CLASSROOM TEACHING SKILLS

Edited by E.C. Wragg

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Classroom Teaching Skills

The Research Findings of the Teacher Education Project

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PREFACE

This book describes some of the research undertaken during the Teacher Education Project, a 4½-year research and development project funded by the Department of Education and Science, during which we observed over 1,000 lessons, interviewed more than 200 experienced and novice teachers, and developed sets of teacher training materials which were piloted and then published.

During the project we concentrated in particular on the development of teachers' professional competence, especially class management and control, the teaching of mixed-ability groups and the skills of explaining and questioning. Since the project was concerned both with research and development, the time and energy of the tutors and teachers involved was divided between both kinds of activity. The workbooks and other training materials produced during the project are listed in Appendix A.

The chapters in this book describe some of the empirical work undertaken in what became one of the largest studies of teaching skill based on the direct observation of secondary school lessons, ever undertaken in Britain. Even so, we were only able to scratch the surface of the vast and complex matter of studying and nurturing skilful teaching.

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We are grateful to the National Society for the Study of Education for permission to reproduce Figure 2.1 on page 22.

In addition, we should like to express our sincere thanks to Pip Davis, Dick Madelin, Ned Colman and several others who assisted with data collection, Madeleine Atkins who commented on Chapter 5, countless colleagues at the Universities of Nottingham, Leicester and Exeter in particular, and in many other universities, colleges and polytechnics who collected data, tried out materials or commented on drafts, as well as hundreds of pupils, teachers, students, heads, advisers, Her Majesty's Inspectors and others who allowed themselves to be watched, interviewed or experimented with. Finally, our thanks are due to Tricia Bisley and several other typists who typed observation instruments, test materials, interview schedules, lesson reports and the manuscript of this book.

1 TEACHING SKILLS

E.C. Wragg

A Time for Skilful Teaching

Teachers have always been required to have professional skills, but there can have been few periods in our history when they have needed to display the degree of competence required in the uncertain world of the 1980s. In the nineteenth century training institutions were known as 'normal schools', on the grounds that there was some single 'norm' endorsed by society. The function of a training establishment was to perpetuate this stereotype, and the Master of Method was employed in the model school to ensure that each new generation of teachers was poured into the same approved mould (Rich, 1933). Today there are several factors which combine to require levels of skill, understanding, imagination and resilience from teachers which go infinitely beyond the rudimentary commonsense and mechanical competence fostered by the normal schools of the last century.

The massive explosion of knowledge gathering during the last 50 years has produced banks of data in such profusion that no human being is now capable of grasping more than the tiniest fraction of their contents. There are examples of computer-stored research data, such as the Lockheed Dialog system, which contain research reports in over a hundred fields, and the largest files in subjects like chemistry can disgorge in excess of 2½ million abstracts.

It is not only in the pure and applied sciences that this expansion has taken place, but also in many areas of human endeavour including the humanities, with thousands of new published books and articles in many fields being added each year. In addition to this formidable advance in the discovery of new information there has been a considerable development of new skills. Transplant surgery, for example, unknown only a few years ago, has become a standard part of many surgeons' professional armoury.

The implications for teachers of these rapid developments are clear. Given the tradition of localism in England and Wales, whereby individual schools have a considerable degree of freedom to devise their own curricula and teaching strategies, albeit subject to the scrutiny of

their local authority, teachers need considerable skill to select topics, activities and ways of working from the vast array of possibilities. Furthermore, since their pupils can also acquire only a tiny fraction of the knowledge and skills currently available to humanity, teachers must develop teaching strategies which not only transmit information, but also encourage children to learn independently and as a member of a group. Although no committee would ever have composed Beethoven's Fifth Symphony, it is also unlikely that any individual could have sent a rocket to the moon. A great deal of human achievement will in future be the result of teamwork.

Alongside the demands placed on teachers by the expansion of knowledge and skills are those caused by the significant social changes in recent years which are taking place on a scale unparalleled in any period other than wartime. During the 1970s one million jobs disappeared from manufacturing industry in Britain, and another million had been obliterated within the first two years of the following decade. Most were unskilled and semi-skilled forms of employment which will probably never return.

