CHAPTER I

INTRODUCTION

1.0.0. THE PRESENT STUDY

The present study, entitled, 'Effect of Different Techniques of Feedback Upon the Attainment of Teaching Skills Related to Stimulus Variation among Teachers,' is an experimental study pertaining to the area of teacher behaviour in the context of student teaching in teacher education. This study was conducted under two phases - pilot and final.

The purposes of the pilot study were : to see the feasibility of microteaching without sophisticated hardware in Indian conditions; to develop evaluation tools for skill observation; and to draw out a guideline for the final study. This study, having single group, was conducted on a sample of eighteen B.Ed. students out of a total of 140 students, enrolled at the Faculty of Education and

Psychology, M.S. University of Baroda, Baroda for the session 1973-74. Treatment was given by supervisor, peer and self as sources of feedback in microteaching. The two teaching skills, namely, reinforcement and silence and nonverbal cues were the dependent variables. The controlling variables were the age, sex, previous teaching experience and methods of teaching offered at the B.Ed. level. Tools used in this phase of the study were : lesson evaluation proforma for supervisors, lesson evaluation proforma for student teachers (peer and microteacher), attitude scale towards microteaching and the Flanders Interaction Analysis category system (FIACS) matrics.

The purposes of the final study were : to study the effects of three techniques of providing feedback - discussion, oral and written, on the attainment of teaching skills related to stimulus variation in microteaching under simulated condition; and to study the transfer of training from microteaching under simulated condition to real classroom teaching. This study, having pretest-posttest parallel group design, was conducted on a sample of thirtytwo B.Ed. students out of 200 students enrolled at D.A.V. College of Education, Abohar, Punjab,

for the session 1974-75. The treatment variables were : discussion, oral and written techniques of feedback. The dependent variables were - three skills related to stimulus variables, namely, body movement, gestures and shifting sensory channels. The controlling variables were - the age, sex, qualifications, percentage of marks and methods of teaching offered at the B.Ed. level. Tools used in this study were : general teaching competence observation schedule (GTCOS), three lesson evaluation proformas - one for each skill, attitude scale towards microteaching, self-evaluation proforma and free response proforma.

The present study has been addressed to three vital issues concerning teacher training programme to explore some possibilities to improve upon it. Vital issues are -

(i) To what extent, microteaching as an innovative training technique,can be applied in Indian conditions ?

(ii) What are the effects of different techniques of feedback upon the attainment of teaching skills in microteaching under simulated conditions ?

(iii) To what extent, the training of microteaching under simulated condition, can be transferred to real classroom teaching ?

Referring to the first issue, many more points, relating to feasibility of microteaching, can crop up. Answers to

such points, raised implicitly, have been explored with the following captions alongwith related literature :

(i) Background
(ii) Microteaching
(iii) Simulation
(iv) Teaching skills
(v) Stimulus variation
(vi) Nonverbal communication in the classroom.

Referring to the second issue, the allied questions can be raised regarding the conceptual frame of feedback in microteaching. Answers to these questions, in the light of related literature, have been explored under the following caption :

Feedback process

Referring to the third issue, many more questions on transfer of training in the context of microteaching can be raised. Answers to such questions, in the light of related literature, have been explored under the following caption :

Transfer of training

1.1.0. Background

Teacher education in India and abroad has not improved much inspite of many efforts made to this effect. In view

of studies reviewed in India (Education Commission, 1966; Survey by Palsane and Ganchi, 1967; Joseph, 1967; Sharma, 1968; Mallaya, 1968; Marr et al.,1969; Srivastava, 1970; Khosla, 1970; Saika, 1971; Mehrotra, 1974; Singh, 1975) and abroad (Popham and Baker, 1968; Popham, 1969; Davies, 1964; Cope, 1969; Peterson, 1973), the following are some of the conclusions that can be drawn regarding the existing teacher education programmes :

(i) There is no uniformity in the procedure followed in various aspects of student teaching.

(ii) There are no clearcut evidences to say that present day teacher education is effective.

(iii) Teacher educators are not clear about the training objectives and evaluation procedures to show the extent of their achievement.

(iv) Supervision of practice teaching is haphazard, indiscriminating and subjective.

The important reason pointed out for such a situation is that teacher education has no empirical basis to streamline the programmes (Buch, 1974; Passi and Padma, 1975; Travers, 1975).

Moreso, the common sense approaches to student teaching, namely, the 'Born Teacher' approach, the Practising Act approach, and Model the Master Teacher

approach, could not produce tangible results upon prospective teachers. There can be reasons that they may be wanting deep analysis, precision and application of learning principles and techniques of student teaching.

The global criterion approach regarding teacher effectiveness in student teaching seems to have misled teacher educators and researchers. It is little to wonder that, when Berelson and Steiner (1964) dealt with the subject of teachers behaviours and characteristics in their inventory of scientific findings in behavioural sciences, they dismissed the large number of studies with the single dismisal sentence that there are no clear conclusions. Gage (1972) pointed out that if global criterion approach proved to be sterile what was the alternative ? The answer was to take the same path, more mature sciences already followed; break them down - same route for 'teacher effectiveness'. Hence, present situation in teacher education, has resulted in the emergence of analytical approach ny teacher training (Gage, 1963; Gage, 1972; and Stones and Morris, 1972).

Analytical approach envisages teaching to be made up of well defined components called 'teaching skills', which can be understood operationally in terms of behaviours, practised one by one, evaluated in the light of behaviours

and controlled contextually.

Analytical approach has also been responsible for evolving new innovations in teacher education like Classroom Interaction Analysis, Competency Based Teacher Education or Performance Based Teacher Education Sensitivity Training, Programmed Instruction, Computer Assisted Teaching, Microteaching and Simulations to meet the present challenges of teacher training.

Stones and Morris (1972) observed that growing volume of material is available on which scientific approach to teaching can be based. In view of the analytical thought regarding teaching, scientific approaches towards student teaching have come into being. Scientific approaches of student teaching are : the 'Clinical' approach, 'Master the Teaching Model' approach and the 'Technical Skills' approach.

Recently 'Technical Skills' approach has been adopted as an innovative technique of teacher training. A complex activity line teaching is often analysed into a number of teaching behaviours for the sake of better understanding, they are termed as 'technical skills' (Bush and Allen, 1963). Gage (1967) observed that technical skills are specific

instructional techniques and procedures that a teacher may use in the classroom.

When teaching analysed into technical skills is made the focus of concern, it becomes easier to derive objective and reliable measures of changes in teacher behaviours. More meaningful investigations of the relationship between teacher performance and pupil learning have become possible working with technical skills. Further, this approach used under the paradigm of microteaching and simulation, based on behaviour modification techniques, has produced encouraging results.

With this background regarding teacher education in general and student teaching in particular, an attempt has been made to study microteaching as an innovative technique of teacher training in the light of related literature available.

1.2.0. MICROTEACHING

Microteaching being one of the innovations of recent origin under the title scientific approaches (see caption 1.1.0.) of student teaching, has been adopted as a training technique in the present study. From the contemporary literature available on teaching, so far, this technique

seems to be more suitable having sound pedagogical base. Flanders observes, '.... In a relatively short period of less than ten years, microteaching has been created, refined and applied in the field. This is despite the alleged gap between theory and practice, between university thinking and realities of classrooms' (Allen and Ryan, 1969).

Microteaching can be described as a 'laboratory technique' developed at Stanford, California by Allen and associates (Allen, 1966, 1969) in 1963. The 'complex act of teaching' is broken down into smaller components, making the learning task more manageable for the beginners. Realising the gravity of teaching for the prospective teacher, Morrison and McIntyre (1969) pointed out that, '.... the complexity of the activity in a classroom at any one time, and the many aspects of teaching, are such that a student beginning to learn how to teach cannot give his attention to more than a small part of it.... he is likely to be overwhelmed by this complexity... it would be desirable, especially in the early stages of training, to reduce the situation to manageable portions'. Thus, microteaching procedure helps to simplify and bring under control the teaching activity. In other words, it is a technique of applying scientific principles to the art of teaching (McAleese and Unwin, 1971). These views amplify

the importance of microteaching as a training technique and help to define its concept.

(a) Concept and Nature of Microteaching :

Allen and Rayan (1969) write, '... the concept of microteaching has never been a static one. It continues to grow and change and develop both in focus and format.' McAleese and Unwin (1971) have pointed out that it is a concept which is applicable to many situations and which represents a developing process. It may, therefore, be wise to avoid restrictive and premature definition and follow Allen and Ryan in focussing upon essential propositions which appear characteristic of the concept.

