

I N T R O D U C T I O N

This study dealt with the effect of practice on the acquisition of teaching skills within a microteaching setting. Many writers (McDonald, 1973; Brown, 1975) saw such teaching skills as analogous to motor skills and consequently practice of the skills was seen as a necessary factor in their acquisition. However, other research by Wagner (1973), Freyberg, Katterns and Rogers (1974), Batten (1978) and Gliessman, Pugh and Bielat (1979a) suggested that practice may not be necessary for the acquisition of teaching skills. Further, developments in theorising about microteaching, by such writers as Fuller and Manning (1973), Bierschenk (1974) and MacLeod and McIntyre (1977), seemed to suggest that teaching skills might best be conceptualised as cognitive rather than behavioural.

Evidence as to the effectiveness or effects of practice remains inconclusive and so the initial aim of this study was to investigate two comparisons. First, to compare the effects of practice with the effects of cognitive discrimination training. Second, to compare the effects of a microteaching session with a subsequent microteaching session. Both comparisons were made using two teaching skills. The skills were Variation and Higher Order Questioning and the effects of the treatments were assessed on two criteria, students' performance scores and their attitudes.

Further aspects of the study included an examination of two themes which allowed for an elaboration and a deeper understanding of the results of the comparisons of the experimental treatments. First, students' concept acquisition test scores were used as a criterion to assess the effect of cognitive discrimination training. Of particular interest was whether concept acquisition test scores differentiated between students trained in discrimination training and those who were not trained. Second, the possibility of a positive relationship between concept acquisition test scores and performance scores was considered. Two studies (Gliessman, Pugh and Bielat, 1979a,b) that have previously considered this achieved mixed

results. Yet it seems plausible that, given an assumption of a cognitive conceptualisation of the process of skill acquisition, such a positive relationship may exist.

In conjunction with the testing of the hypotheses and the examination of the themes, consideration was also given to whether teaching subject area differentiated between both performance scores and concept acquisition test scores. Some indication of the possibility "that students' use of...skills appears to be closely related to subject ideologies" (MacLeod and McIntyre, 1977, p. 280) has already been hypothesized. However, this relationship has not been verified in the literature and it was not clear to what extent the consideration of students grouped in terms of their teaching subject areas differentiated between other aspects such as concept acquisition test score results.

Chapter 1 describes the introduction of microteaching and its development at Stanford University as a background to the present 'state of the art' in microteaching. The emerging nature of microteaching is then discussed and research related to the effectiveness of the technique is reviewed.

The review of aspects of the research literature in Chapter 2 evolves out of discussion of the effectiveness of the microteaching technique and gives particular attention to the preparation and practice phases of microteaching. In the preparation phase, research related to modelling and discrimination training is reviewed. In the practice phase, the role of practice is questioned. Following this, several frameworks which are considered to underlie microteaching are described and discussed. The chapter concludes by drawing together some of the issues that have emerged previously and expresses them initially in the form of several general research questions. These are then framed in terms of hypotheses to be tested and themes to be investigated.

Chapter 3 describes the experimental design of the study. It begins with a brief outline of the teaching programme within which the study was carried out and discusses how the constraints imposed by this

programme restricted the possible research design, but also allowed for several advantages which could only occur within an ongoing teaching programme. The second section considers the participants involved in the programme as well as the teaching materials and the research instruments used. The third section evaluates the design and describes how attempts were made to minimise extraneous variables. The final section briefly outlines the data analysis plan to be followed in the next three chapters.

Chapters 4, 5 and 6 present the results of the study, as well as a full analysis and discussion of these results. Chapter 4 investigates, primarily, the possibility that concept acquisition tests influence subsequent performance scores and attitudes. Chapter 5 considers the four hypotheses related to student performances and attitudes, while Chapter 6 investigates the two themes described earlier.

The final chapter considers the research in terms of the possible limitations of the study. A general summary of the results is then presented. Finally, consideration is given to some implications of the results, first for the acquisition of teaching skill competencies, second for a cognitive model of microteaching, and third for further research.

Chapter 1

A N H I S T O R I C A L P E R S P E C T I V E**Introduction and Organisation of Chapter**

Microteaching is a scaled down but realistic classroom training context in which teachers, both experienced and inexperienced, may acquire new teaching skills and refine old ones.

(McKnight, 1979, p. 1)

Although many educators and researchers would probably argue about describing microteaching as "realistic", this issue has not hindered research into, or use of, the technique. Microteaching has been subjected to intense scrutiny for over 20 years and it continues to be a significant element in the programmes of the majority of teacher training institutions in the western world.

To develop a framework for the present study this chapter considers, under three main sections, the development of microteaching from an historical perspective. Initially, the Stanford programmes in the early 1960s are focused on and then the growth of and emphasis on microteaching in the seventies are considered. Finally, associated with these developments, research related to the effectiveness of the microteaching technique in this 20 year period is reviewed and discussed.

THE STANFORD PROGRAMMES

This section is divided into two parts. The first, Early Developments, considers the initial attempts to define microteaching, the role of television and technical skills, and the rationale behind the microteaching technique. The second, Overview of Early Programmes,

considers the programmes of the middle and late sixties conducted at Stanford University. The major elements which constituted the Stanford programmes are detailed, as are the research trends evident during this period. Finally, criticisms of both the research and the programmes are discussed.

Early Developments

Microteaching was developed at Stanford University in 1963, with support from the United States Office of Education and the Kettering Foundation, as a reaction to the observed shortcomings of that University's pre-service teacher education programme (Berliner, 1969). More specifically, it was devised under the leadership of Professors Allen, Bush and McDonald, to bring the two major aspects of the existing programme, namely, theory and practice, closer together (Allen and Ryan, 1969; Cooper and Allen, 1970). As with most conventional teacher training courses at the time, the theoretical aspects were supposed to underline the basis of practice, but in truth, the situation of "theoretical discussion followed by trial by fire" (Bush, 1968, Preface) appears to have been a more appropriate descriptor, or, as Brown (1975a) later commented, students believed "college was where you learnt about education and schools were where you learnt about teaching" (p. 71).

Whilst there were some minor disagreements initially as to the realism of the microteaching model (Allen and Ryan, 1969; Cooper and Allen, 1970), some consensus regarding the procedures which constituted microteaching emerged (Allen and Ryan, 1969; Olivero, 1970; Ward, 1970). One early definition was that microteaching is a "scaled down teaching encounter in class size and class time" (Allen, 1966a, p. 1), and in a later, more detailed definition by Bush microteaching was described as

a teacher education technique [which] allows teachers to apply clearly defined teaching skills to carefully prepared lessons in a planned series of five to ten-minute encounters with a small group of real students, often with an opportunity to observe the results on videotape.