Faced with youth unemployment on a large scale, many teachers, especially in inner-city schools, find that traditional forms of motivation, such as urging pupils to work hard at school so that they will obtain a good job, no longer have the appeal they once enjoyed. Disaffection over the apparent futility of learning reported by numerous adolescents offers another formidable challenge to the professional ingenuity of the teacher.

Employers, meanwhile, able to erect artificial barriers when applicants for jobs vastly exceed the actual vacancies, may require O levels for jobs previously taken by the less well qualified, A levels where O levels were once sufficient, and a degree in what was formerly a non-graduate profession. This spiralling demand for qualifications puts yet more pressure on teachers to use their skills effectively during the eleven compulsory years of schooling, or whenever else they have contacts with people who need to learn. In our increasingly technological and bureaucratic society those who leave school under-educated, for whatever reason, are at risk, likely to be unemployed, or fall victim to loan sharks and the other predators in society.

The more optimistic scenario, that labour will shift out of the factory and into the leisure industry, that people will have more free time in future and be relieved of the tedium of monotonous jobs, that early retirement will give a boost to community and life-long education, is no less demanding on teachers' skills. To enjoy leisure adults must

have learned how to use it fruitfully, to be willing to learn throughout their lives it helps if they have been enthused rather than rebuffed and demoralised in school. The quality of personal relationships between teacher and taught, therefore, is a direct result of the interpersonal skill of the teacher, who usually sets the tone in a class, or has to take the initiative to improve relationships should they go awry. A notion of teaching skill that embraced only the transmission of knowledge would be a poor one in such a context.

A third factor to be considered is the development of new technology such as the micro-computer, forms of teletext such as the Prestel system, direct broadcasting by satellite and cable television. One important feature of some of the more recent forms of technological development is that the micro-computer, Prestel and cable television in particular, offer an interactive facility on a scale not previously available, changing the position of the teacher as the single authoritative initiator of or respondent to enquiry. Such developments test the flexibility and adaptability of teachers, who need to be able to modify their teaching styles to accommodate some at least of the many new developments which have a potential to improve learning.

A fourth factor requiring some degree of attention to improving teaching skill occurs as a consequence of the rapidly declining school rolls during the 1980s, especially in the secondary sector. The birth-rate fell dramatically from its 1964 peak until the end of the 1970s, and it was known in 1980 that for every four children in a primary school there would be only three by 1986, and that for every three pupils in a secondary school there would be only two by the end of the decade.

In inner-city and some rural areas the decline in pupil numbers has led to school closures and a loss of morale amongst a teaching profession used to extrinsic rewards, such as rapid salary and status improvements during the period of expansion of the 1950s and 1960s when the teaching force doubled in size. One way to reduce, if not avoid, falling morale when promotion prospects are less in evidence than they were formerly, is for teachers to take pride in honing their professional skills, and a number of in-service courses in recent times, especially certain school-based ones, have attempted to facilitate professional development and self-appraisal for experienced teachers. This theme will be taken up again in Chapter 10.

The 1983 White Paper *Teaching Quality*, though it did not give detail about all the factors mentioned above, recognised the importance to our society at its present state of evolution of having a highly skilled force of professional teachers who are able to nurture and facilitate

learning for the next generation, as well as for adults who wish to continue their education. It was decided in the Teacher Education Project to study certain significant aspects of a number of skills displayed by teachers, and to develop training materials which would reflect what was learned from observing experienced practitioners, as well as stimulate trainee and experienced teachers to analyse and determine their own strategies.

Identifying and Defining Teaching Skills

There is less dissent about what constitutes effective teaching in discussion between people outside the profession than there is in the research and evaluation literature. Good teachers, it is commonly held, are keen and enthusiastic, well organised, firm but fair, stimulating, know their stuff, and are interested in the welfare of their pupils. Few would attempt to defend the converse: that good teachers are unenthusiastic, boring, unfair, ignorant, and do not care about their pupils.