Following definitions and descriptions of microteaching highlight the crucial issues and propositions involved in it.

(i) Microteaching is described as a 'scaled down teaching encounter in class size and class time' (Allen, 1966).

(ii) Microteaching is 'a teacher education technique (which) allowsteachers to apply clearly defined teaching skills to carefully prepared lessons in a planned series of five to ten - minute encounter with a small group of real students, often with an opportunity to observe the results on videotape' (Bush, 1968, Preface).

(iii) McAleese and Unwin (1971) suggest that the term microteaching is 'most often applied to the use of closed circuit television to give immediate feedback of a trainee teacher's performance in a simplified environment', but suggest that microteaching is best viewed as a form of simulated teaching usually incorporating 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).

(iv) Peck and Tucker (1971) state that, 'microteaching is a combination of a conceptual system for identifying precisely, specified teaching skills with the use of videotape feedback to facilitate growth in these teaching skills.'

Precisely stated, in a microteaching procedure, the trainee is engaged in a scaled down teaching situation. It is scaled down in terms of class size (four to five students), length of the lesson (five to ten minutes), unit of content (one concept) and complexity of task (one skill). After teaching a brief lesson, the trainee and his supervisor (experienced teacher) critique the lesson. If audio-video recordings are made of the lesson, they are played back at this time. After the critique

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session, the trainee revises his lesson and reteaches it, usually to a different set of pupils. The second teach session is also followed by a critique. This microteaching cycle goes like this :

Teach --- view --- critique --- reteach --- Review --- Recritique --- follow the cycle if need be

This systematic training, under microteaching procedure for developing teaching skills, is based on the teaching theory underlying programmed learning and computer assisted instruction (Brendan et al., 1973) and Argyle's social skills model (1970). This appears to be the reason for being optimistic about the potentiality of microteaching in improving skill in teaching. Evidence available in support of the above statement is given in the following studies.

Ward (1968) found in a survey of American colleges and universities that 176 institutions were using microteaching in their teacher training programmes. Allen and Ryan (1969) cite a survey of student teaching programme undertaken by Johnson which showed that microteaching was being used in fifty percent of such programmes. Collins (1969) reports variations of

microteaching being used at the universities of Botswana, Lesotha, and Swaziland. Evan (1970) deals with the application of microteaching in developing countries in Africa, while Jocobson (1970) reports microteaching being used in the universities of Dar-es-salaam and of Nairobi. Lawless (1971) described microteaching without hardware developments at the University of Malawi. More than fifty percent of the institutions in Australia involved in teacher training, have introduced some form of micro-teaching (Turney, 1973). Microteaching has been introduced in U.K. by several institutions including the University of Stirling, New University of Ulster, Lancaster University and at the Exeter University.

Research evidence which has paved the way for the introduction of microteaching as an effective technique of training, in different countries of the world, is summarized in the following paragraphs.

(b) Effectiveness of Microteaching :

Research literature on microteaching has been reviewed here under different headings of human learning, namely, effectiveness in professional and pedagogical factors and cognitive affective and psycho-motor domains.

(i) Studies related to professional and pedagogical factors : Allen and Fortune (1966) compared a control group

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with a microteaching group over eight weeks of training and found that the microteaching group received high ratings in teacher effectiveness than did the control group. It was also suggested that the microteaching was more efficient, in that it required less than ten hours time per week, as against the twenty to twentyfive hours per week required by the control group. Perlberg et al. (1969) stated that microteaching procedure could greatly enhance the effectiveness of student teaching period. But there is evidence from Borg (1970) and the minicourse teams that microteaching programmes are less effective with pre-service teachers than they are with in-service teachers. Kallenbach and Gall (1969) carried out a replication of the study in 1966 and found no difference in ratings between a control and experimental group either immediately after training or one year later. These authors, concluded, however, that microteaching was more efficient than the conventional method, in that it required one fifth of the time and created fewer administrative problems. Young and Young (1969) found microteaching to result in effective acquisition of alternative teaching patterns.

Bell (1968) carried out a study in Texas using home economics teacher trainees as subjects. She found that the

microteaching group showed significant gains in teaching performance from initial lesson to final lesson ($p < .01$) and that the experimental group performed at a higher level than that of control group ($p < .01$). Bloom (1969) who used microteaching approach in the interns' teaching programme at the University of Wisconsin, concluded that overall effect of microteaching clinic appeared to be of added relevance in the thinking procedure. Singh (1974) reported that microteaching was better than the traditional training programme. It was an experimental study with pretest and posttest on a sample of ten students.

Shore (1972) found that microteaching was a safe setting for the acquisition of skills in teaching. Studies conducted in India by (Shah, 1970); Marker (1972); Abraham (1974); Joshi (1974); Sharma (1974); and Passi and Shah (1974) with regard to feasibility of microteaching in India context, reveal that microteaching as a training technique, can easily be adopted without using sophisticated hardware.

(ii) Studies related to Cognitive Domain of Teacher Trainees : Devis and Smoot (1969) compared microteaching with participation in discussion groups on teaching.

They found that microteaching students demonstrated extended verbal behaviours, asked fewer convergent and more divergent and probing questions, informed less, clarified more, and uttered fewer procedural and nonsubstantive units. Pupils also initiated and responded more. Van Mondfrens et al. (1969) compared microteaching as a laboratory experience for an educational psychology course with discussion sessions of the same course, the microteaching students did not do worse in content knowledge and found the course more pertinent to their ultimate and immediate goals. Borg (1969) reports on pre and post minicourse scores of a group of forty eight teachers on thirteen observed behaviours. On eleven of these thirteen behaviours related to questioning, significant changes were found in the hypothesised direction. Reed et al. (1970) and Chavers et al. (1970) compared microteaching with lectures related to aspects of education. They reported that microteaching students performed better in terms of teacher competence in a final microteaching session as measured by rating instruments. Bell (1970) and McAleese and Unwin (1971) reported that student teachers could self-evaluate effectively when engaged in microteaching. Vaze (1975) reported the superiority of microteaching treatment in the acquisition

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and no significant difference among microteaching, symbolic and audiomodelling treatments. with regard to three skills of questioning in language oriented group.

(iii) Studies related to Affective Domain of Teacher Trainees : Regarding the affective domain of teacher trainees, many studies [Bell(1970), Ward (1970), Turney (1970), Perrot and Duthie (1970); Stones and Morris (1972), McIntyre and Duthie (1972) and researches done at Ulster University (1971) reveal that student teachers had positive and favourable attitudes towards microteaching. Some results have been reported by Abraham (1974), Joshi (1974), Sharma (1974), and Passi and Shah (1974).

A singular study reports changes related to both domains of behaviour of teacher trainees - affective and psychomotors undergone a course of microteaching. Bush (1966) reported in this regard, in a study carried out at Stanford in 1963, that (i) the microteaching group performed at a higher level of teacher competence than the traditionally prepared group; (ii) performance in the microteaching situation was an effective predictor of subsequent classroom performance; (iii) the trainees' acceptance of microteaching's value was high; and (iv) significant changes were produced in the three skills practised in microteaching.

(iv) Studies related to Psycho-Motor Domain of Teacher Trainees : Goodkind (1968) reported that micro-teaching created (i) greater awareness in specific personal habits and mannerisms; (ii) greater use of specific teaching acts and techniques; (iii) greater insight into the activity and interrelationships of children within the classroom, and (iv) greater awareness of the problems of structuring and pacing in their teaching, when compared with conventional student teaching. Perlberg et al. (1968) and Perlberg and Briant (1969) have used microteaching techniques and portable video records in improving instruction at the university and community college. The conclusions from these and similar projects (Allen and Ryan, 1969) suggest that these media and techniques have been instrumental in modifying university teaching behaviour. Borg (1969), and Langer (1970) made use of the minicourse, a modification of the microteaching approach using instructional films, handbooks and evaluation forms without the help of a supervisor. It has effectively demonstrated its ability to change teachers' behaviour significantly in the desired direction.

In India, Chudasama (1971) found that microteachers as compared with teachers from control group (without

microteaching) made significant gains, in both indirect teacher behaviour and teacher behaviour providing for freedom of response to pupils. Bhattacharya (1974) studied the relationship between the effectiveness of microteaching and conventional practice teaching in developing the teaching skills 'indirectness' (based on the FIACS) in the inservice teacher training programme of polytechnic teachers in Eastern India. It was reported that significant changes in behaviour were produced by the group receiving microteaching treatment, indicating microteaching to be more effective than conventional practice teaching.

