At the end of that year we shall be in a better position to say more about the implementation and institutionalisation of our procedures. We expect to write a book which draws on this report and on next year's work. Our intention is also to publish a video tape for student-teachers, with a brief 'handbook' for teacher educators.

We have to express sincere thanks to many people. First, we must acknowledge our indebtedness to the Scottish Education Department without whose grant there would have been no research. We hasten to add, however, that the views expressed here are those of the authors and are not necessarily shared by the Department. Colleagues on the staff of the Department of Educational studies at Oxford, Jordanhill College of Education and Moray House College of Education have given us generous co-operation for which we are most grateful. We must also pay tribute to the student-teachers from these institutions; their readiness to become involved in the research was a central factor in enabling us to carry out the work. Similarly, the support offered by the teachers and schools was crucial. Our feelings of obligation and appreciation are very great; they entend particularly to the staff of Trinity Academy in Edinburgh and Park Mains High School in Erskine; but also to Blantyre High School, Braidfield High School, Dalziel High School, Shawlands Academy and all those schools involved in the initial training of teachers at Oxford. We acknowledge too the splendid support we have had from Edna Kentley who undertook the secretarial work of the project, May Young who typed the report and Amanda Evans who put that report together in its final form. Finally, may we thank all the members of our advisory committee, chaired by David Adams of The Northern College of Education. They have been unfailingly cheerful, supportive and helpful throughout the research; their advice was invaluable.

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1. ADDING DISCUSSION TO OBSERVATION

It has long been acknowledged by teacher educators that student teachers have much to learn from observing the 'good practice' of experienced teachers; that is, from observing the kinds of ordinary, everyday things which teachers do routinely and more or less spontaneously in the classroom. Unfortunately, and this is confirmed by our earlier research (Brown and McIntyre, 1988), it is apparent that the more skilful the teaching, the easier everything looks, and the more difficult it is to understand how success is achieved. Indeed, it is our experience that the observer seldom understands all that is going on in a classroom, and may, in fact, misunderstand it if he or she is not thinking about the class and the teaching in the same way as the teacher.

A further finding from our research, however, suggested that one way to a achieve a fuller understanding of the teacher's actions is for the observer to discuss with the teacher his or her teaching as soon as possible after the lesson. This is more difficult than it sounds: the routine nature of everyday teaching, together with the way these routines have developed from the teachers' experiences of teaching, does not make it easy for them to articulate what they do in their teaching, and to give an account of how what they do contributes to what they are trying to achieve.

The aim of this study, therefore, was to use our experience from research on teaching to explore the possibilities of helping student teachers to create the conditions which would enhance what they get out of their observation of experienced teachers. This new aspect of the research was initiated in the Department of Educational Studies at the University of Oxford with an attempt to develop, on the basis of the procedures used in our earlier work, a simple procedure that student-teachers could use to gain access to the craft knowledge of individual experienced teachers.

The general procedure which was adopted was the basically simple one of observing a lesson and then asking the teacher questions about what had happened in that lesson. This procedure was initially explored by a member of the research team with colleagues in the school where she had recently been teaching. As with the earlier research procedures, emphasis was put on the strengths of the observed teaching, on the events of the particular observed lesson, and on the teacher's own perspective on these events. And, as with these earlier studies, teachers' discussions of their lessons revealed a richness in the pedagogical knowledge they had used which could not have been known from observation alone and which pleased and excited the teachers themselves.

The next task was to develop guidelines for student-teachers, and procedures for training them to follow these guidelines. This proved to be quite difficult. The final guidelines developed emphasised that the kind of conversation required for the post-lesson interviews was very distinctive and that, while there were many other kinds of conversation with experienced teachers that could be useful, the usefulness of this interview depended on restricting oneself to this particular kind of conversation. To encourage the student-teachers to ask questions about the specific lesson, the rule was formulated that all questions should be in the simple past tense; the student-teachers, however, were very inclined to seek generalised answers to the problems of teaching. They also seemed to find it difficult to accept that experienced teachers might think about teaching in ways which were quite different from their own and, therefore, to avoid closed questions like 'Had you planned to do that?' They could very easily put teachers on the defensive by asking questions like 'Why didn't you ...?'; an 'absolute ban' on questions of this form was introduced, and more generally the student-teachers were encouraged to recognise that they themselves had an important part to play in helping experienced teachers to articulate the knowledge underlying their teaching. Finally it was found that the student-teachers were very ready to accept teachers' initial answers to their questions as the whole truth; unfortunately, it was often only when teachers were pressed to elaborate on these initial answers that the insights underlying their teaching became apparent. Probing for elaboration was emphasised in the guidelines, therefore, as a necessary element of post-lesson conversations.

Together with the written guidelines which were developed, a video-tape was made in which student-teachers, who in these initial trials had become quite expert, demonstrated positive and negative models of post-lesson interviewing.

Reference

Brown, S and McIntyre, D (1988) 'The Professional Craft Knowledge of Teachers' Scottish Educational Review, special issue entitled, The Quality of Teaching edited by Gatherer, W.A.

2. TESTING THE ADEQUACY OF THE PROCEDURAL GUIDELINES

We now had to test the usefulness of these guidelines:

(1) Would student-teachers, given a brief introduction to this procedure, recognise its purpose as valuable, be persuaded of the need for the procedure as prescribed, and be able to use it in practice?

(2) In so far as the student-teachers made 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 provided useful information about what they had done in the observed lessons, and why they had done what they had done?

(3) Would teachers find the procedures acceptable, feasible and valuable?

These questions were investigated with three small samples of student-teachers and experienced teachers. Two of these samples were based in the west of Scotland; the students were undergoing the one year course at Jordanhill College of Education in preparation for secondary teaching. Neither the students nor the experienced teachers included in these samples had any previous association with such work, and no attempt was made to build in, or integrate, the research approach to the college courses. The college tutors had no active involvement in the work although we had substantial discussions with them about the nature of the research. In other words, the research exercise was an independent 'add-on' to the students' pre-service programme. In one of the samples, there were eight student-teachers in four subject areas together with their supervising teachers; these students were at a very early stage in their initial training year and undergoing their first induction period of school experience. The second sample of student-teachers were four in number, all science specialists, and in their second period of school practice towards the end of their first term.

The third sample of students, from the east of Scotland and undergoing initial training at Moray House College, were working with four of the teachers who had been intensively involved in the earlier stages of our research. The student-teachers in this sample, then, were working with teachers who were already used to giving researchers the same kinds of information which the students were seeking. However, like the west of Scotland student-teachers, and unlike those at Oxford, this sample did not have the backing of the approach being built in to their college courses.

3. PREPARING THE STUDENTS

From the experience of our own research on teaching, together with the implications of the pilot study at Oxford of students' interviews with teachers, a number of suggestions on interviewing techniques were identified as most likely to help the students gain access to the teachers' perspectives of their own teaching (see Appendix A). In addition, they were shown the video which reinforced the same suggestions. In the video, the recommendations for interviewing were pointed up through a commentary on the portrayal of two students interviewing a teacher about an observed lesson: one of the students exemplified the recommended techniques of interviewing, and the other exemplified a contrasting approach to be avoided.

It was suggested to the students that the focus of the interviews should be on making sense of the teaching actually observed and not with finding out about such things as the school's or regional policies, the teacher's background or beliefs about teaching, curriculum or lesson planning, or departmental organisation. This was not to suggest that these are unimportant concerns for students, but simply that the interviews were not intended as vehicles for their clarification. If the interview was to be used to find out about the teaching actually observed, it would be important that the questions should not be framed to invite generalised answers. For example, an appropriate framing would be in the past tense

> What did you do to encourage these pupils to work?

rather than in the present

> What do you do to encourage pupils to work?

The emphasis of the interviews was to be on what went well with the teaching, either in the teacher's eyes or the student's. Having identified these positive aspects of the teaching, the focus of the questions should then be on what actions the teachers took to achieve them, and what led them to choose these particular actions. When a teacher is asked 'why?' a particular action was taken, the purpose is not to seek out a defensive rationalisation (based perhaps on some educational theory), but rather to elicit an account of how they judged this to be such-and-such a situation, this to be such-and-such a group of pupils and that action to be appropriate. In other words, how does the teachers' practical experience lead them to make the immediate on-the-spot judgements which characterise their classroom teaching?

For example:

> I was interested in the way you dealt with John's problems.
> What was it exactly that you did? Why did you do it that way?

Given that the purpose of the interviews was to try to understand the teachers' perspective of the events of the lesson, students were also advised to ask their questions in a way which would encourage the teacher to offer expansive answers. This was much more likely to be achieved if the questions were open in their framing; that is, they should neither invite a 'yes/no' reply, nor suggest a possible answer. Instead, they should leave it to the respondent to identify the frame for his or her answer.

An example of an open question would be:

> What was it you did to make the changeover of activities go smoothly?

The same question closed might be:

> Did you have a strategy for making the changeover of activities go smoothly? (yes/no invitation)

or

> Was asking the pupils to help with the equipment intended to make the changeover of activities go smoothly? (yes/no invitation, and a suggested answer to the question).

It was further suggested to the students that they should be supportive of the teachers; they should at all times be ready to accept what a teacher was telling them; they should allow the teacher time to reply (and not be too anxious to fill up any pauses in the discussion); and they should be prepared to probe the teacher's answer where necessary. For example, the last of these might imply a question such as:

> You said you made your explanation as simple as you could. Would you tell me what it was you did to make it simple?

In summary then, the students were advised:

(i) to focus their questions to the teacher on the events of the lesson;

(ii) to avoid framing their questions in a generalised form;

(iii) to concentrate on what had gone well in the teaching and avoid adverse criticism of the teacher;

(iv) to aim to probe and find out what the teachers had done in achieving their success;

(v) to enquire about how the teachers made their various judgments;

(vi) to phrase their questions in open rather than closed ways;

(vii) to be supportive and willing to accept the teachers' responses;

(viii) to allow plenty of time for the teachers to respond to the questions.

4. THE ARRANGEMENTS FOR INTERVIEWING TEACHERS

It was decided to ask students to conduct two interviews, each with a teacher whose teaching they had observed. It was not necessary, however, for the student to observe and interview the same teacher on both occasions.

In relation to each interview, the student first observed a teacher in the act of teaching and during that observation identified aspects of the lesson to figure as topics for discussion in the interview. The interview took place as soon as possible after the lesson, but in any case on the same day. The interview, but not the lesson, was tape-recorded.

Preferably within a day of this, the student and a researcher met to listen to, and discuss, the earlier taped interview which the student had carried out with the teacher. The researcher was undertaking the role of tutor here, and the student was given the opportunity to talk about his or her reactions to the interview with the teacher. The concern was with such questions as the contribution of the interview to the student's understanding of the lesson, the extent to which the student considered any understanding gained as of likely use in his or her own teaching, and any problems encountered in relation to the interviews.

The first discussion was concluded by asking the student if he or she had any suggestions to make for improving the second interview. When it was clear that the student had no more to say on this topic, and in the light of what he or she had said, the researcher suggested possible improvements, which were based on the evidence of the first teacher interview and reflected the general recommendations of the project on interviewing techniques.

5. THE RESEARCH QUESTIONS

Our primary sources of data, therefore, were the recordings of

(i) the students' two interviews with teachers following observations of lessons and separated by a discussion with a researcher;

(ii) the discussions between the student and the researcher following each of the interviews with the teachers.

The analysis of these data was designed to explore the following research questions:

- To what extent did the student/teacher interviews help the student to gain a fuller understanding of the teaching observed?
- To what extent did the students recognise any value for their own teaching in speaking with the teachers about the teaching observed?
- To what extent did the students experience problems in arranging or conducting the interviews?
- To what extent did the students do what was asked of them? Did they ask questions in the recommended ways?
- To what extent do the recommended questions elicit the desired information?
- What were the teachers' reactions to the student/teacher interviews?

6. THE SCOTTISH EXPERIMENTS: PREPARATIONS

The two samples from the west of Scotland experiment comprised students for whom there was no integration of the experiment with their college course, and teachers who had no experience of providing information in this way. It involved working with two different groups of students: one group during their induction block of teaching, and the other during their second block of teaching practice. In both samples, however, students, tutors and teachers all came 'cold' to the experiment.

The sample east of Scotland experiment comprised students for whom there was no integration of the experiment with their college course. The teachers with whom the students worked, however, had been involved in our earlier work. Consequently, the teachers were used to giving the researchers the kinds of information which the students would be seeking from them through interview.