Once the scrutiny of teaching is translated into the more precise terms demanded by the tenets of rigorous systematic enquiry, the easy agreement of casual conversation evaporates. The books and articles on effective teaching are numerous, and Barr (1961) summarising a massive amount of American research, concluded, 'Some teachers were preferred by administrators, some were liked by the pupils, and some taught in classes where there were substantial pupil gains, and generally speaking these were not the same teachers.' Biddle and Ellena (1964), reporting the Kansas City role studies, found that there was not even clear agreement amongst teachers, parents and administrators about the role teachers should play.

More recently, even the attempts to see consensus in the research literature have been criticised. For example, Gage (1978), summarising research studies which had attempted to relate teaching style to children's learning, concluded that in the early years of schooling certain kinds of teacher behaviour did show some consistent relationship to children learning reading and arithmetic. From this he derived a set of prescriptive 'Teacher should' statements, like 'Teachers should call on a child by name before asking the question', 'Teachers should keep to a minimum such activities as giving directions and organizing the class for instruction', or 'During reading-group instruction, teachers should give a maximal amount of brief feedback and provide fast-paced activities of the "drill" type'.

Critics of such prescriptions argue that much of the American research is based on short-term memory tests, that formal didactic styles of teaching appear to be more successful, and could too easily be perpetuated as the best form of teaching. Longer-term objectives which teachers might have are less frequently measured, so that the music teacher who hopes that children will have a lifelong interest in music is less likely to be investigated than the one who merely wants children to recall sonata form or define a triad in a short memory test.

There was once an interesting experiment at the University of Michigan which illustrates neatly the dilemma of trying to elicit what forms of teaching are most effective. Guetzkow, Kelly and McKeachie (1954) divided first-year students on a general psychology course into three groups. The first group was given a formal lecture course with regular tests, the second and third groups were based on tutorials and discussions. At the end of the course the lecture group not only outperformed the tutorial discussion groups on the final examination, but was also more favourably rated by the students. So far this represents a victory for lecturing and testing on two commonly used criteria: test performance and student appraisal.

The investigators discovered, however, that the students in the discussion groups scored significantly higher than the lecture groups on a measure of interest in psychology, the subject being studied. They hypothesised that though the lecture-group students gave a favourable rating of the teaching they had received, this may have been because they had less anxiety about grades for the course through their weekly feedback from test scores. It was decided to monitor the subsequent progress of all the groups. Three years later not one student in the lecture group had opted to study the subject further, but 14 members of the two discussion and tutorial groups had chosen to major in psychology. Thus, on short-term criteria the lecture method was superior, but taking a longer perspective the discussion method appeared to motivate students more powerfully, and ultimately some must have learned a great deal more.

Defining teaching skill in such a way that all would agree, therefore, is not a simple matter. If we were to say that teaching skills are the strategies teachers use to enable children to learn, then most people would want to rule out intimidation, humiliation, the use of corporal punishment or other forms of teacher behaviour of which they personally happen to disapprove. It is perhaps easier when seeking a definition of teaching skill to describe some of the characteristics of skilful teaching which might win some degree of consensus, though not

universal agreement.

The first might be that the behaviour concerned *facilitates pupils' learning of something worthwhile*, such as facts, skills, values, concepts, how to live harmoniously with one's fellows, attitudes or some other outcome thought to be desirable. A second quality could be that it is *acknowledged to be a skill by those competent to judge*, and this might include teachers, teacher trainers, inspectors, advisers and learners themselves. We shall see in Chapter 4 that pupils can be shrewd in their appraisal of the teacher's craft, and that the ability to explain is often highly rated by them.

For it to be a recognised part of a teacher's professional competence the skill should also be *capable of being repeated*, not perhaps in exactly the same form, but as a fairly frequent rather than a single chance occurrence. A chimpanzee might randomly produce an attractive colourful shape once in a while given a brush and some paint, but an artist would produce a skilfully conceived painting on a more regular basis. Teachers who possess professional skills, therefore, should be capable of manifesting these consistently, not on a hit-or-miss basis.