The literature reviewed above and studies relating to evaluate the effectiveness of microteaching (second group of studies - University of Stirling, 1973), show three possible settings of microteaching process : (i) The original 'Stanford Classical Model' of microteaching is that of a clinic where microteaching is conceived as providing additional experience independent of other courses; (ii) Alternatively, microteaching can be regarded as an integral component of particular course; and (iii) A third way of using microteaching is to provide students with practice in skills on which they are diagnosed as being weak and in need of remedial treatment (Griffiths, 1973).

From this description, four components of the microteaching process emerge : (i) setting and equipment; (ii) participants; (iii) specified teaching skills; and (iv) a programme for imparting these skills. Most of the research into microteaching has been concerned with the fourth component. Further, this component has been viewed more specifically and intensively into four areas: (i) the nature and range of skills; (ii) the feedback process; (iii) the transfer of skills; and (iv) the personalisation of microteaching practice (University of Stirling, 1973).

Encompassing the above mentioned components in view and the studies reviewed related to the effectiveness of microteaching, it is evident that microteaching is a potential technique of training in bringing out a radical change not only in professional and pedagogical factors but also a tangible change at cognitive, affective, and psychomotor levels of trainees. Next issue is raised that what type of setting for microteaching is more suitable while taking into view the economical aspect and professional gains. Simulation seems to be the answer with special reference to Indian context. Pertinent questions regarding the suitability of simulation are explored in the following caption (1.2.1.).

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1.2.1. Simulation

At present, when heads of practising schools accept student teachers very reluctantly for student teaching; teacher educators cannot justify supervision with large number of student teachers; parents expect continuity of teaching for their children; and student teachers do not get enough time in the schools, what should be the solution to these problems ? It becomes imperative in such circumstances to reach for an alternative. Besides the theory of teaching may be directly related with its practice, better within the confines of College of Education.

Simulation seems to offer an alternative as a way of compensating student teacher under training for lack of actual time spent in practice. This is a relatively recent training technique which can make the transition from course work to field experience more contiguous (Pollack, 1973), and thus abridges the gap between theory and practice; between the way we talk about the job and the way it is done; and between verbal commitment and actual behaviour.

(a) Concept and Nature of Simulation :

Tansey and Unwin (1969) say simulation is an 'analogue', a 'reproduction of the reality', but the model upon which it is based need not be a mathematical one essentially.

Fink (1973) says, 'Simulation is the controlled representation of reality.' The two critical attributes of simulation are : (i) involvement or role playing on the one hand, and a simplified but minimally distorted reflection of some given reality on the other.

For making a distinction from gaming, Glazier (1969) offers a list of characteristics for simulation / gaming techniques. Games, he states, ' (lend themselves) to easily quantifiable subject matter, such as mathematics, science and language ... (and emphasize) manipulation of concrete variables '.... while simulations are 'particularly appropriate where qualitative factors are paramount... (and emphasize) ' human factors ' like : persuasion, power, communication, resource control ... decision-making, and 'psyching-out' actions of others.'

In the area of teacher education, instructional activities would be conducted in games while behavioural problems in the classroom could be more easily handled through simulations. For bringing the situation of classroom into the college, Jacobs (1950) was writing about 'sociodrama' in the training of teachers. Apart from the early approaches in the form of sociodrama, simulation in teacher training has followed two main lines. The first

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method is that of the role play situation. The other technique that is used in simulation is the 'in-basket technique'. This method presents a series of situations which might typically occur in the day of a teacher.

Kersh (1963) developed three in-baskets each containing of twenty items on film for teacher training at Centre for Research on Teaching at Monmouth, Oregon. Cruickshank (1968) with Broadbent has devised a simulation training programme for student teachers. The unit is called the 'Teaching Problems Laboratory' and is intended to give student teachers a chance to make decisions in a lifelike classroom environment.

With a view that simulation / gaming is an effective technique of teacher training, Cruickshank (1971) identified five of the most common justifications in favour of this : (i) Simulations permit students teachers to engage in frequent and severe problems that might not occur during their field work experiences. (ii) Simulation/ gaming can often provide experiences in a low-cost model of a high-cost environment. (iii) Simulation/gaming techniques can compress time by presenting the student teacher with more decision-making points or problem situations in one session than might be experienced in an

entire semester of field work. (iv) Space can also be compressed since simulation / gaming can present variety of school environments to student teacher who is normally limited to one field experience. (v) Simulation/gaming has the potential for immediate feedback, making it possible to identify cause-effect relationships for the student teacher.

(b) Effectiveness of Simulation :

The effectiveness of simulation, in teacher training becomes evident from the following research studies.

Lehman (1970) reported that the use of role playing in student teaching seminars helped student teachers develop skills in inquiry teaching and in developing nonauthoritarian interpersonal relationships which were not developed by controlled student teachers who did not participate in role playing techniques. Stoller and Lesser (1963) found that vicarious media observation experiences in which classroom behaviour was studied did not improve objective test scores in subject matter content but did improve student ability to understand critically classroom lessons that were observed. Binnie (1972) quotes some studies indicate that simulation is as effective as reality in many instances. Some studies have

indicated that students trained through the use of video-tape or film do better in student teaching and in the initial teaching years than those following conventional patterns of preparation.

For successful simulation, feedback element is essential for the learner, thus necessitating a supervisor or instructor. For maximising learning, learner may analyse both what he has done and the effects promulgated by his decisions in the simulated situation (see caption 1.3.0).

The above mentioned research studies on simulation suggest its efficacy as teacher training technique. The whole premise of training is contained through the interaction of three sets of activities : (i) lectures provide factual base for considering a given issue; (ii) guided student readings and discussions provide opportunities for exploration of facets of issues; and (iii) these activities are built around simulation experiences which provide a personal base for knowledge (Fink, 1973). The interplay of processes and content gives the student teacher the greatest opportunity for learning. It is important to note that maximum knowledge emerges from highly 'personalized experience' when linked

to theory and test of action. That set of principles may be viewed as the 'philosophy' of the training programme (Fink, 1973).

Perhaps it will add more to the personal experience of a student teacher, if microteaching paradigm of skill training, is put to simulation. Consequential effect of both can be estimated more in the light of pedagogical principles involved in 'microteaching' as well as in 'simulation'. Moreover, aforesaid difficulties of student teaching (see caption 1.1.0) can also be overcome because both the techniques are insulated from the uninvited criticism from the heads, the parents and indifferent attitude of the student teachers.

Now next issue can be, which teaching behaviours in coordinated manner i.e. teaching skills can be most suitably be adopted for training under microteaching paradigm in simulation ? The following caption deals with the teaching skills in the context of microteaching as a training technique in simulated condition.

1.2.2. Teaching Skills

Technical skills approach (see caption 1.1.0) considers teaching as a complex skill which has to be

analysed into a number of sub-skills, called component skills, that can be identified and practised separately. Argyle (1969) says, 'A skill can be defined as a coordinated activity undertaken in relation to an object or a situation which involves the whole chain of sensory, central and motor nervous mechanisms.' Every 'teaching skill' may be defined ideally as a set of related teaching behaviours which have specified types of educational objectives (McIntyre and Morrison, 1973).

The greatest problem in the design of microteaching programmes is the selection of skills (McIntyre and Morrison, 1973). Certainly in choosing skills, we are working from a position of considerable ignorance of what sorts of behaviour comprises effective teaching (Rosenshine, 1971).

What skills should be chosen for practice ? Allen and Ryan (1969) have made it clear that decisions regarding the selection and development of the skills in the clinic resulted from the discussions and debates of the microteaching staff. Griffiths, (1972) raises a question, namely, how specific should be the analysis of teaching skill ? Rosenshine and Furst (1972) in the introduction of their review of studies on teacher effectiveness suggest that the emphasis on analysis and on specific and denotable teacher

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behaviours is wholly admirable, but the selection of the specific behaviours to be taught is still based on private criteria, ' Teacher training... becomes a procedure for closing the gap between the behaviours which do occur and the behaviours which educators believe should occur.' They go on to say that none of such programmes contains even a detailed review of the literature from which the teacher educators made their selections of behaviours.

Looking into the selection and validation of teaching skills following points need attention :

(i) Is the student trained in 'teaching skills', more restricted in his classroom teaching behaviours, in that he is programmed or does he have more freedom, in that, in a given situation he has a greater range of teaching skills from which to choose ?