(Bush, 1968, Preface)

Other descriptions of microteaching appeared in the literature but they generally focused on the perceived differences or similarities between microteaching and classroom teaching. Allen (1966b) saw microteaching as "a realistic approximation to classroom conditions" (p. 355) and later as "real" teaching (Allen and Ryan, 1969), whereas Bjerstedt (1968) referred to "structural realism". An alternative position to this point of view came from McAleese and Unwin (1971) who believed microteaching is best viewed as a form of "simulated teaching" or as a "*simulation* of the real teaching encounter" (McAleese, 1973, p. 131) which usually incorporates reduced complexity and some use of feedback placed "along a simulation spectrum ranging from the purely abstract text book of teaching practice through to actual classroom teaching" (McAleese and Unwin, 1970, Preface). Jensen and Young (1972) also supported this view and spoke of microteaching as "televised simulated instruction". Batten (1978) saw that these differences in descriptions "merely reflected different purposes and resources of the user, and overall the format developed at Stanford for the microteaching experience was followed elsewhere" (p. 8).

The original Stanford model microlessons followed a sequence of plan, teach, observe/discuss, re-plan, re-teach, re-observe/re-discuss. These lessons were taught originally to peers who played the roles of pupils. The pupil roles included the slow coach, the know-it-all, the couldn't care less and the eager student (Allen and Ryan, 1969, p. 11). This use of peer pupils was reviewed after a short time and school pupils were then used.

Acheson, a doctoral student at Stanford in the early sixties, is credited with the introduction of videotape recorders into the microteaching context. However, writers on the Stanford model, e.g. Allen and Ryan (1969), saw videotape feedback as a "luxury". In addition, although they felt that the use of videotape to record and play back the teaching session in a microteaching setting was a "happy association", they stated, "Videotape is an important - but not necessary - part of the process" (1969, Preface, pp. iv-v).

The use of the skills approach arose partly because of the feelings of both staff and students that teaching and review sessions lacked direction and partly because of the work being carried out at the same time by Aubertine (1964). In his study, Aubertine gave students instruction in set induction, a process which "induces a pupil to attend and learn...[and]...directs the learner's attention to a specific task or learning sequence" (Brown, 1975b, p. 87). The practice of focusing on this one skill in the microteaching lessons was found to be so effective that the "pragmatic" decision was taken to develop further skills "that we felt would be of most use to beginners and that we felt could be effectively trained for in the clinic" (Allen and Ryan, 1969, p. 14). Allen and Ryan (1969, p. 15) then went on to list 14 general teaching skills that were representative of the type of skills that would be useful for student teachers. The list included: stimulus variation, set induction, closure, reinforcement of student participation, probing questioning and higher-order questions. Commenting on this MacLeod stated

It was the decision to incorporate such a skills approach, involving the analysis of teaching, and specific instruction in the behaviours to be practised which added the final, and perhaps the most powerful dimension to the Stanford programme.

(MacLeod, 1973, p. 2)

As with many other educational innovations, there appears to have been no explicit statement of the rationale or framework for the learning processes in microteaching. Cooper and Allen (1970) summarised the views of several writers on microteaching in terms of what they called "rationales" but few of the points implied a theoretical base. Those that did, seemed to support a behaviour modification theory. This point of view was taken up by McDonald (1973) when he maintained that "Originally, microteaching was devised as a procedure for facilitating behavioral control" (p. 71). It is interesting that Allen (in Ivey and Authier, 1978) did not share McDonald's concerns about a theoretical base and talked rather pragmatically of "a system that worked rather than one which was theoretically sophisticated" (Preface).

In a paper titled "Microteaching: Its Rationale", Allen and Clark (1967) supported this latter position by not detailing a theoretical base; instead they listed some six key propositions which appear more as post hoc "visible advantages". The six propositions can be summarised as:

- a) simplification of the complexities;
- b) focus on a particular skill;
- c) reduction of anxiety and irrelevant contingencies;
- d) control over practice;
- e) potential for immediate and accurate feedback;
- f) economy of operation.

These propositions were sufficiently general to allow the microteaching paradigm to undergo many changes. Allen and Ryan (1969) spoke of "the danger of locking in too early on a first alternative which arose purely out of chance and convenience" (Preface, p. iii). It would seem that this "philosophy" underlined much of the work of the sixties at Stanford.

The preceding discussion has summarised in a general way the developments that took place at Stanford. It is appropriate now to review in slightly more detail the various programmes that were conducted at Stanford in the period 1963 to 1968.

Overview of Early Programmes

The changes that took place at Stanford were described in a series of articles which covered the period 1963-1968 and were summarised by Brusling (1974, pp. 19-26). The articles covered: aspects of the first two years of the Stanford programme (Allen and Fortune, 1966); the 1965 microteaching clinic (Fortune, Cooper and Allen, 1967); the clinic of the summer of 1966 (Cooper and Stroud, 1967); the 1967 microteaching clinic (Clark, 1968); and the 1968 clinic (McKnight, 1968).

Before briefly considering these studies, it is useful to look at the overall Stanford model in teacher education of which microteaching was a part and also to consider the participants involved in the microteaching

aspect. The overall programme consisted of a number of areas of study which included foundation courses in education and curriculum courses. There was also provision for a great deal of practice, initially in a laboratory setting and later in a nine-month paid studentship in which the trainee was responsible for two classes. The trainees themselves had high levels of competence in their teaching subjects. The supervisors were doctoral students who were assigned between five to eight trainees and their task included the supervision and tutoring of the trainees for the entire programme, namely, course work, microteaching and internship (Allen, 1966a). It is therefore clear that the participants involved in the Stanford programmes were not typical of those in most pre-service teacher education programmes and that the programmes themselves could not be called typical.

The first of the articles describing the Stanford programme of 1963 and 1964 (Allen and Fortune, 1966) claimed that the trainees who completed the microteaching programme were superior to those who completed the traditional training programme. This superiority was achieved in half the time. Towards the end of the 1965 programme, Fortune and his colleagues (1967) experimented with longer lesson times of 20-25 minutes. They also used school pupils as well as supervisors to evaluate the trainees with the Stanford Teacher Competence Appraisal Guide (S.T.C.A.G.), which was a rating schedule which covered 13 points; for example, "clarity of aim" was one item. The "global" nature of this schedule was not found to be satisfactory, especially as more specific skills were being practised. As a consequence of this Cooper and Stroud (1967) supplemented the S.T.C.A.G. with more specifically designed assessment scales in the 1966 clinic.