One frequently cited observation on skills is that of the philosopher Gilbert Ryle (1949) who distinguished, in his book *The Concept of Mind*, between being able to state a factual proposition and perform a skilful operation. The difference between knowing *that* and knowing *how* is the difference between inert knowledge and intelligent action. Unfortunately, some competent teachers are not especially articulate about their skill, and it would be a mistake to assume that it is a prerequisite for skill only to be recognised as such if the person manifesting it is capable of explaining and analysing it in textbook language. The intelligence of an action may perfectly well be explained by another, and the behaviour is not necessarily unintelligent or shallow if its perpetrator is tongue-tied about it.

One problem encountered in defining teaching skills is that though in some contexts the term 'skill' has good connotations, attracts adulation, is a gift of the few, the result of years of practice or the mark of an expert, in other circumstances it is looked down upon, regarded as mechanical, the sign of a rude technician rather than an artist. We tend, for instance, to admire a surgeon's skill or that of a tennis player. Both may have had the same years of dedicated practice, but the intellectual nature of the knowledge and understanding required by the surgeon is vastly more exacting than that required by a sportsman.

Where the imagination is involved, even more fine distinctions exist. A sculptor would probably be disappointed to read a report that

describes his latest masterpeice as a piece of skill. He would expect eulogies to contain words like 'artistic' and 'creative'. For those who liken teachers more to expressive artists than to surgeons, the very term 'skill' may be seen as belittling, reducing creative endeavour to mechanical crudity. It is difficult to dry-clean the term of these emotional associations with other kinds of human enterprise.

This uncertainty about the proper standing of the notion of skill when applied to teaching is partly explained by the varied nature of the teacher's job. Pressing the right button on a tape recorder, or writing legibly on the blackboard require but modest competence, and are things most people could learn with only a little practice. Responding to a disruptive adolescent, or knowing how to explain a difficult concept to children of different ages and abilities by choosing the right language, appropriate examples and analogies, and reading the many cues which signal understanding or bewilderment, require years of practice as well as considerable intelligence and insight. Although the term 'interpersonal skills' is now quite widespread, there is still some reluctance to classify human relationships in this way.

When children learn something there is often a magical quality about the excitement of discovery, the warmth of regard between teacher and taught, or the novelty to the learner of what is taking place, and the romanticism seems to be destroyed if teaching is seen as too deliberate, calculated, manipulated or over-analysed. Hence the debate, to which I shall return in Chapter 10, about learning to teach and whether the act of teaching should be seen as a whole or is at all capable of being separated into discrete if interrelated skills. My own view is that the extreme optimism of the supporters of the so-called Performance or Competency-based Teacher Education programmes fashionable in the United States during the 1970s was misplaced.

It was assumed that teaching would be broken down into hundreds and indeed thousands of particles, that trainees could learn each of these, and that they could be certificated on the basis of their proven ability to manifest whatever set of competencies had been prescribed. Lists of approved competencies were produced, such as the 1,276 compiled by Dodl (1973) under the heading *The Florida Catalog of Teacher Competencies*, and hierarchies were assembled with the skills required given a level. Thus, an operation by the teacher like 'form reading groups and give a good rationale for the grouping' was seen as being at a lower level than 'implement managerial procedures for efficient group operation'. There was an arbitrary quality to some of these hierarchies, and competency-based teacher education was criticised

by writers such as Heath and Nielson (1974) for not being founded on any sound empirical evidence.

In selecting skills for study and development in the Teacher Education Project, we were conscious that the sustained debate about teaching itself and the education and training of teachers has not crystallised around any single viewpoint. Teaching and studying minute facets of behaviour like 'smiling' can soon become comical and divorced from overall reality, and at the other extreme constant denial that there is anything other than some global notion of 'teaching' which is sacrosanct, ethereal and must not be subjected to scrutiny, simply produces paralysis. The areas on which we chose to focus, class management, mixed-ability teaching, questioning and explaining, seemed, according to the tenets described above, to represent activities which required skill, intelligence and sensitivity from teachers. They were not so vague as to defy any analysis, nor so minute and piddling as to be silly. They were aspects of teaching thought by experienced professionals to be important both for experienced and trainee teachers. By studying these four aspects of teaching we inevitably left unstudied many other central skills, and even though we observed and analysed a large number of lessons we could still only hope to make a modest contribution to the understanding and nurturing of the teacher's professional art and craft.

