CHAPTER II:

A REVIEW OF RELATED LITERATURE

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2.1 INTRODUCTION

The study has been set in proper perspective in the first chapter and it was found that the Macro approach followed in student teaching programme needs to be much desired. Teacher competency and Teacher behaviour is not a new field for the researchers in education. Much work is being done in this field yet the standard of teaching is falling day by day in our schools. So, the need is to attract more and more researchers to continue a systematic research in the field of teacher effectiveness and teacher behaviour. Many innovations have been tried and are yet being tried in the field of education to study teacher behaviour and microteaching is one of them. It is a field where researches have been conducted abroad and in India also. But the work is so scanty that it does not give a detailed knowledge about the effectiveness of Microteaching in modifying teacher behaviour.

When these student teachers go into the schools to take up jobs they fail to communicate themselves effectively. It is because they are not at the pre-service level trained to use different teaching skills. It is being realised that in order to make teachers effective communicators they should be trained in
teaching skills. For the last 7 or 8 years number of studies had been carried out to explore the possibility of identifying and developing teaching skills in Indian Conditions. It would not be out of place to say that great deal of research in this vital area of Micro-teaching has been done in foreign countries. Keeping this in view the investigator felt it obligatory to make a review of what has been done both in India and abroad. The pages that follow would present the review of related literature studies in this area.

In Order to present the review of related literature in research some plan of work should be followed. The available literature has been classified, for the purpose of the present study, as under:-

1. Literature relating to the field of teacher behaviour upto 1964 (i.e. before the concept of Micro-teaching was coined in Stanford University.)

2(a) Literature between 1964 and upto date in foreign countries.

(b) Literature between 1964 and upto date in India.

Research on teaching behaviour and teacher effectiveness is over half a century. It is one of the most potential areas in educational world.
This research was done in many dimensions. Researches in this area have mainly focused the following aspects:

1- Identification and analysis of the components of teacher behaviour.
2- Preparation of tools and their standardisation for measuring teacher behaviour.
3- Teacher effectiveness in relation to pupil achievement.

The studies conducted between the years 1939 to 1946 mostly explored the dimensions of "dominative - integrative climate" and "pupil behaviour". The emphasis was to find out how far teachers, through their contacts with the pupils modify their behaviour and thereby set the tone of the class. Another thing that the studies reveal during this period was the teacher behaviour that a teacher once develops persists for many years.

Orleans and others (1952), found that despite numerous studies the knowledge of teacher effectiveness and means to measure them were missing, Marsh and Wilder (1954), while reviewing quantitative studies on teacher effectiveness, failed to discover
even a single, specific observable teacher act whose frequent occurrence was significantly related to pupil outcomes. Various studies concluded that much of the work on teacher effectiveness is irrelevant either because valid criteria of teacher effectiveness were not used or because objective measures of teacher behaviour were not taken. Studies by Smith, (1962), Ryans, (1960, 1963), Biddle, (1964), Soar, (1964); Gage 1967; and Turner, 1971 proved that there is lack of adequate conceptual framework in Teacher effectiveness. Lack of agreement on teacher competence was proved by the studies of Orleans and others (1952), Johnson, (1955), Medley and Mitzel, (1963) Biddle, (1964), and Soar, (1964; and Soar, (1964). Studies by Ackerman, (1954), Hewsm, (1960) Medley and Mitzel, (1963), Biddle, (1964) and Soar, (1964) concluded that there was absence of objectives and reliable tools to assess the different variables of teaching behaviour. Problem of inadequate methodology to assess the qualities of teacher behaviour was brought to light by the studies of Orleans and others,
(1952), Ryans (1960), Medley and Mitzel (1963), Gage, (1963; 1967), Biddle, (1964, 1967), Rosenshine, (1971) and Jangira, (1974). So, all these studies concluded that research on teacher behaviour was barren and disappointing.