In this 1966 clinic doubts were raised as to the effectiveness of reteach sessions. These sessions were not seen to be producing the same significant gains that were evident in earlier clinics. Also there was a growing belief that microteaching was no longer the sole province of preservice teacher education. The technique was seen as both valuable in inservice training and as a means of focusing research. Allen (1979), in reviewing the early years of Stanford, took up this last point and commented that microteaching "presented an environment which was ideal for

the research process in that it was simple, controllable and replicable" (p. 1).

The 1967 clinic (Clark, 1968) showed a shift away from tightly defined skills, and skills were seen as "dynamic and developmental". In addition, the interval between the teach and reteach sessions was varied from 15 minutes up to 24 hours. The 1968 clinic (McKnight, 1968) consisted of three programmes run in parallel. The first "stressed teaching theory and goals in behavioral terms...[including] a certain degree of subject specialisation...[the second] centered around principles for 'instructional design'...[and] the third program was called 'Inquiry Process Training' and was orientated towards interaction analysis" (Brusling, 1974, p. 23).

These microteaching clinics and the variations mentioned above then formed the basis of the first text published on microteaching by Allen and Ryan (1969).

It is clear from the preceding discussion that no specifically defined set of procedures could be classified to form *the* Stanford model of microteaching. However, the most commonly used model appeared to incorporate the following components, namely,

- a) skill definition;
- b) viewing a model demonstrating the practical skill;
- c) presenting a short lesson which might be video recorded to school pupils;
- d) feedback on performance;
- e) reteach of the lesson to a different group of school pupils at least one hour after the initial teach;
- f) feedback on the performance in the reteach.

These components presented a working model from which other institutions could adopt and adapt a microteaching programme. By the end of the sixties the microteaching technique, although still regarded as innovative, was being used by an increasing number of institutions in America, the United Kingdom, Australia and Europe. A substantial number of researchers were working in the area and many articles were being

published. The thrust of the research that exemplifies studies on the Stanford model was identified by Malley and Clift (1980, p. 153). They divided the research into three main avenues of investigation, namely, those articles that:

- a) considered the interaction between the microteaching technique, the skills to be acquired and the long-term benefits of the acquired skills, e.g., Snow (1969) and Weiss (1972);
- b) compared performances of micro-taught trainees with those of traditional, non micro-taught trainees, e.g., Bush and Allen (1966) and Allen and Fortune (1966);
- c) were concerned with the actual components within the microteaching technique like modelling and feedback, e.g., McDonald and Allen (1967) and Claus (1969).

Despite the size of the commitment to microteaching, highlighted by the research effort, the Stanford programmes were not without their critics or problems. Perlberg (1976) talked of "Antagonists opposing the concept all the way" (p. 13) and that some educators viewed microteaching as "but another 'American fad' in the field of education" (p. 13). Other critics, for example, Foster, Heys and Harvey (1973), were more specific in their identification of problems. They listed three aspects of the Stanford programmes that caused concern. The first had to do with the use of rating scales to measure outcomes which "do not focus upon specific and clearly defined objective behaviours" (p. 104) and that they required the observer to use "subjective judgment about the teaching he is observing" (p. 104). The second was the lack of evidence of the transferability of the teaching skill gained in the laboratory to the normal classroom. Associated with this problem was the reliability of the comparison of pre- and post-treatment measurements when "initial efforts are usually so imperfect some improvement must occur" (p. 105). The third major concern identified was the lack of supporting evidence for the Stanford findings when attempts had been made to replicate studies. Most notable were the studies by Kallenbach and Gall (1969) and Borg and his colleagues (1969). Foster and his colleagues concluded by suggesting the need for "careful evaluation" before venturing into any large scale microteaching programme.

However, as will be shown in the next section of this review, this advice was not heeded. Rather, the use of the microteaching technique proceeded to grow at a rate unprecedented in the history of educational innovation.

Griffiths (1975) summarised the views of many educationalists when he commented that "in microteaching we are faced with making training decisions on the basis of partial and inadequate information.... But...., we cannot afford to wait until we know the answers in full" (p. 199).

As the sixties ended it was clear that the Stanford team, through their development of microteaching, had initiated a major change in the approach to training teachers. The reliance on an apprenticeship form of teacher training in a normal teaching situation under the supervision of an experienced teacher was seen to lack control and leave too much to chance. The Stanford team in reacting to this situation showed a willingness to adopt new ideas like "micro-effectiveness" (Gage, 1963, p. 120) and new technology in their attempt to improve the quality of teacher preparation.

Microteaching at Stanford was treated as a dynamic technique which could be modified to accommodate criticisms, changes in theoretic stances and differing intuitive insights of teacher educators.

(Malley and Clift, 1980, p. 152)

The main assumptions for microteaching were that the acquisition of individual skills, practised in a short time period, in a small class situation would assist and accelerate the development of the beginning teacher's expertise in a normal whole class situation (Batten, 1978). The thrust of this development now was away from modelling the master teacher and towards mastering the teaching model (Stolurou, 1965).

FURTHER PROGRAMMES AND DEVELOPMENTS

This section is in two parts. The first, The Growth of Microteaching, considers the directions and popularity that microteaching experienced in teacher training institutions in the seventies. In addition

the substantial decline in research activity in microteaching is discussed. The second, *The Changing Emphasis*, considers the role of various aspects of the microteaching technique during the seventies, such as television feedback, reteach sessions, peers as pupils and technical skills.

The Growth of Microteaching

The early seventies saw a decline in the prominence of Stanford University in the field of microteaching. Perlberg (1976) noted that educationalists who visited Stanford to see at first hand "the original microteaching model in practice were disappointed to find out that since the Stanford School of Education discontinued its programme of Master of Arts in Teaching (MAT), microteaching is only practised as a research tool in the Stanford Research Center" (p. 13). He further added that most "members of the original group of developers of the microteaching concept and its various models, have left the Stanford School of Education and at their new institutions microteaching did not receive the original commitment of its first stages" (p. 13). This situation could indicate an overall decline in the use of microteaching; however, the facts do not support this. Several surveys (e.g., Hargie and Maidment, 1979; Jones, 1979; Brunner, 1973; Turney *et al.*, 1973) carried out in different countries highlighted the significant growth of microteaching in preservice and inservice teacher training since the late sixties.