(i) West of Scotland students on induction block school practice

The first sample, comprising eight students, were all based at the same school for their 'school experience' at the start of their first term. These students spent three weeks in the school after one week's induction in the college. They were organised as four pairs from each of the departments of business studies, chemistry, mathematics and physics.

As a preliminary to the student/teacher interviews, the researchers met with the teachers and the students, as separate groups, to tell them about the purpose of the study, the proposals for conducting it, and what was being asked of them as participants.

The meeting with the teachers was held on one of the two in-service days at the start of the Session 1987/88. A brief paper (see Appendix B) was distributed in advance. The aims of this meeting were:

1. To provide a general picture of the kind of information it was intended the students should try to elicit from the teachers:

   > In the interviews, the student may well be inviting you to tell him or her about some aspect of the observed lesson which was satisfactory to you on that day.
   >
   > The student will be interested in knowing what you did to achieve the satisfactory aspect of your teaching, and why you saw your actions as appropriate; for example, what circumstances influenced the action you took?
   >
   > The student may also ask you to talk about some aspect of your teaching of the lesson which is of particular interest to the student - perhaps because of some anxiety about this skill in relation to his or her own teaching.

2. To make clear to teachers that it is the specifics, the ordinary things of teaching which are important and helpful for students. Also to let them know that we realised how difficult it can be to talk about what one does routinely and habitually, but to ask them not to underestimate what they have to offer.

3. To remind them that the interviews would be recorded, and that this can make the discussion seem more formal than other conversations with students.

4. To suggest to them that students are eager to learn and sometimes may seem critical or judgemental (despite advice on the need to avoid criticism), and to request them to be tolerant if this happens.

5. To request the teachers to allow the researchers to come back at the end of the students' teaching block to discuss the teachers' reactions to the experiment.

6. To give them copies of the material which would be handed out to the students before the School Experience Induction Block.

7. To make preliminary arrangements for the observed lessons and interviews.

8. To answer any queries which the teachers might have.

The meeting with the students was held prior to their school entry, and took the form of an oral presentation, distribution of the written material (Appendix A), a showing of the video and a general discussion. All of this took place in the presence of the college tutors.

(ii) West of Scotland students on second block school practice

The second sample comprised four students who were each based at a different school for their 'school experience' at the end of the first term. Two students were assigned to the physics departments of their respective schools; one to the chemistry department; and one to the biology department.

Again, as a preliminary to the student/teacher interviews, the researchers met with the students and their college tutors as a group, and with the teachers, but as four separate school-based groups, to explain the study in the same detail offered to the participants of the first sample. Copies of the papers, which summarised the material of the oral presentations, were again distributed at these meetings. In addition, the students and their tutors were shown the video on the techniques of interviewing most likely to elicit the desired information.

(iii) East of Scotland students on school practice

The third sample involved four students, all of whom were based at the same school. The students were each assigned to a department according to their different degree specialisms. These were: history, biology, mathematics and physical education. Students in the first three subject areas were on their first teaching practice at the end of the first term. The student of physical education, who was in the third year of her course and who had had two earlier blocks of school teaching practice, was in the second term at the time of the experiment.

The researchers met with the three first-year students as a group, and with the remaining student on her own, to explain the study in the same detail as offered to the participants of the other samples. Copies of the papers, which summarised the content of the oral presentations, were again distributed, and the students were shown the video on the techniques of interviewing most likely to elicit the desired information.

7. PRACTICAL PROBLEMS

(i) First student sample - induction block school practice

The level of anxiety of the student-teachers in this sample seemed rather higher than in the others. They had only recently arrived in college and were somewhat apprehensive about their first experiences of school practice. It was not altogether surprising, then, that they encountered a number of practical problems in trying to set up the experiment. Thus, on occasions, tape recorders were left at home, switched to the wrong recording speed, had the 'pause' button left on, had the microphone face-down making the recording inaudible, had run-down batteries, had the 'play' instead of the 'record' button depressed, or were faulty. While these everyday hazards created some local difficulties and anxieties, the approach was sufficiently robust to weather their effects.

Although the teachers had intimated their willingness to participate in the project at the introductory meeting, the actual arrangements for the interviews within the ordinary pressure of school life raised some problems. Thus, one department had to postpone beginning the project, because a of shortage of staff; another teacher was called from the room at the start of a lesson arranged for student observation, and barely got back in time to close the lesson; and another lesson arranged for student observation had to be rescheduled because of the teacher's absence at a funeral.

If everything had gone according to plan, there would have been sixteen recorded student/teacher interviews for the group of eight students in the induction block of school practice. Given the practical problems encountered, the actual number recorded was thirteen.

(ii) Second student sample - second block school practice

The second sample of students manifested none of the problems encountered by the first sample in using the recording equipment. This may have been a product of the earlier experience in that the researchers gave greater emphasis in the course of the preliminary arrangements to the possible problems of recording .

One major set-back did occur, however: the biology student withdrew for personal reasons after the first student/teacher interview Thus, instead of the anticipated eight student/teacher interviews from this sample, only seven were achieved.

(iii) Third student sample - East of Scotland school practice

The sole problem of this third sample was finding four students on teaching practice at the school whose subject areas coincided with the subject areas of teachers with whom we had worked on the earlier research. We finally achieved our total of four students by delaying the work in one subject area, physical education, from the end of the first term until early in the second term.

8. STUDENT-TEACHER REACTIONS TO THE EXPERIMENT

The researchers' interviews with the students were concerned to explore the students' reactions to the student/teacher interviews in the following terms:

- Did the interviews with the teacher help them to gain a fuller understanding of the observed teaching?

- Did they recognise any value for their own teaching in speaking with the teacher about the observed teaching?

- Did they experience problems in arranging or conducting the interviews?

(i) First student sample - induction block school practice

Most of the students acknowledged having found their interviews with the teachers helpful:

> Yes, definitely ... there was no way I would have known why [the teacher] was [choosing particular pupils to answer]. I thought it was random, but when I spoke to him he did have a system.

When asked specifically to identify any information gleaned from the interview which could not have been gleaned from observation alone, most could cite an example.

> It seemed to me the ... class he was teaching would have had the lesson explained to them better if he'd taken it step-by-step on the blackboard rather than presenting them with a prepared overhead. But when he explained it was in relation to the class he knew was very badly behaved if he turned his back on them, I can now see why he did that.

One student added, however, that though he had gained extra information through his interview, he did not at that point know to what extent the information might prove useful to him in his teaching. Another made the point that the briefing for the interviews had proved useful to him in that it had caused him to pursue an interview topic more fully than he would have done otherwise.

Of those students who accepted that discussion about an observed lesson was useful, there was none who clearly favoured the formal interview arrangement against an informal student/teacher discussion. Some advantages of the formal interview were identified, however, and it was suggested that:

- more in-depth answers were achieved because interruptions were less likely;

- the need to prepare interview questions in advance of the interview provided a framework for the interview which helped to keep the discussion from wandering off the topic;

- the need to prepare interview questions led to a more intent observation of the lesson by the student-teacher than was usually evoked by the observation exercise;

- the fact of having prepared interview questions allowed the discussion to be postponed until later in the day, if time was not available during or immediately after the lesson.

One disadvantage cited suggested that in certain kinds of lessons, it would have been more natural to have asked the question at the time when the event to which it referred occurred. For example, lessons where the pupils worked at their own pace from worksheets allowed plenty of time for consulting the teacher during the lesson. One student in this kind of situation reported that some of his questions had already been brought up for discussion by the teacher in the course of the lesson. Other students considered that the formal interview arrangement appeared to be in some sense threatening to the teachers, and that they had less to say than under a more casual arrangement. It was suggested by one student that teachers, at least initially, saw the taped interview as some kind of assessment of them.

A small number of students did not recognise any real value in discussing a lesson afterwards with the teacher.

> A lot of the teacher's replies were self-evident... you could have gleaned that information just watching the lesson itself. It [the interview] helped perhaps to confirm conclusions.

These students considered they knew from observation alone what was happening in the teaching, and why it was happening; they appeared in their actions, as well as their words, to regard any subsequent interview simply as a means of confirming their assumptions. As an illustration of this, it happened that two of these students separately interviewed the same teacher in relation to the teaching of the same lesson. Both queried with the teacher her decision to move a pupil to the back of the room. 'A' asked why the particular pupil had been chosen to move rather than one of her companions. This drew from the teacher a whole history about the pupil and the teacher's reasons for singling her out to move. 'B' (the student who considered that observation of a lesson was sufficient in itself to gain understanding of the teaching) simply asked 'Did you move Linda because she was talking?' Upon the teacher's concurrence, the topic was closed. When asked by the researcher whether any more could have been gleaned from the teacher about the event, 'B' was firm that there was nothing more to be said: she 'knew' from observation that the girl was moved because she was talking, the teacher had confirmed this, and that was that.

When asked after the first interview whether they would want to improve their interview technique in any way, only three students identified a limitation of their interviewing in terms of the recommendations of the study: two suggested that they would want to probe more into the teacher's replies; and one considered that she should phrase her questions in a way which did not suggest a possible answer. Of suggested improvements not in line with the recommendations, one student thought his accent was too strong; and another thought he was not sufficiently articulate:

> I'm horrified at how inarticulate I am ... I would like to be able to construct my questions a little more coherently.

The students reported a number of difficulties, or possible difficulties, in the preparation and conducting of their interviews. One student thought he would have found it difficult to identify topics for the interview with a less competent teacher to observe, and several others reported similar problems in lessons where not much was considered to have happened:

> It was an audio-typewriting class ... the only thing they ever do is come out and give [the teacher] things to mark. There wasn't really anything much to ask.

In one of these cases, SMP mathematics, the lessons were so structured as to give rise to another problem. The need to have questions for the interview after the lesson prevented the students from asking questions when it would have been more natural and probably more productive to do so during the lesson. One teacher, for example, could not easily identify the pupil being referred to in a question from the student, and when he did, could not recall what he had said to the pupil. This would seem to be a consequence of the highly structured teaching in the sense that the uniformity of the pattern of classroom events makes later identification of any given event difficult.

One student thought he did not have sufficient time between observing the lesson and interviewing the teacher to prepare his questions as recommended. There are two points of difficulty here. First, although we had no wish to rush the students into an interview before they had formulated their questions in a coherent way, we recognised a danger in letting them have too long a period to think them through. We wished to avoid encouraging them to generate questions which might be theory-laden and over-ambitious; the focus was to be on the events observed. Secondly, we saw a need to conduct the interview as soon after the lesson as possible in order that the teacher would be in a better position to recall the detail of classroom events. As it happened, most of the students in the sample did have some time between the lesson and the interview, and the responses of the teachers to these students were not noticeably different in detail from those of the two students going straight from the lesson to the interview.

The difficulties, on-the-spot, of phrasing probe questions which were both accepting of the teacher's reply, and presented in a way which did not propose an answer to the question, were identified by another student-teacher.

> I found it particularly difficult, if there were questions arising through the interview, to try and phrase them in a way that wouldn't either lead an answer, or would be less than tactful.

Along similar lines, another reported feeling anxious throughout the interview in trying to balance the need to listen to the teacher's answer with the need to remember what it was she wanted to probe of the teacher's reply.

The students also identified what they saw as problems of the interviews for the teachers, which by implication were problems for them. Some of the teachers, at least initially, appeared to feel threatened by the interviews, one student suggesting it was because they thought they were being assessed in some way. More than one student claimed that the teachers, though very willing to co-operate, sometimes appeared at a loss as if they did not really understand what was wanted of them in terms of a reply. And yet another considered that the formal interview was something of an imposition on the teacher's time.

(ii) Second student sample - second block school practice

As before, the data from the students' interviews with the teachers, together with those from the researchers' discussions with the students, were used for further exploration of the research questions (see page 12).

Two of the four students acknowledged that their interviews with the teacher furthered their understanding of the observed lesson. For example, one reported that he had not appreciated the teacher's reasons for walking about the classroom while the pupils were writing up notes; through the interview, however, he had learned that the teacher had been checking that the notes were being taken down adequately, and that, in addition, he was noting when the pupils had finished one part and were ready to begin another.