This disappointment and frustration stimulated the researchers to achieve the much needed breakthrough to meet the challenge of studying teaching behaviour and its effectiveness. All the studies concentrated on developing reliable and objective tools to observe, record and analyse teaching behaviour. Gage (1965) echoed the emerging optimism in research on teaching behaviour when he analysed and studied various desirable behaviours of teacher. This study of desirable behaviours of teacher lead the researchers to conclude that there are definite patterns of teacher-pupil interaction in the classroom and these can be objectively measured and characterised. They further reached to the conclusion that pupil achievement, perception and classroom climate are interrelated. The review of the studies between 1900 to 1966 show that teacher’s acceptance and use of pupil’s ideas was having
significant influence on pupils achievement, attitude etc. The review also included the studies attempting at modifying classroom behaviour of teachers through systematic feedback.

In 1971 it was concluded that process/product studies are fruitful in generating some of the best variables on relationship between teacher behaviour and student achievement. The review of the studies between the year 1971 to 1974 concluded that though many studies have been conducted and were coming up in the field of studying teacher behaviour yet the number of such studies was insignificant and needed research efforts with improved design, methodology and analysis. Gage (1967, 1972), Biddle (1967), Turner (1971) and Rosenshine (1971) have provided direction of research in the area. Gage, Biddle, Turner, Rosenshine all provided suggestions for 'describing' and 'Improving' teacher behaviour.

During these years a number of studies were conducted using effective use of feedback based on interaction analysis, singly or combined with simulated teaching
skills training or micro-training in modifying the behaviour of pre-service or in-service teachers in the better direction.

2.2 **Pre-Microteaching Studies**

H.H. Anderson and his associates (1939, 1945, 1946) carried out studies relating teacher contacts and pupil behaviour. Using two separate observation tools - one to assess teacher behaviour along "dominate-integrative" climate dimension and another to assess pupil behaviour, and concluded that the dominative and integrative contacts of the teacher set a pattern of behaviour that spreads throughout the classroom and teacher was found to be the major factor that sets the climate of the class. The developed behaviour of the teacher was found to persist even in the next year with altogether different students. The studies further concluded, when a teacher has high preparation of integrative contacts, pupils show more spontaneous initiative, voluntary social contribution and acts of problem solving. Lastly it was found, when a teacher has high preparation of dominative contacts, the pupils are easily distracted from school work and show rejection.
of teacher domination. Flanders (1951) conducted a similar study under laboratory conditions of the teacher and found that when various contrasting behaviours of teachers were exposed to one pupil at a time, a sustained dominative pattern was consistently disliked by the pupils, reduced their ability to recall and when the students were asked to reproduce the studied material it produced anxiety and heartbeats.

White and Lippet (1960) studied the effects of authoritarian, democratic and Laissezfaire leadership on eleven year old children in club activities and found that club members under authoritarian leadership developed a pattern of aggressive domination towards one another and they developed a submissive attitude towards their leader or they persistently demanded attention from the leader. Perkins (1961) concluded that integrative type of climate is more conducive to the growth and development of the child than dominative type.

Besides dominative and integrative dimensions of teacher behaviour Ryan explored many other
dimensions in his classic study entitled 'Characteristics of Teachers'. The study covered more than six thousand teachers working in 1700 schools and is extended to six years. Many of the studies involved classroom observation by carefully trained and re-trained observers to discover patterns of teacher behaviour and associated pupil behaviour. Other investigations surveyed teacher activities, preferences and attitudes.

The findings are that older teachers were at a disadvantage compared with the younger teachers except from the standpoint of systematic and business-like classroom behaviour. With regard to sex he further concluded that men were less responsible and businesslike in classroom behaviour and favoured democratic classroom practices, more inclined towards child-centred education and more emotionally stable than women.

As far as the marital status of the teacher is concerned Ryan concluded that there is significant difference between married and unmarried teachers with respect to various classroom behaviours and attitudes. But these differences often vary according to school
level, grade, and subject taught. e.g. At the elementary school level, the married group attained more favourable scores in businesslike classroom behaviour and child-centred education. But at the secondary school level, the single group attained more favourable scores on the same variables. With respect to academic achievement teachers who had been outstanding students scored higher than other groups on most scales including friendly, responsible, stimulating classroom behaviour, and favourable attitudes towards pupils, democratic school practices etc. Moreover, the teachers who entered the profession because they loved schools, because of its social service character and because of higher intellectual level scored higher on most of the teacher characteristics under study than those teachers who joined the profession because of its social status.