Brunner (1973), in a West German survey among colleges of education, showed that 33% of the institutions were using microteaching. Whilst some problems with the scope of the survey have emerged (Hargie and Maidment, 1978) it is clear that microteaching was well established. In Australia Turney and his colleagues (1973) undertook a "state of the art" look at microteaching in late 1972. The responses provided evidence that over 40% of institutions were then using microteaching and a further 13% were planning to introduce it. In a later article Turney commented that "today almost all programmes would be using it [microteaching] in some form" (1979, p. 384) in Australia.

Jones (1979) surveyed NCATE accredited colleges and universities in the United States for the school year 1977-1978. This survey allowed direct comparison with a similar survey undertaken previously in 1969 by Ward (1970). The figures showed an increase in microteaching usage of over 60% on the 1969 figures. The results also showed that microteaching was well established, with the majority of institutions having been involved in microteaching for more than seven years, and that 49% of the institutions had their own microteaching laboratory.

A further survey (Hargie and Maidment, 1979), this time in the United Kingdom, whilst concentrating on slightly different aspects, yielded similar data. It was found that over 50% of institutions were using microteaching. Care should be taken, however, in the interpretation of this figure as only one in six trainees was believed to have participated in such programmes.

These surveys all show that microteaching is a much used teacher training technique and considering its relatively recent beginnings they also highlight the speed with which it has been adopted by institutions. It is obvious that the major source of introduction of microteaching by these institutions was through people familiar with, or from materials derived from, the Stanford programmes. However, several institutions, within the United States and elsewhere, have initiated projects which also have influenced the directions of the development of microteaching. For example, Hargie and Maidment (1979) found that many institutions cited the programme conducted at the University of Stirling, Scotland, as an additional major influence on the direction taken in the United Kingdom. The Stirling programme included initially a five-year research project (a further year was added later) funded by the Leverhulme Trust. The aim of the programme was "to evaluate the contribution which microteaching could make to the preservice professional education of secondary school teachers" (McIntyre, MacLeod and Griffiths, 1977, p. 11).

In Australia a large programme was conducted at the University of Sydney involving the formation of the Teaching Skills Development Project in the Department of Education at the University in 1972. The

programme was funded by grants from the Australian Advisory Committee on Research and Development in Education and the aim was to produce videotape based courses on specific teaching skills. These were referred to as the Sydney Micro Skills (Turney, 1979).

An adaptation of microteaching called a Minicourse was developed by the Far West Laboratory for Educational Research and Development, Berkeley. Here, Borg (1968, 1970) and Borg and his associates (1970) produced a self-contained package of training materials that can be used in any school or setting which has a videotape recording and playback system. The self-contained package was used mainly for inservice teachers who viewed an instructional film highlighting the skills, planned and taught a microlesson and then evaluated their own lesson by a structured critique without the aid of a supervisor. Studies have also been carried out on the transferability of such materials to the United Kingdom (e.g., Applebee, 1976; Perrott, 1974, 1976a, 1976b, 1977; Perrott *et al.*, 1975, 1976).

As regards the application of the technique to different situations both within and outside teacher training programmes, growth has been substantial. Already the technique has found uses in counselling (Ivey and Authier, 1978), psychotherapy (Geertsma and Mackie, 1969), group therapy (Stoller, 1968) and in training vocational teachers (Doty, 1971), salesmen (Johnston, 1967) and preachers (Pfeiffer and Dunlap, 1979), and in preparing job interviewees (Barbee and Keil, 1973) and changing supervisors' behaviour (Douglass and Pfeiffer, 1973).

The sustained growth in microteaching programmes highlighted above has not been mirrored by the number of published articles on microteaching in recognised journals and E.R.I.C. The number of articles published has dropped significantly from the peak achieved in the late sixties and early seventies. A major reason for the decline in research activity may have been that microteaching is no longer seen as an innovative technique. This situation may have arisen because of "a de facto face validity...[due] not so much to research evidence as it has been to the satisfaction level of the teacher education staff, the teacher candidates, and school personnel involved in its use" (Allen, 1979, p. 2). Allen stated further that even

for professional educators "affective evidence is more important than any research findings" (p. 4). Brown (1975c) agreed and saw the success of microteaching based on how "it is perceived and valued" (p. 45) by those involved in the technique. As a consequence of this, it has been argued that the theoretical, research and practical components of some teacher education programmes often appear not to be in harmony (Malley and Clift, 1980, p. 145).

The Changing Emphasis

Some of the many variations that were evident in the various microteaching programmes of the late sixties have already been discussed. However, programme modifications have continued into the seventies. The very nature of microteaching has encouraged flexibility. Brown (1975c) commented on this aspect of microteaching and referred to the term as "generic rather than specific" (p. 25). He then expanded on this point by listing many of the variations that do occur,

For example, the groups may vary in size, the pupils may be school children or one's peers, the length of teaching time may vary, the proceedings may be videorecorded, audiotaped, analysed using a category system, rated on a rating schedule or merely observed live...The content and range of skills may vary from practice of a simple technique such as asking drill questions to the complexities of promoting discovery learning. The interval between teach and reteach may vary from twenty minutes to ten days and in some programmes reteach is not used at all. The video playback may show the teacher, the pupils or both...the trainee may attend lectures, skill demonstrations and take part in role playing sessions. Videotaped, audiotaped or transcript examples of teaching skills may be examined, the skill practised and compared with the model. ...the video equipment may vary from the simple to the sophisticated. For example, a one fixed camera set up..., two fixed cameras and mixer which allows practice of teachers, pupils or both to be recorded,....

(pp. 25-26)

It is clear that no one formal definition for microteaching existed. However, there were several changes of emphasis which stood out from the Stanford model. The most obvious change was related to the perceived value of videotape feedback. For example, McAleese and Unwin

(1971), in a selective survey of microteaching, defined microteaching as "the use of closed circuit television to give immediate feedback of a trainee teacher's performance in a simplified environment" (p. 10). Foster and his associates (1973) agreed and saw "videotape equipment...[as] the dominant feature about which programmes are invariably organized" (p. 100) and Fuller and Manning (1973) commented that a programme without video equipment "is simply not *au courant*" (p. 469).

The uses of video equipment have been documented and summarised in many articles (e.g., Cyphert and Andrews, 1967; Roush, 1971). The major benefits included:

Firstly, to provide a common frame of reference for analysis. Secondly, to provide a permanent or semi-permanent record of a teaching encounter. Thirdly, to provide a continuous audio-video feedback channel for the student teacher, who uses this feedback to modify behavioural skills.