These students also identified advantages of the formal interview set-up over informal arrangements. It was less likely, for instance, to be postponed under pressure from other events, or to be interrupted (and so diverted) than if it took place informally in, say, a staffroom. Furthermore, both students were conscious that having to prepare for the interview led to a more intent observation of the lesson than was then normal practice. One of the two suggested, however, that the exercise of observation might be more helpful to the student teacher where the teacher being observed was not too experienced.

> I think you learn more from watching a more junior teacher at work. Their problems are more emphasised. [With more experienced teachers] things get done and you don't realise it's been done. The problem's solved before you realise it was a problem. I think I learned more [from the junior teacher] about the handling of pupils.

This was interesting in as much as it demonstrated the student's appreciation of the difficulty of understanding skilful teaching simply from observation.

Of the two remaining students, one did not think that the interview itself added anything to his understanding of the lesson.

> I tended to know what he was going to say ... I could reason for myself that that was the answer.

To him, his understanding of the teaching events was a consequence of having a number of years' experience as a school laboratory technician, where he was frequently in a position to observe teachers teaching. What the teacher had to say would merely confirm what he already knew. This student relaxed this position somewhat, however, when he added that he had found the need to identify positive aspects of the teaching for the interview as instructive. This had made him look more intently to try to identify what the teacher was doing.

> Thinking about the friendly atmosphere of that class, I noticed the teacher's actions to reinforce ... which maybe I wouldn't have noticed before.

The fourth student did not consider the interview had added anything to her understanding of the lesson.

> I don't think there was [additional information from the interview] because I've judged his [the teacher's] character.

> When he dealt with a boy who'd forgotten his jotter [the teacher did not come down heavily on the pupil], I was maybe a little unsure "Was this a first chance, or does he never get angry?" I didn't really expect him to get angry, he's not really like that.

She acknowledged, however, that with the other teachers she had sometimes been uncertain of what was going on, and this had brought her to ask about these classroom events.

When asked after the first interview if they had any changes they would like to make to their interviewing for the second interview, the two students who claimed to have found the interviews helpful suggested they should probe more deeply into the teachers' answers, instead of passing on to their next prepared question.

> I felt I should respond to an answer ... pick up a point that was mentioned, rather than go on to another question.

One of them also thought he should, in his questioning,

> cut down on the generalisations ... and home in on certain topics.

The other considered his interview was too long, and some of his questions were irrelevant to the aim of the interview.

Of the two remaining students, one did not really answer the question, and the answer of the other was counter to the recommendations for interviewing which we had offered.

> Perhaps [I should] prompt more often.

Three of the four students reported on a few problems encountered in preparing or conducting the interviews. One student implied a difficulty in identifying topics for his interview as a consequence of the unvaried structure of the lesson, and the pupils' commitment to it.

> It was such a well-behaved class ... not many teaching methods on display. The pupils were hard at it - prelims. soon - so there weren't too many teaching strategies.

An initial problem for another student was his concern that the interview should be comprehensible to anyone who had not been present at the lesson. A third student was anxious about controlling an impulse to fill up pauses in the discussion.

> I'm always conscious ... that there's a gap between the question asked and the answer coming. The person answering the question obviously needs time to answer and while there's that pause I have the temptation to jump in and almost answer the question for him. I did an interview in Saudi Arabia on the radio ... The girl [interviewer] said she'd ask the question and if there's a slight gap she'd jump in to feed me, so maybe I followed her advice.

The availability of time presented further difficulty. For one student, the problem arose in finding the time to conduct the interview because of his own full teaching timetable, while another cut his interview short because the teacher was clearly anxious to be finished.

> A couple of times the teacher was glancing at his watch ... It tended to end rather abruptly, though the teacher had wanted to do the interview straight away while it was fresh in his mind.

One student (one of the two finding the interview of no additional help) reported no problems with the interviews.

(iii) Third student sample - east of Scotland

In the east of Scotland sample, three of the four students readily acknowledged that their post-lesson interviews with the teachers had helped them gain a better understanding of the observed teaching. In addition, all three could identify an example of the additional information gleaned through the interviews.

> I found it really helpful ... The first few examples [the teacher] did on the board. Then she moved [the pupils] on to an exercise book and she used the same numbers. I wouldn't have known if that was deliberate or just done by chance, but she said it was deliberate because ...

The fourth student accepted that he had had experience of lessons where he needed the teacher's explanation of certain events in order to understand them. However, in relation to the two lessons arranged for the experiment, he believed he could usually anticipate what the teacher was going to tell him.

> I found a lot of the questions I was asking were quite obvious. I knew what she was going to say as I was asking them.

Upon the researcher identifying one of his questions as referring to information he would be unlikely to know without consulting the teacher, the student accepted that he had gained some new understanding from his teacher interviews.

As happened in the earlier student/researcher discussions, the students volunteered what they regarded as advantages of the formal interview arrangements. Three underlined the point that the need to have questions for the interview considerably improved their concentration on the lesson.

> I found it really useful and interesting because you looked really closely at the lesson.

Another advantage identified was that the formal interview helped foster a more relaxed student/teacher relationship which made it easier for the student to ask questions on other occasions.

> It also helps your relationship with the teacher in that you get to know each other a bit better. You find [the teacher] more approachable so you're not frightened to ask questions about another lesson.

A further advantage was that it set aside time for the student to talk with the teacher about the lesson.

> You don't get that much time to actually talk to the teachers because they have classes almost continuously - you talk a bit but not much. This [the interview] is the first time I've actually talked to [a teacher] and I do find it helpful ... We've got to sit and talk.

When asked after the first interview whether they would want to improve their interview approach in any way, one student could not think of any possible improvements; another student thought her questions 'a bit vague', on two occasions she had 'led the teacher' and once she'd asked two questions; the third student (the one who had anticipated the teacher's answers to his questions) thought he should try to find different questions; and the fourth student said she would prepare her questions in advance of the interview, as she found she was getting her words mixed during the interview.

> Every time I spoke ... I mixed my words. Next time I'd watch the lesson then think very clearly about how I was going to word [the questions] ... rather than try to word it on tape.

That only one of these suggestions (when the students 'led the teacher') refers to the recommendations on interviewing is not really surprising as this group made a very good initial attempt at putting the recommendations into practice.

When asked about possible problems encountered in either arranging or conducting the interviews, the first reaction of three of the students was that none had been experienced. On reflection, however, each did remember one problem. One student had been worried that the teacher would react to the question by saying the student ought to know the answer. It appears the teacher had done this on several occasions and the student considered that any more such occurrences would affect the teacher's report on her work. As a result, the student felt she had to vet her questions carefully.

> Sometimes she'd think I should have known about that ...
> So I don't want her to think that too many times.

With another student, the problem was finding something to talk about because the lesson seemed so uneventful.

> It was a problem identifying what to talk about ... There were no hiccups ... everything ran so smoothly.

A third student found it difficult to find questions which he hadn't already asked other teachers, and in consequence considered he knew the answers. And similarly the fourth student's problem was the identification of questions which would be different from those asked at the first interview. In different ways, then, three of these students reported on the difficulties of identifying questions for the interviews.

9. STUDENTS-TEACHERS' USE OF THE RECOMMENDED APPROACH

(i) First student sample: induction block school practice

As well as collecting students' reactions to the interviewing procedure, we analysed the substance of their interviews with the teachers. This analysis provided evidence on the extent to which our generalised explanations and demonstration of models had enabled the students to achieve an adequate understanding of the value of gaining access to the professional knowledge of teachers, and of how this might effectively be done.

Analysis of the researchers' discussions with the students and the students' interviews with the teachers suggested that the majority of students acknowledged a value in speaking with teachers about their teaching following an observed lesson. Even when they asked their questions in the recommended way, however, very few attempted any kind of probe of the teacher's answers, though these frequently lacked detail and begged questions.

> Student: ...[with reference to pupils leaving the room]. It's always an organised kind of thing?
> Teacher: Yes, oh yes. That's important, to have an organised start and an organised end to the day.
> Student: Well, that's all. Thank you very much.

As one student suggested, this may have been because they were unable on-the-spot to frame the probe question appropriately in a way which was accepting of the teacher's replies and did not suggest an answer to the question. Only two students, however, showed any awareness that a failure to probe the teacher's replies was a limitation of their interviewing approach. The adequacy of the students' apparent understanding of how to gain access to teachers' perspectives of their teaching was assessed by the extent to which their questions to the teacher reflected the recommendations on interviewing (see page 5).

The students' questions in the initial interviews implied they had adequately grasped both the need to concentrate on the teachers' strengths and how this might be achieved. The very few instances of the students implying a criticism of the observed teaching were spread thinly over the total number of interviews. For example, one was a comparison of what the teacher being observed had done with what the student observed in the teaching of other teachers.

> I notice ... all the girls sit on one side, and the boys on the other ... in the first year classes I've seen, a lot of the teachers insist on pairing them up. Why do you not do that?

Two additional kinds of approach could conceivably have implied criticism. One was the tendency of a number of students to ask their questions directly and without any of the preamble necessary to convey the speaker's attitude to the question.

> Was there anything in the lesson you'd like to change next time?

The other was a tendency for some students to give little or no acknowledgement of the teacher's answer and to move straight on to something else.

> Student: You seem to cope with a lot of technical problems with the equipment. Does it ever fluster you?
> Teacher replies.
> Student: Did you use a lesson plan this morning?

In relation to the recommendation to ask open questions, the questions of the first interviews (six in total) suggested that three students of the six had an adequate understanding of what was meant by an open question. A majority of their questions (seventeen out of twenty five) were open and formulated in ways such as:

> Right through the lesson the class were working quietly. How do you maintain the low level of noise?

With the remaining three students, the position was reversed and the majority of questions displayed a closed format.

> I noticed they worked very quietly on their own. Is this something that you insist on, or is it just the nature of the work that they'll just work away like that?

Why so many questions were closed is not clear. It may have been because these students did not understand the meaning of the term 'open question', or it may have been because the time between the lesson and its follow-up interview was insufficient to allow them to phrase their questions appropriately. Although the two 'worst offenders' were the only two in the sample to go straight from the lesson to the interview, we suspect that most of the students, at least initially, had a less than sound grasp of what is involved in the phrasing of an open question.

The implications of the recommendation to focus questions on what happened in the particular lesson did not seem to have been thoroughly understood by most of the students. Table 1 summarises the number of instances of the different interpretations of the recommendation to focus on the events of the observed lesson.

TABLE 1

Interpretations of the Recommendation to Focus on Events of the Particular Lesson

Question Focus	Number of Questions
What particular actions	1
What generalised actions	6
Why particular actions	7
Why generalised actions	13
Testing assumptions	15
Not an event of lesson	15
TOTAL	57

Although all students appeared to have understood that their questions should relate to their observations of the lesson, several different kinds of relationship were identifiable in the interviews. In only one case was the question specifically directed towards a particular action in the lesson. More frequently (six cases) the student would refer to an event of the lesson, but ask his or her question in a generalised way.

> I noticed the class came quickly to order. How do you usually do that?

Most students did have at least one example of a question focusing on the actual events of the lesson, but overwhelmingly these questions were framed in a way which implied the student knew what had happened, he or she only required to understand why (20 instances in total, 7 on particular and 13 on generalised actions).

> You spent some time with Jane. Did she have a specific problem?

A few students gave the impression of making assumptions about the events of the lesson or about the teacher's thinking (e.g. in terms of objectives), and using the interview as a means of testing these assumptions (15 examples).

> Did you feel the pupils understood the objectives of the lesson?

Finally, more than one quarter of the questions referred to some feature other than a specific happening or event of the lesson.

> The class are all sitting in single seats. Did you do that, or did they do it themselves?

One further aspect of the students' interviews seems noteworthy; the number of times students asked about the teacher's lesson plan. Of the eight students, five included the question in their interviews. A quote from the student/researcher discussions may convey something of the status of a lesson plan from the student-teacher's point of view.

> ... the fact that [the teacher] didn't even have a lesson plan... that really floored me right away ...

(ii) Second student sample - second block of school practice

The first student/teacher interviews of the second group of four west of Scotland students participating in the project were the source of the findings reported in this section. As with the first sample, these data reflected the students' firm understanding of the need to focus their interview questions on strengths of the observed teaching. From an overall total of 62 questions, only 2 might have been interpreted as concerned with the teacher's weaknesses. One of these implied a possible criticism on the part of the student in the phrasing of his question by comparing the teacher's actions with the actions of other teachers.

> Most of the other science labs have benches ... rows in front of you, whilst [the classroom being discussed] they're more of a "U" shape ...