Flanders, Nelson, Morrison and others also identified a number of characteristics that influence the attitude, academic achievement and behaviour of pupils. Though these researches also used systematic
methods of observation like Flanders Ten Category System, yet their emphasis was on studying verbal behaviour. Studies of Flanders (1965, 1969, 1970) concluded that teacher influence had positive relationship with pupil achievement and pupil attitude. He found when pupils have opportunity to express their ideas and when these ideas are used into learning activities, the pupils learn more and develop more positive pupil attitudes towards the teacher and the learning activities.

Nelson (1964) and Morrison (1966) found significant relationship between teacher influence and adjusted pupil achievement scores of language usage, social study skills, arithmetic computation and problem solving and attitudes. Lashier (1967), in a study to find out relationship between verbal behaviour of student teachers, and achievement and constructive attitudes of eight grade pupils during a six week period of instruction concluded that they are positively related. Davidson (1968) found positive relationship between teacher influence and children's Critical Reading.
Furst (1967) used Flanders Interaction Analysis to study the influence of teacher behaviour on pupil achievement. Fifteen teachers and 345 students in seven high schools in the metropolitan New York area participated in the study and it was found that teachers of the high school achieving group were more indirect than direct. Teachers of the low achieving group tended to be more direct than indirect influence. The teachers of the average group tended to minimise affective behaviours, concentrating on lecturing.

Herman (1967) conducted a study among fifth grade children of three categories - above average, average and below average to study the specific kinds and lengths of activities which occurred in a social study period from the time it began until it ended. The study also assessed the teacher-pupil verbal behaviour which occurred during the observations. The study concluded that teachers of above average group were more indirect i.e. they used more praise, questions and acceptance of pupil ideas than they used lecture, commands and criticism in their verbal behaviour patterns, the teachers of the average group were neutral i.e. one direct statement for each
indirect statement in verbal behaviour patterns, and the teachers of the below average group were direct in their verbal behaviour patterns.

Scantz (1967) studied the effect of teacher influence on verbal recall of the high and low ability pupils. The study involved 24 girls and 37 boys. The study showed that both the groups showed learning increments. If both groups were assumed to be comparable on the pretest, their learning increments were greater as measured by both tests through mean scores following indirect method.

Amidon and Giammettei (1967) identified 33 superior teachers as adjudged by their supervisors and administrators and compared them with 120 randomly selected teachers constituting the average group, on classroom behaviours. The superior teachers were found to be more indirect than the average group.

Pankratz (1967) located 5 'high' and 5 'low' teachers teaching school Physics from a sample of
by using Principal's ratings, class average of a pupil attitude inventory, and a "teacher situation-reaction test", completed by each teacher. Using expanded version of Flanders interaction Analysis Categories, developed by Hough, it was found that the teachers classified as more effective according to the three scores made more use of the ideas and opinions expressed by pupils .01 level of significance than the less effective teachers.

Weber (1968) and Soar (1969) found pupils with teachers using indirect influence in the classroom scoring higher on verbal creativity than pupils with teachers using direct influence. Alexander (1970), in mechanical drawing classes found classroom climate associated with the level of manipulative skills the pupils developed. Using Withall's technique, learner centred climate was found to enhance the development of significantly higher levels of manipulative skills in the children.

Parakh (1965), Dodg (1966) Johns (1968) studied the relationship between teacher influence and level of thought provoking questions asked by the pupils.
The studies report a positive relationship between teacher influence and levels of the questions asked by the pupils. Indirect teacher got higher level of questions from the pupils than the direct teachers, though the incidence is very low.

Miller (1966), in an experiment with four teachers, each teaching four lessons in a "responsive manner" and a "directive manner", found that students in "responsive" teaching viewed the lessons more favourably and exhibited significantly higher level of thinking than the students in directive teaching. But a few studies, Snider (1966), Barking (1967) and Measel (1967) failed to support the above relationship.