(McAleese, 1973, p. 132)

This last benefit, namely, behaviour modification through feedback, highlighted a major point of contention among a number of researchers. Several authors (e.g., Turney *et al.*, 1973; Stones and Morris, 1972) spoke of the effectiveness of video feedback in bringing about changes in a trainee's performance. Cooper and Allen (1970) talked of the feedback component as "probably the crucial one" when they considered the changes a trainee makes as a result of the microteaching programme. Perlberg (1972) stated that the "effectiveness of videotape recordings and playback techniques has been confirmed in a number of studies on teacher training" (p. 549).

Griffiths (1974) dissented somewhat from these views and in an article which discussed the role of feedback he concluded that despite "considerable research attention there are still very few consistent results. There certainly is evidence that...feedback...produces changes in teaching behaviour. Equally, there are studies which demonstrate that such feedback can be ineffective" (pp. 20-21). He also stated that the "contribution of mechanical feedback within microteaching is therefore more

complex than some writers admit" (p. 18). Macleod (1976) echoed the concerns expressed by Griffiths. He added that even though reviewers of the literature were very positive in their evaluation of the effectiveness of video feedback, the actual research literature (which formed the basis of the reviews) was often equivocal in its conclusions.

In addition to the apparent mandatory use of television in micro-teaching, three further changes have been identified by recent surveys which highlighted a move from the format in the tradition of the Stanford programmes. These changes were (i) the downgrading of the significance of the reteach session, (ii) the use of peer pupils, and (iii) the growth in the number of teaching skills.

Jones (1979) stated that only 11.6% of the institutions surveyed in the United States used the teach-reteach cycle. This represented a decline of 13% on similar figures for 1969. Hargie and Maidment (1979) found that only 8% of institutions in the United Kingdom viewed the reteach component as part of the "definition" of microteaching. In Australia Turney and his colleagues (1973) found 30% of institutions used a reteach component. Several reasons could have accounted for this decline in the use of a reteach lesson and they included; the cost effectiveness of including further teach sessions (Clift *et al.*, 1974); the equivocal evidence as to the value of the reteach session (Turney, 1970; Wragg, 1971); the attitudes of many trainees towards a reteach session (Brown, 1973); and the time constraints within a given programme which necessitated the organiser choosing between concentrating on a limited number of skills and including reteach sessions or selecting a larger number of skills and hence neglecting the reteach sessions.

The use of peer pupils as members of the microclass has grown. Whilst some institutions use both peers and school pupils as pupils in different microclasses, Jones (1979) found that 82.7% of institutions frequently used peer pupils whilst school pupils were used frequently 23.6% of the time. Hargie and Maidment (1979) spoke of how institutions "have modified their usage of [school] pupils quite considerably" (p. 5) by replacing them by peer pupils. Organisational problems and costs involving

the transfer of school pupils to the institution, or alternatively using in-school facilities and transporting the trainees, appear to be the main reasons for the shift towards peer pupils. There are also ethical concerns as to whether school pupils should be paid for being members of a microclass.

The number of identifiable skills used in training programmes has grown considerably in the United States and to a lesser extent in other countries. Jones (1979) stated that in his survey 129 different teaching skills were identified - far in excess of the 14 identified by the Stanford team. Hargie and Maidment (1979) identified 21 skills and Turney and his colleagues (1973) identified 33 skills. Whilst this may appear to be a departure from the Stanford programmes, what stands out is that the most popular skills still conformed very closely with the skills set down in the Stanford programmes. For example, Hargie and Maidment (1979, p. 76) listed the skills used in the United Kingdom in order of usage. The first five were: Questioning/Redirecting, Induction/Focusing, Reinforcement, Closure and Varying the Stimulus. In the Australian survey Turney and his associates (1973, p. 63) listed Questioning, Reinforcement, Exposition, Varying the Stimulus and Set Induction as the five most used skills, and the United States survey also listed Reinforcement, Variation of Stimulus and Fluency in Asking Questions as either the most important teaching skills or the skills most frequently used (Jones, 1979, p. 9).

Even though the surveys indicated a clear similarity with the Stanford programmes on the most common skills being used in teacher training programmes, there was a growing resistance to several of the assumptions implied within the component skills approach (see, for example, Spelman and St John-Brooks, 1972; Clift *et al.*, 1974; Stones, 1976; Applebee, 1976; Malley and Clift, 1980). Spelman and St John-Brooks (1972) summarised several of their concerns. They included "the ad hoc nature of the derivation of microteaching 'skills', the inadequacy of these skills in contributing to the evolution of a personal teaching style, and their seeming irrelevance to meaningful patterns of classroom interaction and the needs of the pupils" (p. 88). Other concerns expressed by the same authors included:

- a) the use of frequency counts in assessing degrees of skill acquisition. This was believed to measure effectiveness in terms of quantity rather than quality;
- b) the lack of any precise connection between teaching subject and component skills;
- c) the behaviouristic orientation of the skills;
- d) the lack of evidence that such skills transfer from a microteaching context into a normal classroom situation;
- e) the lack of evidence that such skills are related to effective teaching.

Stones (1976) talked of a "wholist backlash" (p. 70) by people who saw the concentration on specific skills as artificial. These people also would have added that several important aspects of a teacher's role involving personal relationships with pupils could not be practised. Hence no matter how many skills were acquired and "mastered" they would not have "mastered the whole of the global skill of teaching" (p. 70).

In a review titled "Development of the Technical Skills of Teaching 1968-1978 and Beyond", McKnight (1979) considered the development of component skills after Stanford and noted "that there has not been widespread development of the original list of skills" (p. 21). However, while he noted that a literature review by McKnight and Bush (1977) found no "significant work on the skills" (p. 21), he also mentioned the work of Gage (1976), Berliner (1976), Snow (1969) and Shavelson (1973) as having revealed a "trend towards a reconception of the skills" (p. 21). This reconception was towards more global skills (e.g., Gage, 1976) and considered skill training within some theoretical framework. However, McKnight (1979), when commenting on future directions of research, saw that "an adequate framework of the Technical Skills of Teaching is seen as a prior condition to further research and development of the skills" (p. 25).

As a balance to the above commentary and as indicated by the previously outlined survey results, the component skills approach, as initially developed, is very much alive in training institutions. Turney (1979) in commenting on the Teaching Skills Development Project which ran

between 1973 and 1977, stated that "some 26,000 handbooks and 1,000 video-taped programmes have been purchased by 98 per cent of Australian teacher education programmes and by a number of overseas institutions" (p. 385).