Classroom Observation

Up to the late 1950s there were very few examples of research on teaching which had used direct observation of lessons. Many inferences about classroom life were drawn from interviews, questionnaires or from folklore, anecdotes and hearsay. During the 1960s and 1970s this situation changed rapidly, and hundreds of reports were published ranging from case studies of a single classroom to large scale observations of practice in hundreds of lessons.

There is not the space here to document the many forms of enquiry which have been undertaken nor the thousands of 'findings' reported in the literature around the world. These are in any case to be found in several standard reference books such as that by Dunkin and Biddle (1974), Delamont (1976), Wragg (1976), Cohen and Manion (1981) and many others.

There are considerable advantages and a few disadvantages to studying classrooms by observing what happens at first hand. The major

disadvantage is that the presence of an observer invariably has an effect on what takes place, however slight, and there is no foolproof way of knowing what might have transpired had no outsider been there. Samph (1976) planted microphones in classrooms and then sent observers either announced or unexpected some weeks later. He found that teachers made more use of questions, praise and were more likely to accept pupils' ideas when someone was present. Teachers and indeed pupils may attempt to provide what they think the visitor expects, and this will vary according to the impression or stereotype they form of the observer concerned. They may be irritated by a visitor and behave differently from normal, hence the need for observers, where possible, to study a series of lessons rather than a single one.

Several traditions of observing classrooms have been developed. In the United States the great majority of published classroom studies have been based on a degree of quantification, often using some kind of category system. This tradition dates back to the attention studies of the 1920s and 1930s reported by Jackson (1968), and even earlier. It gained in popularity during the 1950s and 1960s, especially after the seminal article by Medley and Mitzel (1963) describing how to construct category systems. Some of the work is closely related to behaviourist learning theory; other studies attempt to relate measurements of the frequency of certain kinds of behaviour to tests of pupil learning or other estimates of outcome.

Since the hope of this kind of research was to establish a body of knowledge which would show some consistency about what successful teachers do, several writers have attempted to establish theories of teaching and learning based on systematic empirical enquiry. Techniques such as meta-analysis (Glass, 1978) have been developed which aggregate quantitative studies based on correlation coefficients, chi-squares, or analysis of variance, and determine an overall effect size. Thus, it is possible to calculate from several studies the average relationship between, say, the teacher's use of praise and pupils' learning. Although the apparent neatness of such an aggregation may appeal to some administrators looking for guidance from research, the proposition that fairly exact relationships can be discovered between what teachers do or are, and what pupils learn, has been criticised by several writers. Jackson (1962) described the findings of half a century of study on the relationship between teachers' personalities and pupil learning as 'so low in intellectual food value that it is almost embarrassing to discuss them.' Typically, small but significant correlations of around 0.2 or 0.3 have been commonplace, leaving a great deal still

unexplained.

The more carefully conducted quantitative analyses of teaching have nevertheless yielded some useful and interesting information, even though much less has been delivered than was once hoped. For example, the extremely busy nature of the teacher's job is now well documented. Teachers may have up to 200 days a year with their classes, and various studies have shown over 1,000 interpersonal exchanges in a day (Jackson, 1962), teachers asking on average 348 questions a day (Floyd, 1960), some in inner-city schools spending up to 75 per cent of their time trying to keep order (Deutsch, 1960), or teachers allowing on average one second between a pupil answer and their own next statement (Rowe, 1972). It is quite clear that in the course of the millions of exchanges in which teachers may engage during quite a short phase of their career, they can find little time for a leisurely scrutiny of classroom processes.

Consequently, many teachers develop fairly fixed patterns of teaching which may well be laid down at the training stage. When new curricula, school reorganisation or other changes in circumstances come along, it is difficult to unlearn habits and strategies which have been rehearsed millions of times, even if they are no longer appropriate. Hence the criticism in Her Majesty's Inspectors' (HMI) reports of too much whole-class teaching with mixed-ability classes, or the difficulties experienced by teachers trying to use a fresh work scheme with old teaching methods.