These studies gave rise to studies linking teaching process to teacher characteristics and formative experiences. These were known as Presage-Process Research.

Flanders (1963) planned a project in which he studied the effects of the analyses of teaching behaviours of teachers through interaction analysis.
The purpose of the project was to increase the flexibility of teacher influence and to increase the use of those teacher behaviours which support pupil participation in classroom learning. The two inservice programmes were differently administered through two different types of role the instructor was to perform. The teachers spent 30 hours in formal training sessions. Feedback was provided on the basis of interaction analysis. The training programme based on interaction analysis was found to be more effective in producing change in most of the teachers than the conventional programme.

Amidon and Powell (1966) conducted an experimental study involving four groups of 15 student teachers each. The first group had interaction analysis and seminar, and was supervised by a cooperating teacher trained in interaction analysis. The fourth group had learning theory and supervised by a cooperating teacher trained in learning theory. It was found that the student teachers who knew interaction analysis talked less, were more indirect in their use of motivating and controlling behaviours, were more indirect in their overall interaction patterns.
and used more extended indirect influence than the student teachers who were not trained in interaction analysis. It was further concluded that the student teachers whose cooperating teachers learnt interaction analysis used less extended direct influence than their counterparts.

Moskowitz (1967) studied attitudes of the cooperating teachers. The cooperating teachers received 30 hours of training in interaction analysis, while the student teachers received 60 hours of interaction analysis. The student teachers were administered TSRT, CTAQ and STAQ, to assess their attitudes. Moskowitz found that trained cooperating teachers and trained student teachers who worked together, used significantly more indirect teaching patterns, than untrained cooperating teachers and untrained student teachers working together. It was also concluded that the mean scores of the group in which only cooperating teachers were trained was positive. Third was the group in which cooperating teachers were not trained, but their student teachers were trained. The group in which both cooperating
teachers as well as the student teachers were untrained was at the bottom. Zahn (1967) also concluded that the use of interaction analysis as means of supervision of student teaching brought positive change in the attitudes of the student teachers.

Simon and others (1966) and Kirk (1967) reported that student teachers trained in interaction analysis tend to be more accepting, have more student initiated talk are less directive, less critical, have more extended student initiated talk, and less silence and confusion, than the student teachers trained in learning theory alone. When both student teachers and cooperating teachers know interaction analysis, the students have maximum opportunity to develop their own styles of teaching and appear to increase individuality in teacher behaviour.

Hough and Ober (1967) report a two year experiment of course revision and evaluation. Five treatments involving various combinations of methods
OF teaching human relations skills and the analysis of classroom behaviours were planned. It was found that the subjects who were trained in interaction analysis used in their teaching significantly more verbal behaviours related to higher achievement and more positive student attitudes towards their teachers and school.

Lehman (1967) trained 30 student teachers in interaction analysis and 30 student teachers of control group, who were not trained in interaction analysis. He found that the student teachers in the experimental group used more indirect and less direct teacher behaviours than the control group in their student teaching even 4 to 12 months after their training in interaction analysis.

Hough and Amidon (1967) in a study to test effectiveness of the two courses, one based on interaction analysis and another on learning theory, found that the student teachers trained in interaction analysis were adjudged to be more effective than the control group in their student teaching.

Hanny (1967) reports that preservice teachers
who are highly dogmatic as measured by Dogmatic scale and who receive "less desirable" scores on the Teaching Reaction Test can be taught interaction analysis, and that they are able to use this system to control their behaviour and use desirable behaviours that affect classroom climate. Ishler (1967) successfully helped student teachers in changing their verbal behaviour from teacher-centred to learner-centred through feedback using Withall's Social Emotional Climate Index.

Davidson (1968) in an experiment found that feedback based on interaction analysis when provided to a group of teachers, enabled them to modify their influence in the classroom such that children's critical thinking developed and there was significant decline in non-productive thinking.