(ii) If that skills are presented as separate and discrete units, is the student able at any given stage to select appropriately from his repertoire of skills, and then mesh that skill with others he is using ?

(iii) Is it sensible to emphasise increasing the frequency of specified teaching behaviours whilst not paying very much attention to the appropriateness of such behaviours ?

(iv) Should he teach all skills to all students, or should microteaching programmes be diagnostically based ?

It is evident from the last question that there is need to have research in teaching skills concerned with individual differences among students and the personalisation of microteaching practice (Griffiths, 1973). Specifically stated, this would mean to apply to two particular areas : (i) the interaction of individual personalities and types of learning situations; and (ii) the cognitive styles of trainees (idiosyncratic information processing styles - University of Stirling, 1973).

In addition to validation of existing skills, there is also an important need for the isolation and validation of a wider range of component skills than has hitherto been achieved. As Brusling, (1972) has stated, measures of pupil behaviour ' represent the variables of paramount importance in microteaching research. They can be used not only to assess the differential effects of treatment, but also to relate them to the behaviours constituting the teaching skill under study, thus testing their validity.' It appears that large research efforts still to be aimed at isolation, clustering and validation of

skills in teaching.

Some effects have been made with regard to selection, clustering and validation of teaching skills. Allen and Ryan (1969) have listed fourteen teaching skills. Flanders (1973) has identified fifteen basic teaching skills as demanded by the varied types of transactions. These skills are based on verbal communication only. Skills related to nonverbal communication has not been taken up. Passi and Shah (1974) report eighteen teaching skills which have been analysed at the Far West Laboratory for Educational Research and Development. Four skills, namely, using A.V. aids, teacher liveliness in the classroom; promoting group discussion; and teacher explanation, have been added to the list given by Allen and Ryan. Lalithama (1975) is working on developing a skill based practice teaching programme at the CASE, Baroda. Passi (1975), Joshi (1975) and Lalithama (1975) are developing instructional materials on the lines of Minicourse Handbooks (Borg, et al. 1970, Perrott, 1975). Passi (1976); Sister Marie (1976), and Sharma et al. (1976) have developed different lists of teaching skills required of a teacher in the classroom. Brown and Okey (1973) identified 37 clusters of skills and six functions of teaching. Turney et al. (1976) identified nine clusters of skills, namely,

(i) questioning, (ii) classroom management and discipline, (iii) variability / varying the stimulus; (iv) reinforcement'; (v) explaining / exposition; (vi) set induction / introductory procedures; (vii) small group teaching; (viii) developing thinking; (ix) individualising teaching.

It is interesting to note that among these clusters of skills, there are four skill areas seldom mentioned in American microteaching literature. These are the skills relating to small group teaching, developing thinking, individualising teaching, and classroom management and discipline. They are more of informal teaching situations concerned about the individual child and his development rather than teacher-oriented skills.

The review of literature on teaching skills shows that there is no uniform criteria established so far for selecting the skills. Neither it seems to be possible to identify teaching skills which universally be applied by all the types of teachers in all situations of the classroom. But teaching skills can be developed, at least, in the context of grade, content, type of teacher, etc. An attempt has been made in this direction in India (Lalithama, 1975 and Passi, 1976).

What are the skills which score maximum learning on the part of pupils ? To this end, neurophysiologists have

demonstrated that attention and the orienting reflex are the mechanisms with which all learning begins (Magoun, 1963). Thus, a primary task of a teacher is to get attention. How to get and hold attention for pupils' maximum learning, is a problem common to both teaching and communication. A possible solution to this problem has been explored in the following caption.

1.2.3. Stimulus Variation

Variation and variety have long been associated with both enjoyable living and good teaching. The teacher trainer Gladman (1885) regarded variety in teaching as 'an essential to proper dealing with children'. Today many of the maxims regarding the use of variety and variation in teaching are underpinned by a growing and compelling body of research and theory. Variation here refers to the process of change in teaching. Variety refers to the product of such change. Both seem to be significant aspects of effective teaching.

The introduction of variety or novelty which arises out of variations on the familiar, is the key to attention. Perfectly homogeneous environments are not attention getting, and are, therefore, unlikely learning environments.

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Though students interest is crucial to learning yet interest and attention are by no means synonymous. Students may learn all sorts of subject matter in which they don't have the slightest interest. Our best students are not most interested students but our attentive students (Thompson, 1969). Therefore, the first task of the teacher is to generate attention.

Stimulus variation is the underlying principle applied by the teacher to get maximum attention from students. Stimulus variation can be applied in both verbal and nonverbal communication. In the present study, stimulus variation is applied to those motivating sub-skills which confine to nonverbal domain mainly. Therefore, the literature reviewed here is mainly related to non-verbal aspect though other sub-skills have not been ignored.

The skill of stimulus variation is concerned with the variations the teacher can introduce 'within' and 'between' three aspects of his teaching:

(i) There are variations connected with his manner or personal teaching style.

(ii) There are variations in the media and materials of instruction.

(iii) There are variations in the pattern and levels of interaction between himself and his pupils. (Turney, 1976).

The skill of stimulus variation as it relates to the teacher's manner is specifically concerned with the variations in voice, gesture and movement in the teaching space. Moreso, generally the skill is related to the teacher's 'animation' and 'enthusiasm'. The small but important amount of research in these areas strongly support the use of different components of the skill (Turney, 1976).

Rosenshine (1968), in his study of 'Behavioural Predictors of Effectiveness in Explaining' found that the incidence of teacher gestures and movements were significant variables in social studies lectures which correlated with high pupil achievement in a comprehensive test. Teacher gestures and movements may not only have had the effect of 'arousing or focussing attention' but could have added meaning to verbal communication.

Penny (1969) found that teacher's use of 'verbal markers of importance', such as, 'Now this is important', was significantly related to pupil achievement in tests of social studies and English.

Coats and Smidchens (1966) found that significantly superior student achievement resulted from 'dynamic rather than static' lecture presentations. The dynamic presentations were

delivered from memory, with much vocal inflection, gesturing, eye contact, and animation. A significant relationship was also shown to exist betweenn audience attention and teacher dynamism.

McCoard (1944) in a study, using audio-tapes of speaking and reading by forty, seventh and eighth grade teachers, found that expert ratings of the teachers' variation of both pitch and volume correlated highly with pupil achievement.

Gauger (1951) investigated the differential effects on higher school students of (i) hearing a teacher, (ii) hearing and seeing a teacher; and (iii) hearing and seeing a teacher who gestured or did not gesture. Those students who heard and saw the teacher who gestured, achieved significantly higher adjusted post-test scores than those who heard and saw a teacher who did not gesture.

Jersild (1928) and Ehrenberger (1945) found that significantly more was learned from speakers who varied their presentation than from speakers who did not employ variations.

It seems probable that variations in inflection, gesture and movement comprise an important part of what pupils regard as teacher energy or enthusiasm. This view is supported by the study by Solomon et al. (1964a) in which the

factor of teacher energy contained high loadings for student ratings on 'rapidity of speech', 'mobility', 'gesturing' and 'expressiveness'. In another study the same group of researchers (Solomon et al. 1964b) reported that gains in student comprehension were related significantly to teacher 'energy' and 'flamboyance'. Mastin (1963) also investigated the effects of teacher enthusiasm. The pupil scores on the posttests consistently and significantly favoured the lessons taught with enthusiasm.

Observer and student ratings of teacher enthusiasm have been significantly related to student achievement in a number of investigations. Kleinman (1964) and Fortune (1967) reported that observer ratings on such adjectives as 'stimulating' and 'original' were correlated with at least one criterion measure of student achievement. Canners and Eisenberg (1966) found observer ratings of 'active' and 'varied' in procedure to differentiate significantly between high, middle and low achieving teachers.

In brief, variations in the teacher's manner and personal style, especially those which portray enthusiasm, energy and animation, seem to be related to pupil learning. Important dimensions of variations in manner, are movement, gesture, voice, inflection, verbal focussing, pausing, and

eye contact. Such behaviours make teaching more dynamic and enhance communication.