It is clear from the previous discussion that there have not been many significant changes from the Stanford programmes. Although there is some indication of a change in thinking at the research level, the Stanford type programmes, or slightly modified versions of them, are still most common in training institutions. Further, many practitioners would argue against the concerns expressed earlier regarding the inadequacy of the component skills approach. Some of these concerns regarding both micro-teaching and the skills approach are countered by the fact that micro-teaching never was meant to be considered a cure-all for teacher training, but as only one aspect of the process of learning how to teach. Applebee (1976) talked of the possible effectiveness of a component skills programme in which teachers "make the transition from increasing the frequency of various behaviours, to using them in appropriate contexts" (p. 41). Stones (1976) probably best summarised these views when he stated

Skills practised separately can never be completely divorced from other activities, and provided their practice is seen as part of a process that involves a variety of teaching experiences working towards full involvement with a complete class there is little danger that individual skills will be compartmentalized.

(p. 71)

Discussion in this section of the chapter has outlined the Stanford programmes and some of the developments that have taken place since the late sixties. It is clear that microteaching has remained a flexible technique. It might have been appropriate, at this stage, to further define microteaching in the light of the changes mentioned previously. However, "Attempts to fix definitions and to evaluate from surveys what can and what cannot be legitimately labelled as microteaching are prematurely setting limits to a training technique which is still evolving" (Malley and Clift, 1980, p. 148).

In summary, whilst many institutions have moved away from the original Stanford model, many of the components within that model are still recognisable in most programmes. Microteaching, an innovation in the early sixties, has become an accepted format for the training of teachers. Reasons for the sustained growth have included:

- a) the publication of the book by Allen and Ryan (1969) and the subsequent publication of several other books by Olivero (1970), Turney and his associates (1973b, 1975, 1976), Brown (1975b) and McIntyre, MacLeod and Griffiths (1977);
- b) the popularity and perceived usefulness of video recorders and associated equipment;
- c) the use of component skills which can be altered and modified by practitioners "on a subjective intuitional basis without regard to research based knowledge" (Malley and Clift, 1980, Preface, p. 1);
- d) the rejection by many researchers and practitioners of a behaviouristic model which might provide a conceptual framework in which to view microteaching.

One further reason, perhaps the most significant, which is considered in the following section of this chapter comes from research which showed that participants involved in microteaching enjoyed the experience. Despite this comment, research findings have not been particularly helpful as, in general, "research offers us little firm guidance in the planning and execution of a microteaching programme" (Gregory, 1980, p. 123), and "much more needs to be known about the variables operating in the process referred to as microteaching" (Foster *et al.*, 1973, p. 105).

As a conclusion to the discussion on the evolving nature of the microteaching technique, it is appropriate to examine the research related to the effectiveness of microteaching. Whilst this work is only part of a larger area of research related to teacher effectiveness, the following comments are restricted to those studies related to microteaching.

THE EFFECTIVENESS OF THE MICROTEACHING TECHNIQUE

This section considers problems in determining the effectiveness of the microteaching technique and research related to the effectiveness of microteaching.

Problems in Determination of Effectiveness

A major difficulty in establishing the effectiveness of microteaching has already been alluded to above. This difficulty arises because microteaching is plagued by many of the same problems which have hindered general questions of research into teaching as "microteaching is no less complex than the measurement of teaching itself. And measurement of teaching pivots on notions of the good and the successful" (Brown, 1975c, p. 26). Moreover, since "There is, as yet, no comprehensive theory of teaching, nor are there generally accepted criteria for evaluating teacher effectiveness" (Perlberg, 1972, p. 547) the difficulties are further compounded.

In addition to these difficulties of establishing clear criteria for the effectiveness of microteaching, Manis (1973) identified three problems which confront a reviewer when trying to deal with large numbers of articles that purport to tackle the effectiveness issue.

The first problem was the lack of adequate description which accompanied the independent variables. Such variables as the particular skills used, the trainees and the microteaching programme were often described so briefly that meaningful interpretation of results or generalisation to other settings were rendered very difficult.

The second problem was the "almost universal lack of reliable, valid, and precise criterion *measures* of teacher or student performance" (p. 10). These measures in microteaching tended to be (i) rating systems which usually consisted of a five or seven point scale from say "poor" to "excellent" or (ii) a categorisation system which involved the observer in counting the occurrences of well defined behaviours. The rating systems

generally lacked specificity and were often referred to as high inference measures. These measures required both the researcher and the reader to make assumptions about the precision of the measures which may not have been justifiable. The category systems were usually very specific and were often referred to as low inference measures. However, these measures were related to quantity rather than quality. For example, a prompt or higher order question would have been scored in a coding system regardless of the appropriateness of the prompt or the desirability of the use of a higher order question in that particular situation. A further issue Manis identified relating to measurement was that some of the instruments used to measure a particular skill were not specifically related to the skill being examined. Much of the early Stanford work was plagued by this problem.

The third problem related to the difficulty in interpreting the data. Both the problems mentioned above exacerbated this problem but, in addition, it was often "difficult or impossible for the investigator to rule out the presence of some undetected but systematic difference between groups that could bias his data" (p. 12).

Research Related to Effectiveness

Below is a discussion of results related to the effectiveness of microteaching and sufficient detail is given to highlight trends and problems. Hargie (1977) identified four main areas from which discussion of the effectiveness of microteaching should be approached. These areas were:

- (a) Actual teaching performance
- (b) Pupil attitudes to their teacher
- (c) Trainee teachers attitudes to their course of training
- (d) Increases in pupil learning.

(p. 88)

Two further aspects can be added to this list. These are:

- e) the cost effectiveness of a microteaching programme as compared with other training techniques, and

- f) the effectiveness of various components within the microteaching technique.

Discussion below examines each of the above six areas.

a) Experiments which have investigated actual teaching performance can be considered to belong to one of three modes of study. These modes comprised experiments which used: pre- and post-microteaching scores (e.g., Borg, 1972); a correlational study in which performance was compared with actual classroom performance (e.g., Brown, 1975c); two groups of students who followed the same programme except that one group did not participate in microteaching (e.g., Batten, 1978).

In the Borg 1972 study a group of inservice teachers showed increases in eight out of ten skill-related measures on pre-treatment scores after undertaking a microteaching programme. This performance was maintained after a further 4 months and 39 months. Brown (1975c) reviewed six correlational studies which identified a positive relationship between microteaching performance and subsequent teaching performance. Batten (1978) compared two groups of students involved in identical programmes, except that one of the groups did not participate in microteaching, and found that there were no significant differences between the group that microtaught and the group that did not.