Alongside these many quantitative studies has been a different style of enquiry based more on the pencil and notebook tradition used by anthropologists seeking to analyse human behaviour by recording phenomena in detail, and then inviting participants to explain them. Sometimes the investigator is also a participant, as in the case study by Hamilton (1975) of the introduction of integrated science teaching in two Scottish schools, sometimes a non-participant, like King (1978), who documented practice in three infant schools, and deliberately avoided becoming enmeshed in the life of the classrooms in which he spent many hours.

Incisive ethnographic accounts of classrooms often give intimate case details and interpretations which some of the quantitative accounts might have missed. The observations made in lessons by Ball (1981), who recorded how a ten-form-entry comprehensive school changed from a system of broad banding to one of mixed-ability classes, are quite close in tenor to those reported in the 1978 HMI paper on the same topic, which was based on evidence from the classrooms of several

schools. The strategies employed by teachers of different subjects, the arguments underlying their behaviour and the reaction of pupils, however, are all described in much greater detail through the single case study.

Lacey (1970) taught twelve lessons a week himself, and spent another twelve lessons a week observing teachers and their classes in his study of Hightown Grammar. The result is an analysis of teaching and a description of individual pupils and teachers that set classroom processes in the wider context of the school in its social environment. A similar depth and breadth of insight was offered by Hargreaves (1967) in his study of Lumley Secondary Modern School.

In addition to the two major styles of enquiry there has been other research into teaching based on different procedures and traditions. Blurton Jones (1972) brought together a collection of research reports based on the ethological techniques used by students of the behaviour of animals, and Barnes (1971), Stubbs (1976) and Edwards and Furlong (1978) are amongst several investigators who have undertaken linguistic analysis of classroom transactions. Though verbal aspects of teaching and learning have commanded attention from researchers, increasing interest has been shown in non-verbal aspects of classroom communication by, among others, Argyle (1967), Knapp (1980), and Wilkinson (1975), the last of whom combined a variety of techniques for analysing both verbal and non-verbal behaviour.

Studying teachers and pupils by direct observation of what they do and say provides valuable information on which to base judgements about skilful teaching and intelligent action. There are many observation procedures from which to choose, each with their supporters and practitioners. It is a pity that the debate between proponents of various schools has occasionally been acrimonious. Attempting to decide whether, for example, quantitative studies are better than qualitative ones, is about as fruitful as trying to determine whether a black and white photo of the front of the building gives a more true representation of reality than a painting of the rear, a scale drawing or an aerial photograph, or, for that matter, whether bacon and eggs beats fish and chips.

Carefully undertaken studies of various kinds with their different ways of gathering data and explaining phenomena can enhance our understanding of teaching and learning. We decided in the Teacher Education Project that we needed to observe lessons at first hand as well as use other methods of acquiring information. This was not so that students or experienced teachers might merely copy current

practice, in the tradition of the nineteenth-century normal school, but rather that we might add a little to what is known about classroom processes to help inform those who seek to improve their teaching or that of others, however improvement may be defined. We also decided to use a mixture of research methods rather than a single style of enquiry. Thus, some studies are highly quantified; others are more qualitative; yet others a mixture of both. In the chapters of this book are some of the inferences drawn from the observation of over 1,000 lessons given by teachers and students.

The Teacher Education Project

The Teacher Education Project was a 4½-year research-and-development project conducted at the Universities of Nottingham, Leicester and Exeter, and funded mainly by the Department of Education and Science (DES). Our principal intention was to undertake research and develop training materials which would help nurture the skills needed for class management, mixed-ability teaching, explaining and asking questions. There was no intention to produce a course as such, but rather to devise materials and ways of working which might help shift the balance of teacher training courses more in the direction of the development of professional skills for the reasons given earlier. A list of the teacher training materials we produced is given in Appendix A.

The project had only enough finance for one full-time appointment over the 4½-year period, that of Trevor Kerry the co-ordinator, and later for two years Kay Wood as a full-time researcher. Such was the enthusiasm of a number of teacher trainers and teachers, however, that we managed to obtain help from over 40 people during the life of the project, some conducting a single case study or a few interviews, others analysing transcripts, observing lessons or undertaking more substantial and sustained pieces of enquiry. There is a considerable curiosity about teachers' skills amongst teachers themselves and teacher trainers, and it is not difficult to capitalise on it.