Stimulus variation, with regard to sensory modes of communication in teaching is also supported by research. A number of psychologists assert that there are often considerable individual differences among children in their sensory acuity. These are 'audile', 'visile', and even 'tactile' types (Turney, 1976). Presumably the audile type would learn to speak earlier than a visile type, but the visile type would learn to read earlier than the audile type (Davitz and Ball, 1970). Recent investigations (Kay, 1958; Levin et al., 1971) suggest individual learning mode preferences of an auditory and visual nature. Other researches have argued that young children learn more effectively by the auditory mode than by visual mode, and vice versa. Recent investigations (Budoff and Quinlan, 1964; Fillmer and Linder, 1970) have yielded conflicting results. Several other studies have indicated the superiority of auditory and visual modes combined (Lockard and Sidowski, 1961). From these research studies, it is revealed that variation in body and sensory modes of communication play a vital role in getting and holding pupils' attention in the classroom.

What are those sub-skills which are related to body language i.e. relating to nonverbal communication in the classroom for effective teaching ? Which of these skills can be put to variation in normal classroom teaching ? These questions have been explored in the ensuing caption (1.2.4) in the light of related literature.

1.2.4. Nonverbal Communication

The teaching-learning process is essentially a system of instructional communication in the classroom. Verbal dimension of instructional communication has taken much attention at the hands of researchers. Nonverbal dimension is a relatively neglected area in educational research. Halpin (1960) states that training programmes for school teachers 'ignore the entire range of nonverbal communication, the muted language in which human beings speak to one another more eloquently than with words.'

Results of a study by Davidson and Lang (1960) imply that teachers communicate different feelings toward children. 'Teachers vary in their inclination and/or their capacity to communicate favourable feelings. Therefore, it is imperative that teachers may be helped to recognize the significance of the feelings which they express toward children, consciously or unconsciously'. Rosenthal and

Jacobson (1968) reported in their book, 'Pygmalion in the classroom', nonverbal cues may play a significant role. Facial expression, touch, gesture, vocal tone, posture, spatial positioning and a bost of other nonverbal variables used in conjunction with verbal cues seem to have been highly influential.

Galloway (1966) highlighting the importance of nonverbal language, says that words are 'slippery customers' when it comes to meaning and the problem of unintentional discrepancies in the use of words while communicating is serious enough to account for profound misunderstandings. To check on the fidelity of verbal statements made by the teacher in the classroom, pupils read through the meanings behind nonverbal expressions. Indeed among many pupils (young and linguistically disadvantaged) the nonverbal is heavily relied upon to reveal the 'authenticity', 'truth', and 'genuineness' of a message communicated by the teacher. For full import of a teacher's perceptions and motivations, pupils attempt to understand the teacher's gesture, intonation, action and silence.

Bernstein (1961) reported that youngsters from the lower classes depend almost exclusively upon the nonverbal messages for the detection of meaning in school situations.

In all fairness, however, many of these youngsters not only read meanings that are not intended by the teacher, but also missed the true intentions of the teacher. Such an outcome is the consequence of two 'language worlds' and especially of two worlds of reality.

Steiner (1965) says vast domains of meanings are the province of nonverbal language. 'Verbal language can deal only with surfaces... reality begins where verbal language leaves off.'

Mehrabian (1968) in a study measuring verbal and vocal language modalities and combining these channels with the facial nonlanguage modality, found that the total message was fifty five percent facial, thirty eight percent vocal and only seven percent verbal. Thus, the study establishes a case for nonverbal communication.

Ekman and Friesen (1968) have put the best rationale and set of assumptions suggesting the significance of nonverbal phenomena for human relationships:

(i) Nonverbal behaviour can be viewed as a language of relationship.

(ii) Nonverbal behaviours are the primary vehicle for expressing emotion.

(iii) Nonverbal cues function as qualifiers in the form of meta-communicature messages that indicate how verbal statements ought to be understood. (Ruesch and Kees, 1956).

(iv) Nonverbal behaviour provides a leakage channel which it is difficult to control. It gives one's true feelings away.

(v) Nonverbal behaviours can be managed to achieve a desired effect with little feedback (Goffman, 1959).

(vi) Certain sets of cues and responses are learned by teachers and students in the classroom.

Following paragraphs are devoted to review the existing literature on nonverbal communication in general and body movement and gestures in particular.

Recently, attempts have been made to deal systematically with nonverbal communication. Birdwhistell (1970) has tried to codify the 'language of body expression'. He has stated :

> There is a language of body expression and motion which is as ordered and structured as the language we speak. Like the language we speak, it is made up in pieces of structure which can be assembled to form orderly sequences of message material which others trained in the same code, can translate and respond to in kind.

Duchenne (1867) did pioneer work on the movements of the entire muscular system for which he is credited the

father of modern 'kinesiology'. 'Kinesies' (bodily expression), according to Birdwhistell (1970) in terms of gestures, movements and expressions has an order and can be studied systematically. He has designated gestures that are like stems of words as 'kinemorphs' and those small parts that make ~~up~~ kinemorphs as 'kines'. Further, it is suggested that 'verbal' and non-verbal' languages as two channels of communication, seem to be tied together in a changing superordinate - subordinate relationship for having full view of human reality.

Allport (1933) has done one of the most comprehensive studies of nonverbal communication. He categorised nonverbal behaviour under four areas : (i) general body, eye, head, face, mouth and limbs; (ii) standing, walking and related activities; (iii) sitting and resting; and (iv) communicating and handwriting. Allport found that movements expressive of personality were not unrelated, but formed coherent, yet perplexing patterns. He further concluded that there was congruence between the expressive movement and the 'inner person'.

Mehrabian (1968) found that movements of the body and head are general indicators of the degree of one's dominance or anxiety in a situation. As a speaker's

anxiety increases, he makes more mistakes when he talks and uses longer sentences in talking to a superordinate and if that person is nodding 'yes' consistently. If a person leans toward another in a conversation he is indicating that he likes or agrees with the other person.

Research Studies on Gestures and Body Movement

Research specifically related to classroom has been done by Jacker et al. (1964) who investigated students' nonverbal movement in the classroom as a form of feedback to the teacher. They reported that there was a pattern of nonverbal cues related to teacher prediction of comprehension and that teachers can be trained to recognize and use them as accurate feedback in teaching.

Miller (1961) has done a unique study of elementary teachers' movements in the classroom. Using the concept of space in a classroom as a variable subject to the teacher's manipulation, he postulated that different kinds of teachers make use of it in different ways. A teacher who is insecure and anxious tends to establish a 'territory' around his desk because it represents a symbol of his authority. His travel pattern tends to be around the front of the room, using the desk as a base. A teacher who is confident in his teaching shows travel

pattern that includes every place in the classroom, particularly among the students.

Similar postulates were made for two different types of students. An insecure and anxious child is apt to confine his movements to his desk. A confident child would be less desk-bound and apt to visit his neighbours in the room.

Another category of teacher uses of space in the vertical plane. An authoritarian teacher would hardly be expected to lean over to be closer to a pupil to help him, but a confident and enthusiastic teacher might make such a movement frequently.

In another paper Miller (1962) discusses the distance between people whom they communicate. Distance is considered a negative determinant of affective interaction and closeness a positive determinant. The principle of least effort - of conversing close to another to conserve energy - was utilized by some teachers who placed the more responsive pupils at the front of the room, or made the opposite use of this principle by placing pupils who created behaviour problems there. It was pointed that this practice could inihibit teachers from forming and working

with small groups.

No one really knows what happens in a child's mind when he sees the teacher moving, standing or gesturing in the classroom. Does he verbalize in his own mind for the teacher when he sees him writing on the board ? Does he think consciously about the gesture ? Probably he does not. We know only that if asked, the student will supply a verbalization for each gesture and the verbalization will indicate a friendly or unfriendly bias (Schusler, 1972).

Review of these research studies reveal that nonverbal communication, in the form of gestures, positions and stances, is an inseparable part of the instructional process. It is important enough that it should be included in teacher training as a contribution to the basic understanding of the role of the teacher in the classroom.

The question is, how can the knowledge of nonverbal communication be used to improve instructional communication in the classroom ? The answer to this question has been explored in this study.

Teachers can be sensitized to nonverbal cues with the help of interpersonal feedback'. It can be possible under two situations : (i) at the preservice training stage,

teachers can be trained in nonverbal skills in microteaching under simulated condition with 'interpersonal feedback' process; and (ii) at inservice stage, teachers can be sensitized to nonverbal cues in real classroom where there is free flow of feedback and interpersonal 'coaching'.