The other asked the teacher to identify a weakness in his teaching.

> Are there any aspects [of your teaching] which you think may have slipped since you first started teaching?

The findings of the earlier sample were mirrored too in the extent to which the questions were open as opposed to closed in their phrasing. Thus, 19 questions were open such as:

> How do you decide at what point to be more firm with the pupils?

against 35 which were closed, such as:

> Last week you promised the computer, and [today] you were talking about electro-statics. Is that because the computer wasn't available?

Although nearly half of all the closed questions were put by the one student (16), in two of the remaining students' interviews more than half of their questions were closed. Only one of the four students, therefore, used more open than closed questions over the two interviews.

A feature of this sample of interviews, which was not apparent with the first sample, was the number of occasions where a student identified the area of teaching he wanted to discuss, but did not actually ask a question.

> I noticed that John was a bit excitable today. I understand they'd just come from a chemistry lesson.

Examples of this occurred with two of the four students, though a consistent tendency to do so was apparent only with one. Over a total of 24 topics discussed, six of these were framed only as implicit questions.

Table 2 shows how the student-teachers interpreted the recommendation to focus on the events of the lesson. Although more of the questions of the second sample were focused on what actually happened in the particular lesson as intended in the recommendations for interviewing, once again these represented a very small proportion of the total (3 out of a total of 62 questions).

Inappropriately phrased questions sometimes referred to the events of the lesson by generalising the question (7 instances).

> When the bell goes, do you finish what you're saying?

And, as happened with the first sample, in relation to both particular focus and general focus questions, the emphasis was on the reason for the teachers' actions (18 in total).

> You said three times [the pupils] should leave a new page. Do you try to make [your approach] as idiot-proof as you can?

Considered individually, and assuming that 'why' questions imply understanding, only one of the students appeared to have any real grasp of what was intended by the recommendation to focus the question on the events of the particular lesson, and even he framed only a quarter of his questions in this way. The remaining students had each asked only a small proportion of questions which bore a direct relation to events in a particular class.

TABLE 2 Interpretations of the Recommendations to Focus on Events of the Particular Lessons

Question Focus	Number of Questions
What particular actions	3
What generalised actions	7
Why particular actions	9
Why generalised actions	9
Testing assumptions	11
Not an event of lesson	13
No question asked	8
No follow-through of teacher's own evaluation of the lesson	2
TOTAL	62

Sometimes the questions appeared to be testing the interviewer's assumptions (11 instances), such as:

> You tried to show the wave front moving, in the end you asked them ... to come to the front to see the experiment in the beaker. Is that something you were planning to do?

or the questions did not refer to events of the lesson (13 instances),such as:

> Are there aspects of your teaching techniques which [have] matured more than others?

On occasions where no question was phrased, the area of discussion appeared to be events of the lesson other than the teacher's actions (8 instances):

> The pupils seemed to enjoy doing practical work today.

Finally, a few questions (2 cases) in this sample reflected the attempt to put one of the recommendations into practice, but did so only in part. This referred to the suggestion to invite the teachers to say what had pleased them that day about their teaching. The intention was that this should be followed up by asking the teacher what he or she did to achieve the satisfactory aspect of teaching. As it happened, no-one attempting the recommendation followed it up as intended.

(iii) Third student sample - East of Scotland

The student-teachers' first attempt at interviewing a teacher whose lesson they had observed was the source of the findings reported in this section. Here the supervising teachers all had had experience in the same kind of approach, but with researchers rather than student-teachers.

The recommendation to focus questions on the strengths of the observed teaching appeared to have been clearly understood by all four students. From an overall total of 51 questions only three, all from the same interview, could have been interpreted as an implied criticism of the teacher. In each instance, the teacher was asked why he or she did not do something.

> Graham had his hand up for ages and ages. Why did you not let him answer earlier?

These students also reflected a firmer understanding of an open questions. Approximately two thirds of the total questions were open, the actual numbers being 29 open, 16 closed and 6 where the question was not posed. For example, one of the open questions asked:

> When you were doing the examples, you went back to the same ones several times. Why did you do that?

In contrast, a closed question suggested:

> Sometimes you would pick [a pupil] because ... they weren't paying attention. Was it really just to involve them?

Instances of a question not posed included:

> I notice ... when the children came up with ideas ... you never let that go, you will pick it up later.

Considered individually, only one of these students had more closed than open questions, and he was also the student with the incidences of questions not actually posed. The remaining students had each approximately two-thirds of their questions open.

This sample also differed from the earlier samples in the extent to which the students reflected a clearer understanding of the need to ask questions about the particular events of the lesson (see Table 3).

TABLE 3

Interpretations of the Recommendation to Focus on Events of the Particular Lesson

Question Focus	Number of Questions
What particular actions	5
What generalised actions	6
Why particular actions	16
Why generalised actions	3
Testing assumptions	13
Not an event of lesson	2
No question asked	6
TOTAL	51

Thus, 21 questions asked the teacher about the events of the lesson in the way intended.

> When the class came in they were quite high. Eventually you had them sitting ... listening to everything you said. How did you achieve that?

A further 9 questions referred to events of the lesson but generalised the question.

> How do you go about [having the pupils behave in a disciplined fashion]?

As with the earlier samples, however, the instances of both particularised and generalised questions contained a proportion of each which focused on the teacher's reasons for the action, without first asking for a description of the actions.

> You gave them rewards for correct answers. I was just going to ask why you did that?

Questions which appeared to be testing the interviewer's assumptions were once again quite prominent (13 in number).

> Were you pleased with the way [the pupils] settled down?

Only two questions did not refer to events of the lesson:

> Were the pupils [well-trained] at the start?

This sample also included 6 occasions, within the same interview, when the question was not asked. And finally the question about the teacher's lesson plan again featured in both interviews of one student.

One further point of note: one student asked the teacher in both interviews what had pleased him or her about the lesson, and each time followed the teacher's reply by asking what the teacher had done. These were the only reasonable attempts to follow these recommendations over the three experiments.

10. DO THE RECOMMENDED QUESTIONS ELICIT THE DESIRED INFORMATION?

(i) First student sample - induction block school practice

In addition to the assessment of the extent to which the students had followed our recommendations, our analysis of the interviews between students and teachers allowed us to test our own initial assumptions. In particular, we were interested in whether the students' use of the various suggested questions and behaviours led to the teachers providing, in response, information of the kind we were seeking.

Exploration of this question involved as a first step the identification of guidelines for assessing (i) the extent to which the students' questions could be considered to have followed the recommendations, and (ii) the extent to which the teachers, in response to the students' questions, articulated appropriate information about their classroom practice.

As far as the students' questions were concerned, the details of the recommendations were that:

- the questions should focus on positive aspects of the observed teaching
- the questions should be open
- the questions should focus on the events of the particular lesson.

As we have already said, only a few of the students' questions referred to the events of the particular lesson in the way intended. One such example asked:

> How did you bring the class to order, because I noticed they settled down fairly quickly?

The closest most of the students came to focusing the question on the particular lesson was to phrase it in general terms.

> I noticed a pupil obviously finished. What do you do in that situation?

Possibly as a reflection of this, overwhelmingly the teachers' replies were also generalised. Under the circumstances, we decided to base our investigation of the extent to which the recommendations had been followed by this sample of students on a more limited interpretation of the need to focus on the events of the lesson. An 'appropriate' question, then, should:

- indicate a positive, or at least neutral attitude to its topic
- be phrased in open terms
- be focused on the events of the particular lesson in the sense of asking what the teacher did or why, or what the teacher does or why, or any combination of these.

Similarly, the evaluation of the extent of the teachers' articulation of their teaching included a generalised indication of what they do and why. Any particular or generalised indication of the teacher's actions, or of why the teacher acts in this way, or any combination of these was judged a 'successful' answer; and this is the case, whether or not the answer has been preceded by an 'appropriate' question. All other answers were coded 'unsuccessful'.

Hence, there were four possible combinations of student question followed by teacher answer:

1 'Appropriate' questions and 'successful' answers:

Question: How would you ensure your instructions are clearly understood?

Answer: The workcard helps ... Even in the workcard, that doesn't cover all the possibilities. I'll use some of the time tomorrow for tying up what we covered today. I ... would go through a very idealistic example on the board with them just to make sure that if anyone is in doubt they can take that one down in their jotters.

2 'Appropriate' questions and 'unsuccessful' answers:

Question: I noticed a pupil sitting ... obviously finished. What do you do in that situation?

Answer: What happened there was a second year child must have had the book in his folder. As we go on with the SMP we will have more materials and that type of thing shouldn't happen.

3 'Inappropriate' questions and 'unsuccessful' answers:

Question: How many times have you taught that lesson before?

Answer: 15 years... At least once a year for 15 years.

4 'Inappropriate' questions and 'successful' answers:

Question: You use the right mixture of authority and humour. It went down very well but obviously there is a danger of being too humorous. Do you do this consciously, or is it instinct?

Answer: I don't want to appear totally didactic ... I want the pupils to do the work, and I want them to do it in a relaxed atmosphere, and if to get the atmosphere more relaxed I throw in a couple of silly jokes ... it makes them laugh, it breaks any tension, and it gets them to work. It's a combination of didactic teaching and liberal teaching. I don't think a concentration on any one suits my ... style so I do a combination of both.

Where the students have asked 'inappropriate' questions, it was considered important as a further test on the validity of the correlation between the 'inappropriate' question and the answer, to assess whether the teacher had in fact answered the question asked.

Our assumption was that the recommended techniques of interviewing would be supported as effective means of gaining access to the teachers' perspective of their teaching if there was a strong correlation between 'appropriate' questions and 'successful' answers, and between 'inappropriate' questions and 'unsuccessful' answers (in the latter instance, particularly if the 'unsuccessful' answers were, nevertheless, answers to the question asked). Conversely, the validity of the recommendations would be undermined as techniques for eliciting the required information if there was a preponderance of 'appropriate' questions and 'unsuccessful' answers, and of 'inappropriate' questions eliciting 'successful' answers.

Our analysis revealed 104 questions posed over the total of 13 interviews. Of these

- 47 'appropriate' questions elicited 'successful' answers
- 37 'inappropriate' questions elicited 'unsuccessful' answers(in only one instance did the teacher not answer the question asked)
- 4 'appropriate' questions elicited 'unsuccessful' answers
- 16 'inappropriate' questions elicited 'successful' answers.

The correlations as percentages are as shown in Table 4.

TABLE 4

Correlations among Questions and Answers on the 'Appropriate'/'Inappropriate' and 'Successful'/'Unsuccessful' Dimensions

	% 'Successful' Answer	% 'Unsuccessful' Answer
'Appropriate' question	47	4
'Inappropriate' question	15	37

The 37 'inappropriate' questions which elicited 'unsuccessful' answers were of the following types:

- Closed questions	8	(22%)
- Closed and testing students' assumptions	12	(32%)
- Closed and not an event of the lesson	1	(3%)
- Closed and implied criticism	1	(3%)
- Testing student's assumptions	9	(24%)
- Not an event of the lesson	5	(13%)
- No follow-through of teacher's own evaluation of the lesson	1	(3%)

Of the 4 'appropriate' question/'unsuccessful' answer combinations, three were 'unsuccessful' as answers because the teachers did not answer the question asked, and one because the student interrupted the teacher to ask a different question.

The 16 'inappropriate' questions which elicited 'successful' answers were of the following types:

- Closed questions	5	(31%)
- Closed and testing student's assumptions	3	(19%)
- Closed and not an event of the lesson	1	(6%)
- Testing student's assumptions	4	(25%)
- Not an event of the lesson	2	(13%)
- Implied criticism	1	(6%)

Given the predominance of the combination of 'appropriate' question/'successful' answer and 'inappropriate' question/'unsuccessful' answer (81% of the total), the data give considerable support to the validity of the recommendations as effective means of gaining access to teachers' perspectives of their teaching.

The four 'unsuccessful' answers to 'appropriate' questions are too few in incidence to offer an explanation of their divergence from the main finding in support of the recommendations. The fact that 16 'inappropriate' questions elicited 'successful' answers, however, deserves further attention. Given that the limitations of the questions which identify them as 'inappropriate' closely mirror the pattern of the limitations of the 'inappropriate' questions eliciting 'unsuccessful' answers, the explanation would not appear to lie with the characteristics of the questions. As it happens, 8 of the 'successful' answers came from one teacher, who out of a total of 12 questions answered only three 'unsuccessfully' The remaining 8 'successful' answers were thinly dispersed over the other teachers.