When we began the project in the late 1970s there had been a decade of reports, comment and criticism of teacher training, as well as ten years of dramatic changes in schools, with comprehensive reorganisation, the raising of the school leaving age, major curriculum packages in most subjects, the spread of mixed-ability teaching and an increase in size and complexity of many schools. Teacher training had made some changes but not as many as critics like Dent (1971) would have

liked:

> What they [the colleges] did not do, even in this period of extensive and intensive change, was to alter the basic pattern of teacher education. Despite all the modernisation and liberalisation that have occurred over the past century and a half, the 1814 pattern has persisted. Nearly everyone says it must be changed. One hopes the change will be for the better.

In Post-graduate Certificate of Education (PGCE) courses most of the recruits during the 1960s had entered grammar schools and were being trained by former grammar school teachers. As comprehensive reorganisation spread during the 1970s, the story changed rapidly. Nottingham University School of Education, with 250 students, illustrates the speed of this transformation. Around 1971 some 80 per cent of students undertook teaching practice, and subsequently obtained posts in grammar schools. By 1976 an analysis of posts obtained showed that over 80 per cent had done their teaching practice in comprehensive schools, and a similar percentage took their first post in such a school.

Thus tutors who themselves had taught only the most able found their students complaining about inadequate preparation for mixed-ability teaching, the use of workcards, teaching the less able or the very bright, handling difficult classes and the kind of assessment and record-keeping necessary when classes are of very heterogeneous ability and possibly engaged in individual or group tasks. The need for reform, the generation of good ideas and some research base for these was becoming crucial.

Although we began as a PGCE project, it was not long before considerable interest was being shown by tutors on BEd courses, particularly those planning submissions to the Council for National Academic Awards (CNAA). The story here was similar, but with some important differences. In some colleges strict demarcation existed between so-called 'subject' departments and 'education'. Many colleges were beginning to develop some kind of 'professional studies', but often the territorial problems were such that no-one could be sure at what points in the course and by whom students should best be taught professional skills.

Some college education departments were still set up on the foundation disciplines of sociology, psychology, history and philosophy. Subject departments meanwhile concentrated on the high level of

subject knowledge required by the new BEd degrees. Students often complained that teaching skills were neglected, and one National Foundation for Educational Research (NFER) study by James and Choppin (1977) which polled 519 would-be teachers at the school level, found that even they, as yet uncontaminated by a training course, expected it to be more theoretical than they would like. In its extreme form a very bad professional training course in the early to mid-1970s was the medical equivalent of training surgeons by first giving them lectures on the sociology, psychology, history and philosophy of surgery, giving them each a scalpel and a few patients, and turning them loose in operating theatres with the hope that they would make sense of it all whilst engaged in the actual process. Next of kin would not have been too pleased.

We had no quarrel at all, it should be said, with the notion that student teachers should study such important aspects of education as sociology or psychology. It was rather that we felt first of all that study by itself did not necessarily make students operational in the classroom, and secondly that when students analyse classroom processes and work at their teaching skills, they become much more highly motivated to learn the kind of educational theory that informs practice. An inductive approach based on students' own professional experiences raises every conceivable issue in the traditional disciplines: how children learn, or fail to learn, what the purposes of education are, how factors in school and society affect learning, who holds power and how it may be used or misused, which teaching strategies are appropriate in what context, devising and evaluating a curriculum and a host of others.

Before long we discovered that the appetite of experienced teachers for information about and further training in teaching skills was just as voracious as that of trainees. An article in the *Guardian* (Wragg, 1978) about the project's research into class management, which described 56 case studies of student teachers thought to be good or poor at handling their classes, produced over a thousand requests for the trial version of a training booklet. Over half of these were from experienced teachers, heads, deputies, teachers' centre wardens or professional tutors. Many told the same story: that their own or their colleagues' training had contained little on professional skills, and that there was considerable demand from teachers, particularly those engaged in school-based in-service work, for suggestions about how they could learn to scrutinise and improve their own teaching skills. When the first set of training booklets, the FOCUS series, was published by