The application of nonverbal theory, research and skill development programme is just beginning to find its place in India and abroad. Complete courses in nonverbal communication have been instituted at Drake, Michigan State, Purdue, Queens, the University of North Dakota, and the University of Wisconsin. Treatment of nonverbal communication in teacher training programmes has been adopted at the Ohio State University and the University of Nebraska in U.S.A. Perhaps an attempt of its own kind has been made in teacher training programme in India in this investigation.

For the development of teaching skills, related to nonverbal communication in the context of stimulus variation, 'feedback' plays a vital role specially in microteaching under simulated condition. Communication may be verbal, or nonverbal or both, it can be aimed at change certain preconceived and pre-determined directions with proper feedback procedures.

To know the role of feedback nature, components, techniques and other aspects in the development of teaching skills in microteaching, the following caption (1.3.0) is devoted to its related literature.

1.3.0. THE FEEDBACK PROCESS

Allen and Ryan (1969) state as one of the five main propositions of microteaching that it 'greatly expands the normal knowledge - of - results is feedback dimension in teaching'. McAleese (1973) regards the provision of feedback as (a vitally important element in microteaching'. Morrison and McIntyre (1975) report that one of the advantages claimed for microteaching is that 'provision is made for much fuller and more objective feedback than in other teacher training procedures.' Cooper and Allen (1971) write, ' The feedback dimension of microteaching is probably the crucial one in terms of changing the trainee's behaviour.'

The process of feedback, an important dimension in microteaching, is emerging a new field of research like modelling. It involves many components which are getting researchers' attention. Possible components involved in the process of feedback can be type of feedback, source of feedback, medium of feedback, form of feedback and

technique of providing feedback.

The type of feedback refers to whether man or machine provides the feedback. Advantage with him (man) feedback is that it helps to provide new perceptions of human life needed im teaching. With mechanical devices, though feedback becomes objectives in approach yet many aspects are missed.

The source of feedback is related to the point of origin. Source can be college supervisor, teacher supervisor, colleague or peer supervisor, pupils in the microclass, self (the microteacher), telephon, audio-tape and videotape.

The medium of feedback is related to the means through which feedback is provided. Medium can be oral, written, telephone conference, listening of audiotape recording and viewing of videotape recording.

The form of feedback is related to the nature of material which is used for providing feedback. Form can be immediately impressions, high inference ratings on predetermined scales, check list based observation and interaction analysis recordings in the form of matrices.

The technique of feedback refers to the combination of type, source, medium and form, mentioned above in number of

ways. Different possible combinations of these can be the recorded impressions in the form of rating or check list or interaction analysis matrices are either spoken only or discussed or handed over to microteacher for critical awareness. Besides recordings on paper or on mechanical device can be either listened on telephone or on audio-tape or viewing and listening both on videotape.

Analysis of the feedback process in terms of type, source, medium and form coupled into different techniques of feedback, has been undertaken in the following section supported by empirical evidences under two headings : live source and mechanical devices.

(a) Live Source of Feedback :

Coming to the analysis of feedback process with regard to the live source - tutor supervisors, peer supervisors and self, to the effectiveness of microteaching, has been widely researched.

Referring to supervisory feedback, Borg et al. (1970) interpret the evidence to suggest that the function of the supervisor can be served equally effectively by other means, and in particular that of perceptual modelling and videotape feedback are present, supervisory feedback is unnecessary. But Griffiths (1972) has argued at greater

length that efforts to justify either supervisor or no supervisor involvement in microteaching programme are pre-mature.

There is evidence to support Griffiths arguments that supervisors can be effective in changing teaching behaviour in microteaching settings. McDonald and Allen (1967) claim that single most effective variable in their studies was ' a form of self-viewing, accompanied by prompting by an experimenter during the self-viewing'. The results of a study by Morse et al. (1970) suggest that students profit from listening to their tapes with a guide and having a personal supervisory conference. However, studies by Acheson (1964) and Young et al. (1971) found no significant differences between supervised and unsupervised groups.

No specific picture has emerged about the conditions and combination of feedback components under which supervisory feedback can be more effective in promoting skill acquisition. The most that can be achieved is the statement of four tentative general possibilities.

(i) The effectiveness of supervision may depend upon the way in which other factors in the microteaching programme are organised. The investigations carried out by Claus (1969) and by Resnick and Kiss (1970)

suggest that the nature of modelling experience provided may influence the effectiveness of supervisory feedback.

(ii) As Claus (1969) and McKnight (1971) suggest, the effectiveness of supervision may depend upon the level of skill competence with which students enter the programme or the stage of training at which supervisors are involved. Supervisors may be effective after the initial stage of basic skill acquisition.

(iii) The effectiveness of supervision may depend upon the expectancies students have about the ways in which supervisors should behave (Johnson and Knaupp (1970), and its contribution may be more strongly reflected in attitude change than in immediate behaviour change measures (McIntyre, 1971).

(iv) One of the possible reasons for the apparent inconsistency of results from studies on supervision is that there has been a wide variation in the nature of the supervisory feedback provided. It is quite evident that supervisors restrict to specific techniques of supervisory feedback (Claus, 1969 and Morse et al., 1970). Besides effectiveness of supervision is a function of the kind of 'supervising strategy' used (Kiss, 1971).

Related to live source, peer or colleague supervisor is another effective source of feedback. Comparatively

little work has been done in assessing the contribution of peer or colleague feedback in microteaching. However, the potential advantage for both teacher and colleague has been discussed by Belt (1967) and Young (1970), and the ideas seem to merit further investigation. Belt (1967) reports that trainees agreed that comments and suggestions made by fellow students were definitely valuable. Young (1970) comparing the effectiveness of the tutor supervisor with peer supervisor team on change scores between teach and reteach on two skills reports that students working in teams performed a significantly greater number of specific teaching behaviours in 'orienting students to the learning task'. They also performed significantly better on three of eight verbal and three of ten nonverbal behaviours aimed at 'reinforcing student responses.' McIntyre (1971) found no significant differences in performance between students who worked in groups with tutors and those who worked in groups without tutors. However, he did find that students working only with peers expressed lower morale, reflected, particularly, strongly in a weaker commiment to teaching careers. Shamma et al. (1976) report the same results as mentioned in McIntyre's study. Another study in progress

by Sharma, Chaudhry and Jogi (1976) may confirm the above mentioned results. Obviously, more research is needed before any conclusion can be drawn concerning the contribution of peer feedback to the effectiveness of microteaching.

Another live source for systematic feedback, quite popular in the States than in Britain, is the pupils. There is evidence that it can lead to change in teacher behaviour. Tuckman and Oliver (1968) compared four conditions (i) pupil feedback alone; (ii) supervisor feedback alone; (iii) both pupil and supervisor feedback; and (iv) no feedback. Results indicated that both treatments involving pupil feedback produced significantly greater change than the other two conditions. Moreover, comparison of conditions (i) and (iii) indicate a failure for supervisor feedback to produce any additional effect other than that accounted for by pupil feedback alone. Gage et al. (1963) found that pupil feedback not only produced change in behaviour but also produced improvement in the accuracy with which teachers perceived pupil opinion. Shively et al. (1970) found that supervisor feedback, based on STCAG forms completed by microteaching pupils, was effective in producing change measured by pupil ratings, but that the mode of feedback was not highly

valued by the students. Ryan (1966) while testing the effects of three methods of presenting pupil written feedback in bringing about teacher behaviour change, found no significant effects, presumably because almost 90 percent of pupil responses were either positive or neutral. This tendency of pupils to assess students favourably during microteaching has also been found at Stirling. Morrison and McIntyre (1973) suggest, the positive contribution of pupil feedback is likely to occur only 'when the same pupils are involved in microteaching over a considerable period and can be trained in the use of rating scales or other instruments.'

Under live source, self feedback seems to be the potential source of skill acquisition in microteaching. Birch (1969) reports self analysis produces significant changes. It can be facilitated from supervisor, fellow students and school pupils. Observation instruments can be used during critique session. Discussion can take place on these or these can be handed over to the microteacher with written comments and/or rating of his skill performance (Allen and Ryan, 1969, Appendix; Perrott and Duthie, 1970). Sadker and Cooper (1972) cite a study by Harrington (1970) showing that the presence of a

supervisor is not always necessary. Critiques by self, another student, fellow instructor and supervisor were judged to be equally effective. The minicourses of the Far West Laboratory have demonstrated that with the use of highly structured materials, significant behaviour changes can be assisted by teacher self-evaluation (Borh et al.1970). Macquarie University students expressed strong preference for having self-analysis supplemented by feedback from fellow students and supervisors (Lewis et al., 1973). Johnson and Knaupp (1970) report that students expect their supervisors to give them opportunities to find their own teaching styles. Waimon and Ramseyer (1970) found that sometimes supervisors were ineffective in providing feedback because they discussed ' diverse and often unimportant matters during supervisory conferences', rather to concentrate on one component task of teaching at a time. Conclusion can easily be drawn from the above discussion that self-analysis and self-involvement is of vital importance in skill learning.