There are many studies which emphasised that Interaction analysis using Reciprocal Category System of Interaction Analysis and micro-simulated teaching experiences were more useful in deciding methods of teaching and student teaching. Wright, Nathall and Lawrence (1969) conducted a study on shaping classroom verbal behaviour of teachers. They reported when
the student teachers are provided opportunity to observe the lessons, to learn interaction analysis and receive feedback through micro-teaching, they understand and use the teaching strategies better. Holcomb (1970) improved attitudes of the student teachers through Kinescopic observation of their teaching behaviours and providing feedback based on micro-teaching.

2.3 Review from India

In (1944) Samant surveyed teaching of mathematics in the Bombay province, Narayanswami (1960) surveyed teaching of social studies in Madurai, Dave and Saxena (1965) studied teaching of Mathematics in different studies of India, Patola (1967) studied teaching of science, Pillai (1970) studied teaching of mathematics in Kerala and Kulandaivel and Rao (1968) studied teachers to identify teaching acts perceived to be good by students.

Dasajh (1956) found positive correlation coefficient of .71 and .80 between levels of imagination and maturity and skills in Teaching respectively.
In (1965) Suraj studied the relationship between teacher trainee's intellectual efficiency (IE), self-acceptance (SA) and teaching skills (TS). The study revealed sex difference in the three relationships viz. (IE-TS), (SA-TS), and (IE-SA) which were significant at .01 level. The coefficient of determination suggested that most of the variance in TS could be attributed to variance in teaching effectiveness, and only a little bit of it to the variance in (SA). Deva (1966) conducted a study on prediction of success in student teaching and found that personality seemed to be the most important and intelligence the least important in predicting success in student teaching. Singh (1970) found that no single factor could predict the criterion effectively. The predictors of performance in teaching skills were measures of ascendance, extraversion, intelligence and early academic achievement.

The earlier studies attempted at surveying the classroom behaviour of teachers using Flanders Interaction analysis Category system were by Pareek and Rao (1970). They selected 50 fifth grade
teachers of Delhi drawn from 50 primary and middle schools. Each teacher was observed three half hour periods and a total of 84,087 observations were collected. The results revealed that about 55 percent of the time was spent in teacher talk by Delhi teachers. In about 67 percent of the periods observed, the teachers used direct influence behaviours about twice the time they used indirect influence behaviour. Only in 11 percent of the observed periods the teachers used more indirect influence than the direct influence. No sex differences were reported in the study.

Buch and Santhanam (1970) observed eleven teachers teaching English to classes from VI to X. Each teacher was observed twice. In a total observation of 10 hours and 7 minutes, 14,786 observations were recorded. The teacher talk was found to be 69 percent, student talk 21 percent and I/D ratio 0.2.

Buch and Quarishi (1970) conducted another study involving 17 male social studies teachers of secondary schools in Baroda. It was concluded that teacher talk was nearly 83 percent, student talk
about 10 percent and silence and confusion about 7 percent. The I/O ratio was 0.17.

Santhanam, Quraishi and Lulla (1970) studied 19 women and 17 men social studies teachers. The results indicate that women teachers talk about 75 percent while men teachers talk about 82 percent of the total time observed. Students in women teacher classes talk about 13 percent while in the case of students in male teachers classes talk 0.5 percent of the time.

Quraishi (1972) studied the relationship between teacher's personality variables and their classroom behaviour using Flanders Interaction analysis Category System. He found only teacher attitudes to be associated with classroom behaviour of teachers. Jangira (1972) reported a successful experiment in modifying classroom behaviour of teachers using feedback based on Flanders Interaction Analysis Category system. Pangotra (1972) studied the effect of different sources of feedback on student teachers. He found that feedback from the supervisor was more effective than feedback from peers, the researcher or the pupils.
Sharma (1972), in an experiment studied the effect of four different patterns of classroom behaviour of teachers on pupil achievement in relation to knowledge, comprehension and application as instructional objectives. Flanders Interaction Analysis Category system was used for training the teachers in the behaviour patterns selected for the treatments.

Jangira (1972), in his study for modifying classroom behaviour of teachers, found that higher responsiveness, flexibility in teacher influence and indirectness resulted in higher pupil adjustment, classroom trust behaviour and independence.