(ii) Second student sample - second block of school practice

Although the second sample of student/teacher interviews contained a higher percentage (26%) than the first of students' questions focusing on the events of the particular lesson, these were still comparatively rare. We decided, therefore, as with the evaluation of the first sample, that the salient characteristics of an 'appropriate' question should include those incidences where the interviewer had referred to the events of the observed lesson, but had generalised these in the form of a question such as:

> You gave out a set of sheets by hand. Why do you do that?

An 'appropriate' question, then, should:

- indicate a positive, or at least neutral attitude to its topic;
- be phrased in open terms;
- be focused on the events of the particular lesson in the sense of asking what the teacher did or why, or what the teacher does or why, or any combination of these.

Similarly, a 'successful' teacher answer comprised any indication of what the teacher did or does, any indication of why, or any combination of these. As before, evaluation of an answer as 'successful' was independent of whether or not it was preceded by an 'appropriate' question.

The analysis identified 115 questions over a total of 7 interviews. Correlations among questions and answers were as follows:

30 'appropriate' questions/'successful' answers;
38 'inappropriate' questions/'unsuccessful' answers;
47 'inappropriate' questions/'successful' answers.

The category 'appropriate' question /'unsuccessful' answer was empty. Correlations as percentages are shown in Table 5.

TABLE 5

Correlations among Questions and Answers on the 'Appropriate'/'Inappropriate' and'Successful'/'Unsuccessful' Dimensions

	% 'Successful' Answer	% 'Unsuccessful' Answer
'Appropriate' question	30	nil
'Inappropriate' question	47	38

The 38 'inappropriate' questions eliciting 'unsuccessful' answers were of the following types:

-	Closed questions	7	(18%)
-	Closed and testing student's assumptions	4	(11%)
-	Closed and not an event of the lesson	8	(21%)
-	Closed and not asking a question	1	(2%)
-	Testing student's assumptions	5	(13%)
-	Not an event of the lesson	4	(11%)
-	No question asked	6	(16%)
-	No follow-through of teacher's evaluation of the lesson	3	(8%)

The 47 'inappropriate' questions eliciting 'successful' answers were of the following types:

-	Closed questions	21	(45%)
-	Closed and testing student's assumptions.	5	(11%)
-	Closed and not an event of the lesson	5	(11%)
-	Closed and no follow-through of teacher's own evaluation of the lesson	1	(2%)
-	Not an event of the lesson	2	(4%)
-	No question asked	12	(25%)
-	Implied criticism	1	(2%)

Support for the validity of the recommendations as effective means of eliciting information on what teachers do routinely in their teaching is not so strong as with the data from the first sample of student/teacher interviews. The two supporting categories, 'appropriate' question/ 'successful' answer and 'inappropriate' question/ 'unsuccessful' answer, together comprise 59% of the total; the category, 'inappropriate' question/ 'successful' answer, which gives no support to the validity of the recommendations, accounts for the remaining 41%. Indeed, comparison of the two 'successful' answer correlations, 'appropriate' question/ 'successful' answer and 'inappropriate' question/ 'successful' answer, might suggest that a 'successful answer' is more likely to be elicited through use of the inadvisable techniques of the student recommendations.

Table 6 shows the characteristics of questions categorised as 'inappropriate' and provides comparisons between those leading to 'unsuccessful' and 'successful' answers.

TABLE 6

Comparison of the Limitations of 'Inappropriate' Questions Producing 'Unsuccessful' Answers with the Limitations of 'Inappropriate' Questions Producing 'Successful' Answers

% Question Limitations	% 'Inappr' Q Unsucc' A	'Inappr' Q 'Succ' A
Closed	18	45
Closed and testing assumptions	11	11
Closed and not event of lesson	21	11
Closed and recommendation foreshortened	0	2
Closed and no question asked	2	0
Testing assumptions	13	0
Not an event of lesson	11	4
No question asked	16	25
Implied criticism	0	2
Recommendation foreshortened	8	0
TOTAL	100	100

Given the small number of questions in the two sets of data (38 and 47 respectively), the difference between percentages in the individual 'closed' category is the only one which might be significant.

The recommendation against the use of questions which are closed was made for two reasons: inviting a yes/no answer is intended to help the respondent to be expansive in his or her reply, and the suggestion of a possible answer in the framing of the question may divert the respondent into accepting an answer he or she might not otherwise have produced. In each case, the claimed effect of a closed question is expressed as a tendency; that is, there are likely to be some respondents who are not constrained by the frame of the question, and will answer as they see fit. The interview data might be examined further to test the strength of this idea. Thus, a person who is not constrained, as suggested, by a closed question would be expected to be just as expansive in his or her answers to a closed question as to an open question; and, in addition, would be as likely to disagree with the suggested answer in the question as to agree.

As happened with the first sample of interviews, a majority (16) of the (21) 'closed' questions produced 'successful' answers in two interviews, both of which involved the same student and teacher. Comparison of the 'open' questions of these interviews (7 in total) with the 'closed' questions revealed no significant differences; an average of 10 'open' lines per answer against an average of 12 'closed' lines per answer. On the question of the extent to which the teacher appeared to go along with the suggested answers of the closed questions, there was an equal balance of agreement and disagreement. On balance, then, the evidence would seem once again to support the explanation of the successful answers as residing with the particular teacher.

Third student sample - east of Scotland school practice

The third sample of student-teacher interviews reflected a considerable improvement over the two earlier samples in terms of the students' take-up of the recommendation to focus questions on the events of the particular lesson. From a total of 89 questions over 8 interviews, about half asked about the teacher's actions of the observed lesson. Once again, however, approximately two thirds of these questions by-passed what the teacher did to home in on the reasons behind the teacher's actions.

> I noticed you gave [the pupil] the squares first, but then you took them away and gave them to the pupil behind. Why did you do that?

If instances of the students referring to the particular lesson but generalising the question are taken into account, some 65% of the total questions would be considered 'appropriate' on this criterion.

Given the significant incidence of appropriately focused questions, it was decided that the definition of an 'appropriate' question for this third sample should be confined to questions focused on the particular events; that is, to what the teacher did, or why. An 'appropriate' question, then, should:

- indicate a positive, or at least neutral attitude to its topic
- be phrased in open terms
- be focused on the events of the particular lesson in the sense of asking what the teacher did or why, or a combination of these.

However, in addition, and to allow comparison with the earlier samples, the interviews were also explored in terms of the broader definition of an 'appropriate' question used with the other samples. Here, an 'appropriate' question should:

- indicate a positive, or at least neutral attitude to its topic
- be phrased in open terms
- be focused on the events of the particular lesson in the sense of asking what the teacher did or why, or what the teacher does or why, or any combination of these.

In this third student sample the teachers' replies reflected a greater tendency than in the first two to answer in particularised terms. Table 7 sets out the correlations between questions and answers in relation only to the particular or general focus dimension of both questions and answers. The numbers should not be taken as equivalent to the number of 'appropriate' questions since 'success' was also judged on other dimensions (such as whether open or closed).

TABLE 7 Correlations between Questions and Answers in relation to the Particular and General Focus Dimension

		Teachers' Answers						
		Part What/Why	Part What	Part Why	General What/Why	General What	General Why	TOTAL
	Part.what	8	2	2	2	1	nil	15
	Part.why	1	nil	17	2	nil	8	28
Students' Questions	General what/why	nil	nil	nil	nil	nil	1	1
	General what	1	nil	nil	3	nil	1	5
	General why	nil	nil	1	1	1	2	5
	TOTAL	10	2	20	8	2	12	54

Of significance among the results are the correlations between 'particular what' questions and 'particular what/why' answers, and between 'particular why' questions and 'particular why' answers. Both results appear to underline the close relationship between the precise form of the question and the form of its answer. As with the students' questions of this sample, therefore, it was decided first to categorise 'successful' teachers' answers as describing/explaining the teacher's actions in particularised terms only. For instance:

> In the first example we worked with words and the relationship of words and then we cut it down to symbols. In the second example, although I was speaking, I wrote no words. We moved straight on to symbols.

In the second place, however, and to provide comparisons with the other samples, the answers were categorised with reference to the teacher's actions in either particularised or generalised terms.

> If I allow [pupils] to ask questions in the middle of a lesson that are irrelevant, it could take ... so much longer and everybody else loses interest.

The analysis identified 89 questions over a total of 8 interviews. In relation only to the first definition of an 'appropriate' question and a 'successful' answer (i.e. as referring to the events of the lesson in a particularised sense), correlations among questions and answers were as follows:

26 'appropriate' questions/'successful' answers;

9 'appropriate' questions/'unsuccessful' answers;

46 'inappropriate' questions/'unsuccessful' answers;

8 'inappropriate' questions/'successful' answers.

Correlations as percentages are shown in Table 8.

TABLE 8

Correlations among Questions and Answers on the 'Appropriate'/'Inappropriate' and 'Successful'/'Unsuccessful' Dimensions

	% 'Successful' Answer	% 'Unsuccessful' Answer
'Appropriate' question	26	9
'Inappropriate' question	8	46

All 9 'unsuccessful' answers to 'appropriate' questions were categorised as 'unsuccessful' because the answers were generalised.

The 46 'inappropriate' questions eliciting 'unsuccessful' answers were of the following types:

- Closed	4	(9%)
- Closed and testing students' assumptions	12	(26%)
- Closed and not an event of the lesson	1	(2%)
- Closed and generalised	4	(9%)
- Testing students' assumptions	10	(22%)
- Not an event of the lesson	1	(2%)
- No question asked	6	(13%)
- Implied criticism	1	(2%)
- Generalised	7	(15%)

The 8 'inappropriate' questions eliciting 'successful' answers were of the following types:

- Closed	3	(37%)
- Testing students' assumptions	1	(13%)
- Implied criticism	2	(25%)
- Generalised	2	(25%)

The combined percentages of the categories 'appropriate' question/'successful' answer and 'inappropriate' question/'unsuccessful' answer (81% of the total) convincingly support the recommendations as valid means of eliciting the desired information. Moreover, the remaining categories, in addition to their small percentages of the total, were compiled from the interviews of all four students, and so figure only slightly in individual interviews.

In relation to the wider definition of an 'appropriate' question and a 'successful' answer (i.e. referring either in a particularised or a generalised sense to the teachers' actions), correlations among questions and answers were as follows:

41 'appropriate' questions/'successful' answers

2 'appropriate' questions/'unsuccessful' answers

21 'inappropriate' questions/'unsuccessful' answers

25 'inappropriate' questions/'successful' answers

elations as percentages are shown in Table 9.

TABLE 9

Correlations among Questions and Answers on the 'Appropriate'/'Inappropriate' and 'Successful'/'Unsuccessful' Dimensions

	% 'Successful' Answers	% 'Unsuccessful' Answers
'Appropriate' question	41	2
'Inappropriate' question	21	25

In both instances of 'unsuccessful' answers to 'appropriate' questions the respondent said she didn't know the answer.

The 21 'inappropriate' questions eliciting 'unsuccessful' answers were of the following types:

- Closed questions	1	(5%)
- Closed and testing the student's assumptions	9	(43%)
- Closed and not an event of the lesson	1	(5%)
- Testing the students' assumptions	6	(28%)
- Not an event of the lesson	1	(5%)
- No questions asked	3	(14%)

The 25 'inappropriate' questions eliciting 'successful' answers were of the following types:

- Closed questions	10	(40%)
- Closed and testing the students' assumptions	4	(16%)
- Testing assumptions	5	(20%)
- No questions asked	3	(12%)
- Implied cricitism	3	(12%)

The results here are significantly less supportive of the validity of the recommendations for eliciting the desired information than are the results where a tighter definition of 'appropriate' questions and 'successful' answers was used. This is not difficult to explain: the difference is attributable to the inclusion of generalised answers in the 'successful' answer category of the second set of results. In the first set, these would have been categorised as 'unsuccessful' answers to 'inappropriate' questions.

11. LEARNING FROM THE FIRST INTERVIEW FOR THE SECOND

(i) First student sample: induction block school practice

The students' early attempts at interviewing the teachers whose lessons they had observed pointed up a number of ways in which they were not managing to follow the recommended advice on interviewing. It was decided, however, that the researchers' advice given after the first student/teacher interviews should refer to no more than two areas which the student might try to improve for the second interview. Assessing the success or otherwise of the researcher's intervention was confined, therefore, to whether the student had attempted to use the advice offered for those specific areas in the second interview.