(b) Mechanical Source of Feedback :

Another major area where different components of feedback processes are clustered around are the mechanical replays and their manipulations under different strategies and settings. Research studies reveal two main currents in

this field : (i) study of the comparative effectiveness of videotapes and audiotape feedback; and (ii) the study of self viewing and information selection (Griffiths, 1974).

The video-audio comparison is one which has been a point of controversy among researchers. The videotape alternative generally gains support. Perlberg (1970) writes that audio-tape recordings are 'limited to verbal interaction in the classroom and thus do not provide the whole picture. McAleese (1973) indicates that 'microteaching is, nevertheless, found to be more effective if both sound and vision recording can be made.' Stones and Morris (1972) too claim that 'it is generally agreed, however, that the availability of video recordings enhances the effectiveness and flexibility of microteaching.'

Griffiths (1972b) has argued that there is a need to develop more discriminating ways of using mechanical feedback. In comparing the effects of videotape and audiotape feedback under different strategies, Gall et al. (1971), Shivley (1970), Acheson and Tucker (1970) and Ward (1970), suggest that for some skills audio tape feedback can be equally effective and possibly superior to the videotape mode. Where visual data are needed e.g. nonverbal skills, videotape feedback is more effective.

Further, regarding the popularity of videotape feedback, MaCleod (1973) has pointed out, 'surprising that so little is known about the processes of information selection carried

out by the viewer. Viewing his own teaching performance.' Salomon and McDonald (1969) report one of the few studies in this area. They suggest that video replay can be regarded as feedback only when the viewer knows what behaviours are expected of him and accept these behaviours as desirable. Further, they found that the majority of reported observations were concerned with physical appearance, while observations concerned with teaching behaviours were relatively rare. Morrison and McIntyre (1973) say that ' the value of videotape or audiotape feedback depends on how well students have been prepared for practising a skill. '

The contribution of mechanical feedback in microteaching is, therefore, more complex and intricate than some practitioners admit. Its contribution may depend upon the nature and contribution of other components of feedback process in particular and microteaching programme in general.

From the related literature reviewed above under two major captions - live source and mechanical source of feedback, shows that though the feedback process in microteaching has received considerable research attention yet there are very few consistent results. Certainly

there is enough evidence that tutors, peers, pupils, self and mechanical devices can provide feedback which produce changes in teaching behaviour. Equally, there are studies which demonstrate that such feedback can be ineffective. Sufficient to say that research needs to be directed to evolve a model or theory of supervision in the context of microteaching, keeping its base on the principles of behaviour modification. Further, the main components like type, source, form, medium, technique and strategy of feedback may be viewed in different perspectives giving more tangible results.

From the above discussion, a suitable strategy with regard to feedback in microteaching emerges in Indian context :

(i) The use of hardware like telephone, audiotape and videotape is not possible in India at present, due to high cost and its sophistication.

(ii) College supervisors generally fail to devote much time in student teaching, due to high ratio of supervisor - student teacher. In microteaching, it is still more difficult to spare sufficient time where individual care is needed.

(iii) Pupils are though quite effective in providing feedback to microteachers yet they may not be readily available due to certain administrative and pedagogical reasons.

(iv) Research studies reveal that peer supervisors can play equally effective role as supervisors in providing feedback to microteachers. Moreover, peers can also understand the practical difficulties of their colleagues in a better manner than college supervisor. Besides, they are readily available in the microteaching programme.

It is evident that peer supervisory feedback seems to be more effective and pedagogically sound in the present context in India. Endorsing this view, Guelcher et al. (1970) in their microteaching programme, have a step entitled 'Peer Group Microteaching'. This shows potential contribution can be made to this end if peers are involved as supervisors in microteaching. Present study aims at exploring a strategy of providing feedback to microteachers through peer supervisors, using different techniques of providing feedback through software materials only.

It can safely be viewed that feedback process is a crucial component in microteaching for the development of teaching skills. Further issue can be raised whether there is more possibility of positive transfer of skills developed in microteaching to real teaching if proper feedback is provided. Possibly this may be one of the important factors but other factors will have to be taken into consideration. Those factors affecting positive transfer of training from

microteaching to real classroom teaching have been studied in the light of research studies in the following caption (1.4.0).

1.4.0. TRANSFER OF TRAINING

Microteaching as a training technique aims at to develop teaching competence which ultimately may be transferred to real teaching in the classroom. It is difficult to say without research evidence that how much transfer of training does take place from microteaching in simulation condition (Laboratory Training) to microteaching in real condition (Actual Teaching). Theories of transfer of learning (Thorndike, 1923); Osgood, 1949) show that transfer does take place only when there are common elements between two tasks or it is helped with generalisation of experience which works in similar situations. Osgood et al. (1957) suggest that 'task similarity', that is, the similarity of stimulus-response relationships between the old and the new situations, is a condition for maximum transfer. In other words - transfer will be greatest when the training conditions are highly similar to the transfer task', i.e. actual classroom teaching. The question here is : how similar is microteaching to the real classroom situations ? Allen and Ryan (1969) have consistently asserted that microteaching is 'real teaching'. This view is

reiterated by Cooper (1971) when he defines microteaching as 'a teaching situation which is scaled down in terms of time and number of students, but which is not synonymous with simulation, as the teachers, students, and lesson are all 'real.'

McAleese and Unwin (1971) unequivocally base their interpretation of microteaching on two concepts - 'simulation' and 'sensitisation'. Perlberg (1969) also states that microteaching contains elements of simulation and holds that although it is not a substitute for the real classroom experience, it is the next best approximation of this reality. Bjerstedt (1968) takes the middle road when he views microteaching as 'structured realism', and, therefore, more 'pedagogically sound' than the real classroom. The realistic situation can have such a low degree of structuring that its information per unit of time is very small.

It is clear from these diverse viewpoints that there is need to decide which aspects of microteaching involve simulation which bring more transfer.

Turney (1976) invites attention of the researchers on the following aspects of microteaching for maximum transfer of training.

(i) The ways of linking microteaching with practice teaching with a view to develop teaching competence.

(ii) Thinking regarding post-microteaching feedback schedules to sustain the performance of recently acquired skills in microteaching.

(iii) The ways of sequencing of teaching skills into macrosituation using larger classes, groups and longer teaching spisodes.

(iv) The problems encountered by teachers of different subjects and with different personal characteristics in transferring teaching skills to the classroom.

(v) The transferability of teaching skills developed in different sequences and in special groups.

(vi) Thinking regarding the long term retention of skills developed through microteaching and the need for review and retaining procedures to keep skills at high level.

Bartley (1970) suggests that a pre-requisite for successful transfer is a thorough understanding, on the part of the student teacher, of the training materials. Besides, transfer of training may depend upon many factors, namely, the nature of skill, modelling, process of feedback, setting of training, personnel involved, taxonomy of objectives, nature of content, criteria developed for teaching competence, etc. It seems to look into the transfer of training, means to look into all possible such factors affecting such a complex process of teaching.

Individual studies on different skills like questioning, reinforcement, variability and so on have been conducted showing positive transfer of training in real teaching. But such studies which may give picture of total or partial transfer of training to real classroom have not been observed.

There seems to be a gap between microteaching as a training technique and transfer of this training into real classroom, because the demands of real classroom are not sufficiently met with.

Some of the studies reveal doubt regarding transfer, as there is lacking correspondence between component skills and conceptual structure of curriculum content (Perrot 1972). McIntyre and Duthie (1972) also comment on the lack of balance between curriculum seminar content and the component skills and student dissatisfaction with the lack of connection between psychological theory and the skills. It shows that the task analysis and fractionation techniques by which the component skills of microteaching are operationalised, has less relevance to actual classroom setting.