While the methodological approaches taken in the above studies were typical of many research articles, the results obtained in these studies were not necessarily representative of the findings of similar research questions. For example, the results of the Batten study (1978) were supported by previous findings by Kallenbach and Gall (1969); however, these results differed from a previous study by Allen and Fortune (1966) which found in favour of the microteaching group. Further, several competing interpretations could also explain the results reported. For example, Copeland (1977) found that the degree of maintenance of a specific skill, prominent in the Borg (1972) study, was related closely to the supervising teachers' supervisory techniques and their use of the particular skills. In addition, this study found no significant relation-

ship between microteaching training and classroom performance. In Brown's study, cited above, the correlations could merely have indicated that those trainees who scored highly in a particular skill in a microteaching session also scored highly with the same skill in a normal classroom setting.

From these studies, however, two important aspects are highlighted. First, in studies which involve the comparison of microteaching programmes and alternative programmes, care must be taken that the control group is given adequate preparation (Foster *et al.*, 1973; Batten, 1978; Malley and Clift, 1980). Clift and his colleagues (1974) summarised this point by stating that "For a true evaluation of the effectiveness of the microteaching technique the same conceptual framework of analyzing teacher behaviour must be given to both experimental and control groups, otherwise confounding of the results will occur" (p. 20). Second, these studies highlight a recurring theme found in a number of investigations (e.g., Wagner, 1973; MacLeod and McIntyre, 1977). This theme, which may account for conflicting results in similar experiments, suggests that there may be variables within the microteaching format which are more significant than others in the skill acquisition phase. Foster and his colleagues referred to this when they suggested that it "may be possible...that the results now achieved with a full microteaching sequence can be obtained by using only portion of the process" (p. 105). Batten (1978) explained his results in terms of possible "critical elements in the microteaching format" (p. 396). He also stated that perhaps this "critical" variable is the discrimination training element (i.e., the part of the programme where the students learn to code teaching behaviour).

b) Research using pupil ratings of teachers to determine the effectiveness of microteaching has been carried out by only a small number of investigators. Examples of this research include studies by Fortune and his colleagues (1967), Limbacher (1971) and Foster and associates (1973). The Limbacher study involved 25 trainees who completed a microteaching programme and a control group which undertook an alternative programme. This alternative programme consisted of methods of instruction and classroom practice. Pupils were expected to give feedback and evaluate performance. The results indicated significant differences between the two

groups in favour of the microteaching group. However, a review of this paper (by Clift *et al.*, 1974) highlighted many serious problems with the overall design and reporting of the study. This criticism raised serious doubts about the meaningfulness of the overall results. Different findings emerged from the investigation by Foster and his associates. They found no differences in ratings by pupils between students who had completed a microteaching programme and those who had not, but it must be recognised that the study was restricted in terms of numbers of students.

Hargie (1977), in reviewing articles in this area particularly those by Wragg (1971) and Fortune and colleagues (1967), summarised his findings by stating that "it appears that in those studies which have employed pupil ratings of teacher behaviour...positive results have been found in relation to MT" (p. 92).

c) The positive reaction in favour of microteaching by trainees is the one aspect of the effectiveness of microteaching which research consistently supports. Several studies (e.g., Kilman, 1969; Harris *et al.*, 1970; Reed *et al.*, 1970) have attempted to measure the effectiveness in terms of the trainee's attitude change to teaching style and subject matter. Reed (1971) and Traill (1971) concentrated on the effects of microteaching on the trainee's attitude to teaching. Other studies (Fortune *et al.*, 1967; McIntyre and Duthie, 1972; Olmo, 1973; Applebee, 1976; Klingstedt, 1976; Macleod, 1977; Batten, 1978) all reported that the great majority of their trainees viewed microteaching in a very favourable light. In general, the studies found that trainees considered the microteaching experience to be rewarding, interesting and valuable.

There are several reasons which may explain this consistent finding. They include: the concentration on a single aspect of teaching which makes the teaching task appear more manageable; the low threat environment associated with dealing with a small class; the chance to see oneself in action; and the potential to increase self-awareness and the possibility for realistic feedback on what actually took place in the lesson. Hewitson (1979) stated that microteaching "frequently leads to high levels of rapport between lecturer and student" (p. 64) and that

"the directness of the microteaching technique in both the formative and remedial development of the individual student in a variety of teaching skills is one of its most appreciated advantages" (p. 65).

Despite this overall positive reaction by the majority of trainees, not every student in a programme feels the same. Hargie and his associates (1979), when commenting on a previous experiment (Tittmar *et al.*, 1977), stated that "the reaction of individual students to microteaching varies widely between enthusiastic appreciation and overt rejection. Some students seem to find this method of training extremely frightening, regardless of attempts by teacher trainers to encourage as relaxed an atmosphere as possible" (p. 159).

One study that did not support the general trend was that by Gibbs (1980). In this study, trainees reacted unfavourably to the microteaching session and "they thought microteaching was an 'artificial situation', and that they would have preferred to have been in schools with other first year students" (p. 55). Gibbs, in commenting on the results, indicated that the trainees' attitudes could have been influenced by peers who were involved in practice teaching at the same time and by some tutors who were "by no means fully committed to microteaching" (p. 55). In addition, the questionnaire which determined the students' views on microteaching was given *after* the normal teaching practice in the school. Thus, unless the microteaching programme was seen as a middle step in the trainees' professional development, it could be possible that the trainees would be very conscious of the limited nature of the microteaching experience.

The most common reaction to microteaching was best summarised by Foster and his associates (1973) when they stated that "one cannot help but be impressed by the apparent interest and enthusiasm expressed by those participating in microteaching programmes" (p. 100). They also added that:

Whatever other effects microteaching may have, it does appear to stimulate in most students an interest, not only in the immediate activity of acquiring skill in teaching, but in a broader quest for a professional understanding of teaching, and even in a critical evaluation of microteaching itself.

(p. 103)

d) Increases in pupil learning have been a measure of effectiveness that has not been used extensively by researchers. Investigations which considered this aspect of effectiveness included the work of Foster and his colleagues (1973), Pierce and Halinski (1974), Santiesteban (1975), Stahl (1976) and Yorke (1977). The results, in general, have not been supportive but this could be related to the enormous difficulties encountered in producing an adequate design for an experiment and the inappropriateness of current measuring instruments.

There appear to be two opposing schools of thought. The first, in favour of using pupil learning as a measure of microteaching effectiveness, was supported by Foster and his colleagues (1973). They suggested that rather than emphasise the teacher's behaviour in assessing microteaching "the emphasis ought to be on producing an effect *in the pupils. ...measures of pupil achievement* [as an approach]...is a more appropriate criterion against which to assess the efficacy of microteaching in the development of skill in teaching" (pp. 109-110). They further argued that when "pupil achievement is used as a dependent variable in an evaluation of microteaching an important quality of teaching is acknowledged. The substantive reality of teaching is not the behaviours a teacher exhibits..., but the degree to which his teaching behaviour induces learning in his pupils" (p. 110).