Three of the students had problems with the recording equipment, and as a result had each recorded only one student/teacher interview. Two of these were the first interview, and one was the second. Formal comparisons between performance in the first and second interviews, therefore, were possible for only five of the students.

Of the five who conducted two interviews, three showed a marked improvement in accordance with the advice given them, and this was so even in the case of the student whose first interview had been relatively well conducted. The two remaining students showed only slight improvement at their second attempt. One of these managed on two occasions to follow the advice given when he attempted to indicate a positive attitude in his questioning.

> Something very interesting was where you judged the time of the lesson almost to the minute. Did you know that the time taken on the discussion ... would be just right to fit into the period?

In other respects, however, the second interview manifested the same problems as the first. The other student made only one attempt to adopt one of the recommendations: to ask open rather than closed questions.

In the case of the student who had no recorded second interview, there was no way of assessing whether the advice had been followed during the interview. However, the two students with no recorded first interview could be assessed to a more limited extent on the basis of their report of how they performed in that interview. One of them conducted a very good second interview, in which the advice offered was put into practice. Throughout he made efforts to focus on the events of the particular lesson in a way which avoided any implication of criticism.

> The class was working quietly before you entered the room. How did you get them to carry on by themselves?

There is some indication that this student's first interview was also well conducted, as he was one of the few students who identified limitations of his first interview in relation to the recommended patterns of behaviour: he suggested that he needed to probe more into the teacher's answers. Insofar as the limitations he identified did not recur in the second interview, it would appear to have been an improvement on the first.

The remaining student's second interview reflected again what had appeared to be a problem with his first interview. In other words, there was little evidence of the advice offered having been put into practice.

(ii) Second student sample - second block school practice

One student from the second group of four student-teachers participating in this part of the study withdrew for personal reasons. As with the first group of students, the suggested improvements for interviewing related to only two aspects of the performance of the remaining three students during the first teacher interview.

Of the three, the student who was most successful in following the recommendations on interviewing in his first interview attempted to put into practice the advice that he should focus on what the teacher did rather than why. The improvement was not marked, however, because five of his attempts to enquire about what the teacher had been doing were not expressed as questions.

> I noticed you picked on John today. Not picked on him, but you asked him to answer a question.

Why this student should have omitted to frame his questions is not clear. There was no indication that his failure to do so was a consequence of being interrupted by the respondent. Perhaps he always has a tendency to imply questions without actually framing them. Certainly his first interview with the teacher contained a number of implied rather than explicit questions. The difference between the two interviews in this respect was that the implied questions of the second interview referred to the teacher's actions of the observed lesson; whereas in the first interview the implicit questions most often referred to the pupils' behaviour.

> One boy asked you why ... the constructive interference occurred.

A second student attempted to follow the suggestion that he should ask questions about the events of the lesson, but again the improvement was slight. In the first interview, 2 of the 11 questions focused on events of the lesson; in the second, 4 of the 11 questions did. A second suggestion, that the student should follow up a question on what had pleased the teacher about the lesson by asking what the teacher had done, was not attempted, although the opening question did reappear in the second interview.

With the third student, there was some indication of an attempt to follow the suggestion to focus questions on the particular event. Five of the 21 questions in the second interview were constructed in this way, compared with 2 of the 19 questions in the first. In relation to a second suggestion that he should ask open questions, there was no indication that the advice had been taken. During discussion with the researcher, he expressed the opinion that asking closed questions was the more normal approach to eliciting information from people.

> If I'd been in just a conversation I wouldn't have said things like "Why do you hand out the sheets individually?" So I had to phrase it [suggesting an answer].

(iii) Third student sample: east of Scotland school practice

The four students of the third sample followed the recommendations on interviewing so ably at the first student/teacher interview that two of them could be offered only one suggestion for improving the second interview.

Thus all four were advised to include the what question; that is, to first ask what the teacher had done before asking why. In the follow-up interview, three of the students achieved a higher percentage of what questions than in their first interview. The fourth student, however, achieved a lower percentage.

With regard to the remaining suggestion for improvement, offered only to two of the students, neither produced any example of the weakness in the second interview.

12. THE TEACHERS' REACTIONS TO THE STUDENT/TEACHER INTERVIEWS

In interviewing the teachers whose lessons the students had observed, our concern was to gain some understanding of their reactions to the student/teacher interviews. More specifically, we were interested in the following issues:

- What value (if any) did the teachers recognise for the students in speaking with a teacher about the teaching in an observed lesson?
- To what extent did it help the teachers to gain a better understanding of the concerns of student-teachers?
- To what extent did the teachers experience difficulty answering the questions?
- Were there problems arranging the interviews?

(i) First student sample - induction block school practice

The ten teachers involved reported a favourable reaction to the student/teacher interviews during their discussion with the researcher, although six of them claimed to have had initial reservations about participating. Of these four said they had felt apprehensive because being interviewed was a new experience for them.

> I was feeling a wee bit apprehensive ... the idea of things being on tape ... just something different and without having time to think about it.

One of the other teachers was uneasy about how the material of the interview would be used, and another could not recognise an advantage of the interviews for the students.

> I wondered what advantages it would have for the student to hold the interview but as they were asking the questions I [thought] they probably would gain something from it.

All of the teachers recognised that it was valuable for the students to be able to discuss how a particular lesson was taught. One teacher considered the value of the exercise was improved in the context of a formal interview arrangement.

> [the interviews] probably focus on it a bit more ... [the teaching] was being looked at in a bit more detail than possibly we'd normally do.

Two teachers thought that the student observed the lesson more carefully simply because of the need to think up questions for the interview.

> [the teacher as a student] just blankly watched and then went into a classroom and did my own thing.
>
> [the interview] made them more aware of the teaching ... made them look for things to discuss.

When asked whether the interviews had helped them to gain a better understanding of the concerns of student-teachers, most teachers claimed to be well aware of these because discussing lessons with students was their normal practice. On the other hand. three teachers said that the interviews had reminded them that what might be a minor aspect of teaching to them could be important to a beginner.

> [the students] certainly asked me one or two things ... I didn't expect, but thinking back to when I was a student they are the kinds of things you would want to know anyway ... Trivial things like "How should I write something on the board?"

All but three of the teachers reported no difficulty in answering the students' questions. Of the three, two recalled an occasional hesitation in replying, because the activity was so routine to them.

> I could explain why I was doing it, but I couldn't remember it in the first place ... some of the things I've lost.

The remaining teacher had difficulty remembering what she had been doing during the lesson, because in the interval between the lesson and the interview she had taught the lesson to two more classes from the same year.

The problem of finding time for the interview in a full timetable was explicitly acknowledged by only two teachers.

> Nobody in this department has a lot of free time ... It's an additional burden on your time.

It subsequently emerged, however, that at least six of the teachers had problems of this nature. For instance, two teachers did it during their 40-minute lunch-break, and a further two had another teacher take their class so that they could be released for the interview.

Generally speaking, the students were considered polite in their interviewing, and to have asked pertinent questions. One slight criticism from one teacher, however, was that the students were suggesting answers in their questions, and in this way.

> ...unwittingly answering their own questions.

Another teacher thought the students found it difficult to identify questions for the interviews.

> I think they found it hard identifying the things that I was doing in the class.

Two teachers thought they probably spoke more to the student after the first interview because the interview had helped them to appreciate what the particular student wanted to find out about.

> After the interview you get more of an insight into the type of student you're dealing with.

(In general discussion with the whole group of students, several of them indicated to the researcher that they thought the teachers talked more about their classroom teaching after the experience of the interview).

When asked if their talk with the student had referred more to the particular lesson or more to their teaching in general, the most frequent response was that they had spoken of the particular lesson, but had usually moved on to teaching in general.

> [the students] asked me specific questions but [the answers] wandered into generalisations.

(ii) Second student sample - second block school practice

The four teachers of the second sample reacted favourably to the student interviews in the sense that they recognised their considerable value to the students.

> Absolutely ... Sometimes it's not obvious to the student why you're doing something because it's based on experience with a particular class over time ... In that respect you would explain the background ... the history.

Indeed, all four made the point that it was their normal practice to discuss aspects of observed teaching with a student. However, one teacher saw an additional benefit in having a formal interview arrangement. In his view, the student's questions gained an importance which they did not have in a more casual setting. Because of this, the teacher's answers were more considered than usual.

> The formality of the interview gave the questions an importance ... It wasn't just a staffroom thing where you were [cut short]. The questions took on an added importance ... you were taking your time and considering your answer.

When asked whether the interviews had helped them to gain a better understanding of student-teachers' concerns about teaching, one teacher did not agree because he considered he was already well acquainted with these. The remaining teachers, however, acknowledged a gain in their understanding, two of them adding that the topic of some of the questions had surprised them.

> Yes, because some of the questions seemed to be on things that I didn't regard as very important. It made me realise there must have been a point where [for example] you don't know how to set something up.

Three teachers reported difficulty in answering some of the questions, because these referred to aspects of their teaching which the teachers no longer thought about.

> It was very difficult for me to analyse my own automatic things ... It's like trying to explain to someone how you drive a car. It's extremely difficult to explain something you do unconsciously and put it into logical steps.

With regard to possible problems in arranging the interviews, no-one considered it a problem. It later transpired, however, that one teacher had to rearrange an interview because it coincided with an appointment he had forgotten about, and another teacher was interviewed during the lunch-break.

Two teachers had slight criticisms of the student's interview technique: one suggested that the interview had seemed overlong, in particular because the teacher did not consider he was being asked about key aspects of the lesson.

> The interview was a bit long ... If he'd asked about managing the lesson, I would have seen the interview as much sharper. He [the student] seemed to be side-tracked by other things.

The second teacher thought that the student was ill at ease throughout.

Given that all four teachers claimed it their usual practice to discuss lessons with student-teachers, no-one accepted that the interviews had led them subsequently to give more emphasis to the business of discussing lessons with students.

As far as the teachers could recall, their replies during the interviews had tended to move from referring to the particular lesson towards their teaching in general.

> I tended to get off into generalisations ... You can't really explain why you relate to one pupil one way and another another except by reference to past experience or other classes.

(iii) Third student sample - east of Scotland school practice

When asked their general reaction to the student/teacher interviews, the four teachers of the third sample responded favourably and, in one instance, with considerable enthusiasm.

> The structured format of your exercise is very much better than me taking a student aside and saying "Now I did this because ..." The student had to watch for 40 minutes and structure questions around the lesson.

The teachers were unanimous too in recognising the value of the interviews to the student. They suggested the interview helped the students to gain a better understanding of what was going on in the lesson.

> Great value ... Perhaps in my subject the children can't do something ... I already know now where the problems are going to come and I try to pre-empt that and I don't think a student is really aware of that ... They don't know how you've planned your lesson.

In addition, the teachers recognised that the need to have interview questions meant the students attended to the teaching more carefully than they would normally have done.

> [The student] obviously observed the lesson much more carefully than she would normally have done, because she had to write out questions ... I felt at the end of the day, [the interview] aided [the student] greatly ... She gained far more from this than [from] anything else she did in the school.

All four teachers reported that it was their usual practice to speak with students about the teaching of observed lessons. In consequence, they believed they were familiar with the concerns of student-teachers.

> Rather than help us understand better, it would tend to reinforce what we thought.

Nevertheless, one of the teachers was surprised not so much at the kinds of questions asked as at the ones which did not figure in the interviews, and which she considered central to the lesson.

> It made me realise [the student] took an awful lot for granted ... A lot of the organisation, he didn't ask about. He asked about what was going on, without seeing into what had gone before to get them to that point.

Only one teacher experienced any difficulty in replying to one of the student's questions. She found it difficult to articulate why she did what she did.

> It's automatic [answering pupils' questions with another question] ... and when I thought about it ... I thought "Well, why do I do it?" ... I suppose it's to try and get them to use their brains.

Although the four teachers participated readily in the interviews, and tended to dismiss problems in arranging them, in fact all four had difficulty accommodating the interview into very tight timetables: one teacher had to rearrange her teaching schedule, and two had to arrange the interviews for outside school hours.

> I have very few free periods and when I do I am usually travelling between schools [the school annexe is at some distance]. It's almost impossible to find the time. Even lunchtimes ... Two days I have a class at lunchtime.