Berliner (1969) says ' Investigators still need to examine the nature of transfer.... Situational cues which

through training may elicit desired teaching behaviours in microteaching, may not be present in real school settings, and transfer of training may not occur. Through concern for reducing the complexity of the classroom ... a situation yielding little transfer effect to the classroom may have been produced.' Turney (1976) says microteaching is not intended to supply teachers with all the skills required for professional competence. Its special concern is with behaviours displayed by teachers in face-to-face encounters with pupils in the classroom. The skills which microteaching is designed to develop are, ideally, classroom behaviours that are specific, definable, observable, demonstratable, quantifiable and known to be causally related to desired pupil learning.

Studies (Flanders and Simon, 1970; Flanders, 1970; Rosenshine, 1970; and Rosenshine and Furst, 1972) have shown the relationship between teaching behaviours and measures of pupil achievement. Dunkin and Biddle (in Turney, 1976) have conducted the most comprehensive review of classroom interaction research to date in this regard. However, none of the above review was oriented specifically to the question of the validity of the teaching skills commonly included in microteaching programmes.

Based on the criteria mentioned above with regard to pupil achievement and thus more of transfer of training in teaching competence. Turney (1976) has pointed out certain defects in the list of skills followed at Stanford and Berkeley. Skills like 'elicit children's use of new language', and recognizing attending behaviour, are not defined in terms of observable teaching behaviours at all and have not been researched in relation to pupil learning in the classroom setting. But studies conducted in India by Thresiamma (1975) and Joshi (1974) seems to be a solution to this direction.

Among the many microteaching experiments reviewed, there have been so few that have built pupil learning criteria into their designs. Moreover, many concepts of teaching behaviour remain to be operationalized and empirically explored. In addition, many of the variables already researched have not been explored in varying contexts (Turney, 1976) which will illustrate the possibility of transfer of training to real classroom.

With the dearth of such information, teacher educators may look beyond classroom research to formulate teaching skills for better transfer of training. At present, ' Teaching Skills Classification and Documentation System', developed at Sydney, (1976) Lalitha (1975) and Passi (1976)

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at CASE and Sharma et al. (1976) at Abohar, India is an attempt to this direction.

In order to see that the acquisition of the skills of the specified microteaching skills led to effective classroom teaching with regard to professional competence, a survey conducted at Sydney by Turney et al. (1976) showed positive results. The University of New England and Macquarie University claimed that the skills of questioning which were presented in microteaching led to effective teaching. Newcastle Teachers' College thought that more effective teaching was brought about simply by making students aware of the skills of teaching. Mount St.Mary College claimed that effective teaching would increase provided that desired outcome were known and participants held positive attitude. Two of the three programmes which were still uncertain that effective teaching resulted (Canberra CAE and William Balman Teachers' College) indicated that this opinion was held because no research evidence was available to permit a clear statement of view point. However, both programmes hoped that effective teaching would result from their microteaching practices.

Some fellow up studies need to be undertaken in order to find the extent of transfer at different intervals. Such studies are being planned at the CASE, BARODA. This study is also aiming at to see the extent of transfer of teaching competence to real classroom teaching after having a practice of skills in microteaching under simulated condition.

1.5.0. STATEMENT OF THE PROBLEM

From the frame of reference of the related literature reviewed above, it appears that questions related to (i) the feasibility of microteaching in Indian condition; (ii) the effects of different techniques of feedback upon the attainment of teaching skills; and (iii) the transfer of training from microteaching to real classroom teaching are wanting more attention of the researchers in Indian context. Therefore, the present study namely, ' Effects of Different Techniques of Feedback upon the Attainment of Teaching Skills related to Stimulus Variation among Teachers' was undertaken by the investigator.

The key words in the title, stand for the following meanings :

(i) Feedback :

Feedback is a process of communicating the knowledge of results to an individual. Human learner is viewed as a self-regulating cybernetic system who relies on feedback in his effects to maintain goal-directed behaviour. The more rapidly the learner can receive feedback, the more rapidly he can be expected to modify his behaviour in the direction of discernible objectives and thus, increase his efficiency in the acquisition of teaching skills.

(ii) Techniques of Feedback :

The process of feedback involves many components like, type (live or machine), source, medium, form and technique. Here, the connotation of technique of providing feedback in microteaching has been taken, the way á different components are clubbed together to bring a behavioural change in the teacher. Three techniques of feedback used in the study namely discussion, oral and written, involve different components mentioned above, into different settings.

(iii) Teaching Skills :

A skill may be defined as a coordinated activity in relation to an object or a situation which involves a

whole claim of sensory, central and motor mechanisms. The performance or the stream of actions is continuously under the sensory input. This input drives in part from the actions performed and corrects the performance which later on is nicely adjusted. Individual is carrying out actions which are related to consequences.

Skills used in this study, have connotation to teaching in the classroom. Three teaching skills, namely, body movement, gestures and shifting sensory channels have been selected out of many teaching skills used by a teacher in the classroom.

(iv) Stimulus Variation :

Change in classroom environment (chain of stimuli) brings variety and novelty for getting pupils' attention in teaching learning process. Here in this study, stimulus variation means the variation or change in teachers' activity in the classroom and bringing change in the classroom environment thus getting pupils' maximum attention in teaching learning process.

The problem is stated more specifically in terms of objectives, hypotheses and scope given below in captions 1.5.1 to 1.5.3.

1.5.1. Objectives

The study was undertaken to fulfill the following three objectives :

(i) To study the feasibility of microteaching as an innovative technique in Indian conditions without the use of hardware.

(ii) To study the differential effect of three techniques of providing feedback on the attainment of teaching skills related to stimulus variation. Three techniques of peer feedback selected for the study were discussion, oral and written. Two cycles (four-teach and reteach) per skill were delivered for practice. Peer supervisors and self ratings were taken on two skills and in the case of third skill only peer rating was taken. Skills related to stimulus variation were body movement, gestures and shifting sensory channels.

(iii) To study the transfer of training from microteaching under simulated conditions to real classroom teaching.

1.5.2. Hypotheses

H_1 - There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of body movement.

H_2 - There is no practice effect of lessons upon the attainment of the skill of body movement.

H_3 - Peer and Self do not differ in their rating of the performance for the skill of body movement.

H_4 - There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of gestures.

H_5 - There is no practice effect of lessons upon the attainment of the skill of gestures.

H_6 - Peer and Self do not differ in their rating of the performance for the skill of gestures.

H_7 - There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of shifting sensory channels - total record of events.

H_8 - There is no practice effett of lessons upon the attainment of the skill of shifting sensory channels - total record of events.

H_9 - There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of shifting sensory channels - total shifts in events.

H_{10} - There is no practice effect of lessons upon the attainment of the skill of shifting sensory channels - total shifts in events.

H_{11} - There is no difference in the attitude of three experimental groups (discussion feedback treatment-E_1; oral feedback treatment-E_2; and written feedback treatment-E_3) towards microteaching programme.

H_{12} - There is no difference in self evaluation of three experimental groups (discussion feedback treatment-E_1; oral feedback treatment-E_2; and written feedback treatment-E_3) towards microteaching programme.

H_{13} - There is no differential effect of two different techniques of training - microteaching simulation and concentional teaching practice with regard to general teaching competence, transferred to classroom teaching.

1.5.3. Scope of the Study

This experimental study having two phases (pilot study and final study) confines to the study of microteaching as a training technique in Indian context without the use of hardware material. The study focuses its attention on the process of providing feedback in microteaching situation and the extent of transfer of training from microteaching to real classroom teaching. Three skills of teaching have been selected for the study related to stimulus variation with special reference to nonverbal communication in the classroom.

1.6.0. CHAPTERISATION

The study at hand has been reported under the following chapters :

I Introduction - This chapter reports the frame of total study, introduction to the study in the light of related research literature available under different captions, namely, the present study,

background, microteaching, simulation, teaching skills, stimulus variation, non-verbal communication, the feedback process, transfer of training, statement of the problem and chapterisation.

II Pilot Study - This chapter reports the first phase of the study (pilot study) : to study the feasibility of microteaching as an innovating training technique in Indian context and to take decisions and drawing out guidelines for the second phase (final study).

III Method and Procedure - (final study) - This chapter reports the method and procedure adopted to complete the second phase (final study) in the light of decisions taken and guidelines drawn from the first phase of the study (pilot study).

IV Analysis and Interpretation of Results - This chapter reports the analysis of data collection in second phase (final study), suitable statistical tools were applied for the interpretation of results.

V Discussion of Results - This chapter reports the discussion of results reported in fourth chapter and findings of the study.

VI Summary, Conclusions, Implications and Suggestions for Further Research - This chapter reports the whole study (first phase and second phase) with findings in brief.

- Bibliography
- Appendices