MacLeod (1981c) took an opposing view and argued that such experiments cannot yield meaningful results on the effectiveness of skills. He strongly attacked both the studies of Yorke (1977) and Pierce and Halinski (1974). MacLeod concluded by stating that it is difficult to conceive of any satisfactory test of "the 'effectiveness' of microteaching which makes use of pupil performance criteria. The confounding of 'transfer' studies with 'skill validity' studies is probably not advisable. The difficulties are such, that the results of experiments of this kind may serve only to mislead and not to inform" (p. 41).

e) The effectiveness of microteaching has also been approached in terms of the financial costs involved in developing and maintaining such a programme. Usually the microteaching component is compared with some alternative programme that does not involve microteaching or in which different aspects of the microteaching programme are varied. The costs involved often include: the initial capital costs such as closed circuit television; staff supervision time, including training time; ongoing costs like video tapes; and staff allocation needs in terms of student/tutor ratio.

Whilst some studies have investigated costs associated with microteaching (e.g., Brown, 1974), a study which considered a cost benefit analysis came from an investigation by Clift and his colleagues (1974, 1976). This study involved the costing of several formats which contained a variety of teaching sessions, the use of audio tape or videotape feedback with a supervisor and feedback without any audio or audio-visual aids. Clift (1979) later added that the benefit of such research was not to provide definitive answers on particular issues nor was the aim of this type of research to produce "a single clear cut solution...but...rather, it increases the information available to the planner and, hence, enables a more objective weighing up of the attributes of the various alternatives available" (1979, p. 210). The results found support for microteaching in bringing about behavioural change in the trainees but in terms of cost effectiveness they found that "a blanket use of video-aided feedback is not a warranted cost" (Clift, 1979, p. 208).

f) The effectiveness of various components within a microteaching programme has dominated much of the research published on microteaching. The research in this section can be considered under three basic headings, namely, the preparation phase, the practice phase and the feedback phase.

Brief discussion on the effectiveness of the feedback phase has already been undertaken previously in this chapter in relation to the perceived value of the use of video equipment. This will not be repeated here; suffice to say that results as to the effectiveness of differing

methods of feedback or the value of feedback itself are, at best, equivocal.

The first two phases mentioned above have not been considered previously and research in this area has clear implications for the overall effectiveness of a microteaching programme. However, the sheer volume, complexity and importance of the research concerning these phases does not allow for the review of the literature related to them to fit easily into the present discussion. As a consequence of this, and because of the implications of the research into these phases with the themes that are emerging in this chapter, a more detailed discussion and evaluation of the research literature in these two areas is undertaken in the following chapter.

From the results outlined above for the six areas related to the effectiveness of microteaching, it is clear that, despite a large body of research data and the supportive views of many writers, not a great deal can be stated categorically about the effectiveness of microteaching. There are a number of related reasons for this. The first is concerned with the large number of studies which are only relevant to particular institutions and their special needs and programmes, or which rely on specialised materials and restricted instructions, or which depend on the personalities and strengths of the participants. These studies, which may be classified as programmatic or pragmatic in nature, are seldom generalisable or related to some broader conceptual framework or model. This lack of a model, a second reason, implies that few researchers carry out their studies in a context of testing hypotheses from coherent theories (MacLeod and McIntyre, 1977). Malley and Clift (1980) also supported this point of view and added;

many 'practical' teacher educators prefer to use microteaching techniques on a subjective intuitional basis without regard to research based knowledge.

(Preface, p. 1)

Many researchers would also probably be in agreement with Malley and Clift (1980) when they stated that "Differences of design, criterion measures and the use of control groups between studies render it difficult to present...a conclusive statement about the general and relative effectiveness of the microteaching technique" (p. 159). In addition, researchers suffer the same complex problems in microteaching when attempts are made to identify criteria for successful achievement as they do with classroom teaching.

It is clear that, in general, participants involved in a microteaching programme enjoy it and perceive it as valuable and useful. This fact would appear to be the main reason for the continual extensive use and growth of the technique in teacher training institutions throughout the western world. Gibbs (1980) placed this in perspective by stating that

The effectiveness of any training programme must, to some extent, be judged by the participants' reactions to it. ...programmes which modify behaviour but produce negative attitudes are of little value in preparing students for their future role as teachers.

(p. 45)

While microteaching appears to have several advantages, in addition to the generally positive reactions of participants, no blanket findings regarding its effectiveness have been forthcoming. It is inappropriate perhaps to talk of the effectiveness of microteaching as a single entity for it is only one aspect of a number of interacting elements in a particular total teacher education programme. Microteaching was never intended to be a "stand alone" teaching preparation panacea (Perlberg, 1972).

CONCLUSION

The preceding discussion has reviewed the growth and development of microteaching from its beginnings at Stanford through to the present day. From this discussion it is clear that microteaching has become a well

established technique in teacher training institutions throughout the world.

Despite a few changes to the original Stanford model, major similarities still exist in current programmes. There appears to be a basic or traditional model for microteaching that includes the components: a skill definition; an observational aspect; the presentation, to a group of peers, of a lesson of between five to ten minutes in length which is video-taped; a playback of the lesson which becomes the focus of a discussion with peers and a supervisor; and a further lesson which is in turn video-taped, replayed and discussed. In addition to the above close connection with the Stanford programmes, the most popular skills used in current programmes are very similar to those used by the Stanford team.

The research evidence on the effectiveness of microteaching in registering gains in student performance or pupil learning has been equivocal. Several reasons have been suggested for this lack of clear trends, but principally they include: the complexities involved in the evaluation of performance in microteaching; the lack of equivalent initial information given to differing treatment groups; and the use of non generalisable aspects in the studies, e.g., atypical students, small number of participants, specialised definitions of the components of the microteaching programme, idealistic settings that do not relate to real life training programmes. The only aspect in which research consistently favours microteaching is that participants enjoy the experience. It is *this* probably more than any other single factor which accounts for the sustained growth of microteaching.

Three issues stand out from this review and require further elaboration through a deeper investigation of the literature. The first concerns the suggestion that there may be some variables (e.g., discrimination training) which are more significant than others in the process of skill acquisition. The second concerns the decline in the use of the reteach component by many institutions and consequently the role that practice may play in the process of skill acquisition. Finally, related to these two issues, the third issue concerns what frameworks have been considered to underpin the processes involved in skill acquisition.