On the issue of possible improvements to the students' interview approach, two teachers thought none was needed. Of the other two, one suggested the student appeared to be 'desperately trying to think up questions'.

> There were things he could have asked about ... I said "tidy up" and the children did it. It took a long time to get the children to do that and he hadn't seen it ... [the students] don't see the build-up to get the pupils to the stage they're at.

The remaining teacher thought she had been asked almost the same questions at both interviews. However, she did not think the student could be blamed for this, because she had had to observe the same lesson being taught to two similar classes.

None of the teachers believed they had discussed their lessons more with the students after the experience of the first interview. All of them claimed it their normal practice to speak with student-teachers about observed lessons.

Finally, the teachers saw their talks with the students as including both reference to the particular lesson and to their teaching in general.

> It branched out in the way I had to keep referring to other things we were trying to do.

13. A SUMMARY OF THE FINDINGS

(i) Student-teachers' reactions

No obvious differences among the three samples were apparent. Most of the student teachers found the experience a useful one, but a small minority reported either that there had been nothing to learn from the observed lessons, or that they had learned everything they could from observation. Almost all reported that they had obtained information from the interviews, about the teachers' actions and about the reasons for those actions, which they could not have gleaned from observation alone. And this appeared to be true even for those students who claimed not to have gained from the experience. Only a few students, however, were explicit about how in their own teaching they might make use of what they had learned about the experienced teachers' practices.

There were stronger doubts about the formality of the interview procedure, although the majority of student-teachers recognised several of its advantages. It was seen as

(i) improving their concentration on the lesson and so making their observations more purposeful and useful

(ii) giving a status to their questions which they would not otherwise have had

(iii) enabling them to have extended, in-depth conversations with teachers (apparently a rare event) without being diverted or cut short

(iv) facilitating a good relationship between student and teacher, and making it easier for the student-teachers subsequently to approach the experienced professionals with questions about their teaching.

These perceived benefits, together with the gains in students' understanding, suggested that the interviews had offered a worthwhile contribution to their school practice experience. They also went some way to allaying our initial concern that the students might appear critical in their interviewing and damage their relationships with the teachers. There were, however, also disadvantages. The student-teachers mentioned

(i) their fears that the formality of the interview would be threatening to the teachers

(ii) that in classes where individualised teaching was prevalent, it was awkward and not sensible to delay asking questions until the interview after the lesson.

They argued that in some classes teachers had the opportunity to discuss their teaching during the lesson. Furthermore, because individualised contexts call for teaching which is responsive and somewhat fragmented, it was often difficult for the teacher to recall individual actions in the later interviews. While such views must be taken seriously, we might speculate that these kinds of circumstances, in which the teacher is constantly attending to the needs of individual pupils and frequent interruptions are likely, will not be the most conducive to detailed discussion about aspects of the teaching. Such circumstances might well exacerbate the difficulties which teachers already have in articulating these things.

Several aspects of the task itself presented difficulties for the student-teachers. They reported problems in

(i) finding useful questions to ask

(ii) articulating clear questions

(iii) formulating probing questions while listening to what the teacher was saying

(iv) avoiding leading questions

(v) leaving time for teachers to consider their answers.

Their problems seemed to arise because in some cases the teaching was so heavily structured that there was little to ask about, or the relevant questions had been asked before, or questions were easy to find only with the more competent teachers, or (and in contrast) experienced teachers resolved each problem before the student was aware of its existence, or there was concern that the teacher would think the question posed demonstrated the student's ignorance.

One student reported having too little time to prepare his questions because the interview took place straight after the lesson. He was one of only three in this position, and two of them made a poor showing at implementing recommendations. Since the remaining students had the time to prepare their questions, and some also were successful in gaining the information in the detail wanted, it would seem plausible that students should have some time for preparation between the lesson and the interview. Our evidence, however, is insufficient to identify an optimum period between lesson and interview which would permit adequate preparation but not run the risk of students preparing over-elaborate or generalised questions. The problem experienced by one student of fitting the interview into a full timetable is not so easily answered. If the experiment was incorporated into pre-service teacher-training courses, the students' and the teachers' timetables would have to take account in some way of the need for time.

(ii) Student-teachers' behaviour

How did the students' behaviour correspond to what they had been encouraged to do?

Here we must distinguish from the others the four student-teachers who were working with the teachers with whom we had earlier worked ourselves. Whether for that reason or some other, these student-teachers tended much more than others to do what they had been asked to do: they concentrated firmly on teachers' strengths; they asked about what had happened in the lesson and why and how teachers had done what they did; and they asked open questions. They did not, however, probe very well.

Results were more disappointing for the other twelve student-teachers. Again, however, they did concentrate almost without exception on the teachers' strengths; and they based their questions on the lessons they had observed. But the great majority of the questions were in a generalised form: 'What do you do about...?', 'Why do you....?', 'How do you ...?'. In addition, most of the questions were also closed: 'Do you do that because...?' and 'Did you plan to do that or was it spontaneous?'

One advantage of the variation in performance was that it allowed us to test the hypothesis that questions of the kind we were recommending were necessary and sufficient to generate teacher-talk of the kind sought.

(iii) Correlation between question appropriateness and sought-after talk

We considered first the small minority of questions asked about the particular events observed, and what consequences such questions had. At first sight the results here seemed disappointing because they appeared to show that such focused questions led frequently to generalised answers. A more careful analysis showed, however, that the typical answer to 'What did you do?', 'How did you do it?' or 'Why did you do it?' did provide an initial explanation of what had been done, but then spontaneously launched into a more generalised discussion of 'If it had been a different pupil, or topic, ot time of day, then I would have ...' We should be very pleased if all questions and answers were like that.

For the rest, we categorised the questions on the basis of their other attributes as 'appropriate' or 'inapproprate', and the answers as 'successful' or 'unsuccessful'.

The relationship was very clear. 'Appropriate' questions almost without exception produced 'successful' answers; but 'inappropriate' questions produced 'successful' answers almost as often as they produced 'unsuccessful' answers. Closer examination suggested that six individual teachers, including all four with whom we had worked previously, were largely responsible for the 'successful' responses to the 'inappropriate' questions. Some teachers, this seems to show, do not need 'appropriate' questions; but other teachers, probably the majority unless they have been inducted at length, will give the kind of answers sought only if they are asked 'appropriate' questions.

(IV) Teachers' reactions

All the teachers involved asserted, with varying degrees of enthusiasm, that the exercise had been a valuable one for the student-teachers. Since, however, they normally discussed their observed lessons at some length with the students, there were variations among them in their expressed view about the extra value of this procedure. Only three of them thought that the more formal interview was in itself an advantage, but six thought that the effect of the expected interview on the observation was a considerable advantage. Almost half of them admitted to having been surprised and informed by questions the student-teachers had (or had not) asked, and a similar number admitted to having had some difficulty in explaining aspects of their teaching that had become routine. There were no common criticisms of the student-teachers' questioning. While only two readily admitted having time problems in fitting in the interviews, most of the teachers revealed under pressure that they had had to use their lunch breaks or to cancel meetings or some such thing.

(V) Overall impressions

The disappointing aspects of the results were firstly the student-teachers' modest levels of success in implementing the recommended procedure and, secondly the limited extent to which they and some of the teachers were impressed by the distinctive possibilities inherent in the use of the procedure.

The results were encouraging in their confirmation of the effectiveness of the recommended procedure when it was used and in the suggestion they offered of an alternative route. That alternative arises from the finding that teachers who really understood the possibilities and value of articulating their craft knowledge were not dependent on the student-teachers' questions for doing so. We were sufficiently encouraged to maintain our view of the approach as a valuable one but, at the same time, to accept that we need to re-examine several aspects of the procedures, particularly the preparation of both students and teachers.

14. INSTITUTIONALISING THE PROPOSED PROCEDURES

Concurrently with the testing of the procedure with Scottish student-teachers, we were engaged in another kind of investigation of it in Oxford. There a radical new scheme for initial postgraduate teacher education was being undertaken, within which our concern that student-teachers should gain access to the practical classroom knowledge of experienced teachers was an important element, but only one element among many. In this section we describe our experiences of attempting to have the procedures we had developed implemented, not as an isolated experimental initiative, but as an integral part of the new scheme.

At the core of the thinking behind the new programme was the idea that the kinds of knowledge and understanding which different people could offer the student-teachers would depend crucially on the positions they occupied and, therefore, on the perspectives they would be inclined to take. Thus university curriculum tutors were well placed, and probably inclined, to stand back from the day-to-day minutiae of teaching and provide an overview of current practices within their curriculum areas. They were also more likely to be able to explain the rationales for innovative approaches in terms of theoretical understanding (of learning, teaching and curriculum knowledge, and of educational values) and review research evidence about teaching in the curriculum area. In contrast, school teachers working within the same curriculum area were well placed, and likely to be inclined, to offer a contextualised view of teaching in the curriculum area, emphasising the realities of the classroom, the diverse constraints within which teachers work, and the satisfactions of engaging with developing pupils.

Instead of regretting these differences of perspective, the programme was planned to capitalize upon them. To a large extent they would complement each other, and the programme was designed so that this would happen in a co-ordinated way. Sometimes, however, they might lead to conflicting conclusions. Student-teachers were encouraged to view any ideas, from whatever source they came, not as authoritative but as in need of testing; and it was emphasised that before an idea could be useful in any particular context it must satisfy a variety of criteria. Some of these criteria, such as practicality in terms of resources, skills and time available, should be most easily applied in the school context. Others, such as the educational values implicit in a proposal or its consistency with research evidence, would normally be easier to apply in a university context.

To sustain this approach, which implied that knowledge was to be acquired equally from both school and university sources and tested against the criteria emphasized in both perspectives, the programme for the greater part of the year involved students spending two days per week in schools and three days per week in the university. Throughout the year, the students-teachers (known as 'interns') were attached in pairs to the same school subject departments and especially to individual teachers (known as 'mentors') within these departments.

Within this overall framework, it was important that the student-teachers should gain access to the practical classroom knowledge of their mentors and of other teachers so that they could examine and test this knowledge for themselves against various criteria, and then, where appropriate, attempt to assimilate it to their own teaching repertoires. The procedure we had developed was outlined in the Programme Handbook, and introduced in the following way:

> It is through the observation of experienced teachers' lessons that interns can learn how teachers do things effectively. However, since experienced teachers tend to make skilful teaching look easy, it is not always possible for the interns to appreciate the complexities of classroom life simply by attending the lessons of experienced practitioners. Interns can develop a fuller understanding of a particular lesson if, following observation, they are able to discuss the lesson with the teacher. They 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 by her/him to bring them about, and the conditions that s/he has to take into account when deciding on the appropriateness of certain actions. The procedure outline below has been developed to enable interns 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 the interns being encouraged to make judgements.

The procedure was introduced to the interns in several two-hour meetings (each intern attending one meeting) during the two-week induction period in the university department. An oral presentation emphasised the contrast between interns' conscious and deliberate planning for teaching and teachers' routinised and largely hidden use of their practical knowledge. It also emphasised the importance and difficulty of gaining access to it. The oral presentation stressed the complexity of teaching and the skilled teaching which would usually underlie a straightforward looking lesson. The video-tape presentation was shown, written materials were distributed and there was considerable discussion of the procedures and their purposes.

Mentors had been introduced to the procedures and to the thinking behind them at a conferrence during the previous summer. They were now sent the materials which had been given to the interns and encouraged to use the procedure on a regular basis with them, perhaps once a fortnight. Curriculum tutors were also reminded of this agreed part of the scheme and asked to encourage the mentors in their areas (it being the curriculum tutors to whom mentors related most closely in the universtiy department) and their interns to use the procedure regularly.

One further point was important about the initial guidance given: interns were strongly encouraged to tape-record their post-lesson interviews with mentors or other teachers. It was mentioned that the members of the university staff who introduced the procedure would value the opportunity to listen to these tapes, in order to assess the adequacy of the advice we had given, but this was not offered as a major reason for tape-recording. 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 thad been said and to reflect on it. It was in these terms that the suggestion was explained.

The initial response of interns to the meetings about gaining access to practical knowledge seemed very positive both at the time and as judged from direct and indirect feedback later. It was with a growing sense of disappointment, therefore, that we gradually realised that the suggested procedure was being used very rarely; and this continued to be the case, despite informal encouragement in various ways, throughout the first half of the year. Our major task at this stage is, then, to understand why this was so.

Our first structured attempt at gathering evidence to help in this task was the distribution of a brief quetionnaire to interns early in the second term. An 84 per cent response rate was received, and few of the interns took up the explicitly offered possibility of returning the questionnaire anonymously. The first question reminded interns of the October meeting and offered five options about what they had done in relation to it.

None of the respondents chose the most negative option. 'I do not think I have been influenced in any way by the lecture in October'.

Seven per cent chose the response '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'. This option had been included because we had been receiving quite regular feedback from mentors about how sensitive the interns were in comparison with the student-teachers of previous years: few of them thought they knew it all or that there was little experienced teachers could teach them, they seemed to believe that they had a lot to learn, and were ready to be told what. Even if we accept the validity of this general impression, it would not be reasonable to believe that such attitudes had all stemmed from our introduction. Nor indeed was that important. What was important was that at least in this respect there was no barrier to interns' learning about teachers' practical classroom knowledge.

The dominant response, from 59 per cent of respondents, was 'I observed my mentor (or other teacher) and talked with him/her afterwards, but did not restrict myself to the kind of interview suggested'. A central fact is then that we had failed to persuade two thirds of the interns that they should try to adopt the kind of procedure we had developed.

A further 23 per cent responded that 'I have attempted to follow the procedure outlined. but I have not taped an interview', and 12 per cent reported that 'I have a tape of an interview with my mentor (or other teacher) following an observed lesson'.

Most respondents accepted the invitation to comment on their reasons for doing what they had done. Fifteen per cent of the comments indicated that the procedures or at least the ideas had been useful. 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. It was not clear in most cases 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: interns themselves said they considered taping unnecesaary or inappropriate, and that they preferred taking notes; mentors were reported as not liking to be taped; and there were practical problems like the need for a quiet room, the lack of a tape-recorder, or technical problems when recording was tried. In addition, several interns had been set specific tasks in relation to their curriculum programmes which involved taping conversations with their mentors, and they felt it would be unreasonable to ask for 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 procedure could be followed roughly in an informal way.

All of these problems are easy to understand and are indeed closely interrelated. In schools, teachers' free time, except for that timetabled with pupils, is not generally available in clear structured units; time is found while one is having coffee, preparing apparatus, moving along corridors, checking books or even during lessons. Given that that is the kind of time available, structured and disciplined conversations among adults are rare, and the kind of formalised interviews that we had suggested could be seen as alien to the culture of school life. The taping of such interviews could be perceived as exacerbating the alien formality.

It was significant that, although interns did attribute to mentors objections on several of these grounds, they more frequently attributed these objections to themselves. For the interns, a primary goal in the school context must be that of being accepted by teachers as a collegue, and their rejection of the recommended procedures on the grounds given surely reflects the internalisation of the culture of teachers which must be a necessary condition for such acceptance.

As yet, however, our understanding of what has been happening in the Oxford programme is based on the limited evidence of the questionnaire and on much fuller but unsystematic evidence from participant observation. This term we are engaged in extended interview studies to gain a fuller understanding of interns' and mentors' perspectives as a basis on which revised plans can be developed for 1988-89.

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15. INTERIM CONCLUSIONS

At this stage, our overall conclusions about this work must be rather tentative. We do have good reason to believe that the procedures we have developed for enabling student-teachers to gain access to teachers' practical knowledge are effective when they are used. We also have evidence to suggest an alternative: that teachers who have been very thoroughly inducted into a recognition of the nature and richness of their practical classroom knowledge can share that knowledge with student-teachers without the help of appropriate questioning. On the negative side, we know that it is not easy to persuade and enable student-teachers to use the procedures properly; and that within the normal context of school life the procedures can seem seen to student-teachers, and perhaps to their mentors, to be inconvenient and rather formal, and that sometimes there is a strong reluctance even to try them out.

Should we then accept this reality and abandon our efforts to enable beginning teachers to gain direct access to the professional classroom knowledge of the teachers with whom they work? We think not, because we believe that there are at least four ways in which we can usefully modify our approach without abandoning any of the essential features of the procedure which has been developed:

(i) First, we should recognise that we have placed too much of a burden on the student-teachers in expecting them, despite their low status, to be the main innovators. We should instead recognise the value of our finding that well inducted teachers can overcome the barrier of inadequate questioning to reveal their professional classroom knowledge. While student-teachers should be trained to ask appropriate questions about observed lessons, much more emphasis should be placed in mentors' understanding of the possibilities and of how these can be realised.

(ii) Instead of being a free-floating separate part of the teacher education programme, the procedures for student-teachers to gain access to their mentors' practical knowledge should be integral parts of the subject curriculum programmes jointly planned by curriculum tutors and mentors. Corporate discussion of how frequently and at what stage such observation and interviewing should occur is likely to be a necessary initial step in persuading mentors to give time to this; and the authoritative voice of the curriculum tutor will put added pressure on student-teachers. Our experience suggests that once the procedures have been effectively used, both mentors and student-teachers will generally be sufficiently motivated to continue their use.

(iii) In accordance with the general principles of the Oxford programme, the contextualised school-based element of this work should be complemented by a more generalised, abstract university-based element. Student teachers should be taught, on the basis of research findings such as those of the earlier stages of this project (Brown and McIntyre, 1988), about the general nature of experienced teachers' pedagogical expertise and about how such expertise is acquired. On one hand, such abstract knowledge should provide structures within which they can organise the specific examples of professional classroom knowledge which they learn from their mentors. On the other hand, they can individually test the validity of the research-based generalisations against the specific examples which they discover for themselves. The provision of these two complementary kinds of knowledge may help to overcome a possible problem that student teachers are uncertain about how to use the professional classroom knowledge that they discover. The more abstract framework should help them to store such knowledge until occasions arise when they can test its usefulness in their own teaching.

(iv) Finally, we should accept the implication of the school-based nature of this learning and experiment with a less formal use of the procedures. We do not imply by this any rejection of our concerns for questioning to be about the strengths of observed teaching, to be about specific events from the observed lessons, to be open, not imposing the students interpretations, and to be probing. It may be the case, however, that such questioning might be conducted effectively in informal as well as formal settings, if necessary in relatively brief conversations and sometimes mixed up with other kinds of conversations. We recognise that it is more important that the student-teachers gain access to experienced teachers' practical classroom knowledge than that this knowledge should be tidily set apart and distinguished from other knowledge.

If the interviews currently being conducted confirm or elaborate these tentative understandings and intentions, then programmes for the next academic year at Oxford will be designed to test their usefulness, and to discover what other problems we have to face.

Reference

Brown, S. and McIntyre, D (1988) The Professional Craft Knowledge of Teachers, Scottish Educational Review, special issue entitled The Quality of Teaching edited by Gatherer, W.A.

APPENDIX A

NOTES FOR STUDENTS

UNDERSTANDING, AND LEARNING FROM, THE TEACHING OF EXPERIENCED TEACHERS

There are things experienced teachers do routinely, and more or less spontaneously, everyday in classrooms which can be a source of anxiety to students or beginning teachers; e.g. dealing with problems of discipline, managing the work of the class, or motivating reluctant learners. In consequence, it is generally acknowledged among teacher educators that student-teachers have much to learn from watching experienced teachers in the classroom.

One problem for the observer, however, is that the more skilled the teaching, the easier it looks, and so the more difficult it is to identify which teacher actions are promoting success. Moreover, there is evidence from research that the perspective of the observer does not really lend itself to a clear understanding of what is taking place in a classroom and, on occasion, may even lead to misunderstanding.

What the observer needs in order to achieve a fuller understanding is a knowledge of how the teacher perceives what is happening in his or her classroom on any particular occasion.

This is more difficult than it sounds: the routine nature of everyday teaching, together with the way these routines have developed from the experience of teaching, does not make it easy for teachers to be articulate about what they are trying to achieve.

Our aim is to investigate how student-teachers can be helped to achieve a fuller understanding of what they see through discussion with the classroom teacher.

Accordingly, we are asking each student on two occasions, and with the teacher's prior consent, to follow up his or her observation of a lesson by interviewing the teacher. Each interview will take place on the same day as the lesson, and will be recorded on audio tape. The first interview will be followed later that week by a discussion with one of the researchers (Dr Brown or Dr McAlpine). The discussion will focus on what the student learned from the teacher interview, and on any changes of approach heor she might wish to make for the second interview.

The second interview will take place one or two weeks later.

SUGGESTIONS OF HOW AN INTERVIEW WITH A TEACHER MIGHT GO

1. You might start by asking the teacher to identify some aspect of his or her lesson which went well and gave him or her satisfaction.

2. You could then ask the teacher to tell you, in as much detail as possible, what actions he or she took to achieve these satisfactory things, and what led to the choice of that particular action.

3. You may also wish to ask the teacher to talk about something which interested you in the lesson; such as the way in which he/she kept the pupils interested, how interruptions or unexpected pupil behaviour were dealt with, or how the transition was made from one kind of work to another, and so on.

AND SOME DO'S AND DONT'S

4. Try not to go off the pioint. Your job is to seek information from the teacher, which means asking questions about what you saw in the classroom. 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. Remember that you are there to learn, and that the teacher is an important source of relevant information. You have to help him or her to talk about the ordinary everyday things that he/she usually takes for granted. Never be afraid of saying, 'Could you tell me a little more about that?'

   Example

   Student: Did you decide to do that on the spur of the moment?

   Teacher: Yes, I suppose I did.

   Instead of moving on at this point to something else, it would now be helpful to ask:

   Student: Can you tell me what made you decide to do that?

6. Try not to ask your questions in a generalised way (even although the teacher may answer in generalisations). It will be helpful to relate your questions to the particular lesson.

   Example:

   Student: What was it you did to encourage Martin to get on with his work?

   rather than

   Student: What do you do to encourage unwilling pupils to work?

7. Most teachers are not used to being interviewed about what they are doing, and why, and they may feel anxious about being asked to explain themselves. Try to 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 implications of what the teacher should/should not have done, and so have overtones of criticism.

   Examples:

   Student: Did you have a lesson plan?

8. Never ask 'Why didn't you ....?'

APPENDIX B
NOTES FOR TEACHERS

HELPING STUDENT-TEACHERS TO UNDERSTAND AND LEARN FROM THE TEACHING OF EXPERIENCED TEACHERS

The kinds of ordinary, everyday things which teachers do routinely and more or less spontaneously in classrooms, can be a source of anxiety to students or beginning teacher. Student teachers have much to learn 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.

In a recent research project, we have found that observers seldom understand all that is going on in a classroom and may, indeed, misunderstand if they are not thinking about the class and the teaching in the same way as is the teacher. A much fuller understanding is achieved, however, if there is an opportunity, following the observation, to discuss the lesson with the teacher. The teacher then has the chance to talk about the kinds of pupil activities and progress he or she is aiming to promote, the actions taken to bring these about and the conditions impinging on the teaching which have to be taken into account in deciding what to do.

We are keen to see if we can help student teachers to attain a fuller understanding of lessons through discussions with teachers as soon as possible after observing the lessons.

Our request to you is as follows:

To provide the student with two opportunities for a 10 to 15 minute discussion as soon as possible after observing one of your lessons. These discussions (but not the lesson) would be tape-recorded to give the students an opportunity to reflect on what they had asked you and on the information they had collected.

The focus of the discussions would be on the events of the observed lessons and might well relate to everyday classroom management skills: introducing the work of the day to the class, dealing with unexpected pupil behaviour or interruptions, maintaining or establishing relationships with particular pupils, the transition from individual to group work, beginning and ending a lesson, and so on. How the teacher perceived what went on is a crucial determinant of the discussion, but the student's needs will also exert some influence. In particular, students may ask focused questions about events they have observed, especially if the teacher seems to be particularly effective in some aspect of teaching about which the student has personal anxiety.

After the first observation and discussion, the students will have a meeting with a researcher to talk about what they had learned and about possible changes they might wish to make in their own approach. The second observation and discussion would take place one or two weeks later.

The aims of our work in the long term are to help student teachers:

- to gain a better understanding of what experienced teachers, whom they observe, are doing and how they achieve the things they are trying to achieve;
- to communicate more effectively with the experienced teachers about what is going on in the classroom;
- to develop their thinking about their own classrrom teaching by drawing upon the ways in which experienced teachers reveal to them their everyday practice.

We would be grateful for your help in our efforts to achieve these aims.