A few studies relating process product variables have also appeared in India. Mehta and his associates used training in classroom interaction analysis in their "Laboratory in Achievement Motivation". The programme was an attempt to increase the motivational level of teachers and to help them in developing suitable classroom instructional behaviours and to develop strategies in them to create friendly climate in the classroom. Mehta
(1969), Mehta and Kanade (1969) and Mehta and Dandia (1970) reported higher achievement in follow-up studies of the experimental group.

Pareek and Rao (1971) studied association between the verbal classroom behaviour of teachers and pupil adjustment. Students were more adjusted, more intelligent, high initiative taking and high impunitive in the classes taught by teachers with high I/D ratios as compared to the students taught by teachers with low I/D ratios. However, a reverse trend was observed when content controlled I/D ratios were used.

Mitra (1970-71) observed 78 teachers teaching different subjects in 17 schools of Jabalpur, using Flander's Interaction Analysis Category System, and administered attitude questionnaire to the students under the charge of these teachers. The investigator reported that there was positive tendency to like that teacher who used indirect influence, but it is not significant.

Pareek and Rao (1971) provided a 10 days training in interaction analysis to V grade teachers.
of Delhi to modify their classroom interaction pattern. Both experimental and control groups of teachers were observed before and after training. Post-training observations were collected up to a period of 6 months after the training. The experimental group of teachers reported to have modified their classroom behaviour patterns from direct to indirect and maintained them consistently.

Nath (1971) conducted an experiment to study the effect of feedback based on interaction analysis using Flanders Interaction analysis category System. Twenty four women B.Ed. trainees were involved. Pretraining and post-training observations revealed that the experimental group, after training in interaction analysis, talked less, had high $\frac{1}{T+d}$ ratios, and higher pupil initiation, than the control group.

Studies in classroom interaction paved the way to understand teaching as it goes on in the classroom. Attempts have also been made to identify effective teaching behaviour patterns and modify classroom behaviour of teachers accordingly. The studies, however, are scanty within the broad framework of teaching.
This is the time to attract more people to the area, procure financial resources to develop the enterprise and make a concerted attempt to multiply systematic research on teaching. It is on this quality of research the status of the teaching profession as well as the quality of teaching will depend.

Keeping this pre-requisite in mind the researchers planned more systematic researches in teaching. Microteaching is the outcome of this systematic planned approach.

2.4 HISTORY OF MICROTEACHING

The concept of microteaching originated from the concept of Interaction analysis and systematic analysis. Interaction analysis gave the coding system of understanding teaching behaviour but micro teaching took up teaching in a broader perspective and gave us the means to develop these desirable behaviours in the form of skills Interaction analysis and systematic analysis system gave us the analysis of the verbal and non-verbal communication of teacher in the class but micro-teaching went a step further to make that verbal
and non-verbal behaviour of teacher effective in
the class-room.

So, in the present section of the chapter, an attempt is being made to review the development of the concept of microteaching both in this country and abroad and also to analyse the various areas where researches have been conducted. An effort would be made to locate the areas of ignorance, gaps to establish the rationale of the topic.

Broadly speaking the research on micro-teaching started in 1961 with the efforts of Keith Acheson, Dr. Robert N. Bush and Dwight W. Allen at Stanford University. In 1963 Dwight W. Allen coined the term 'Microteaching' at Stanford University. During this period the studies were conducted mainly in three broader aspects:

1- The concept of microteaching developed at Stanford University which was later adopted, adapted and modified by the researchers of different universities and teacher Training Institutions Working in different countries.

2- Thus a new dimension in providing feedback was added. Besides the supervisor as a source of
feedback, they tried to prove the utility of videotape as another source of feedback. Thus multidimensional approach was followed in providing feedback.

3- The third aspect on which researchers focused their attention was evaluation. An effort was, first of all, made to develop a standardised uniform proforma to evaluate the performance of student teachers at the Stanford University entitled "Stanford Teacher Competence Appraised Guide". This proforma was further adopted, adapted and modified by the researchers of different universities and Teacher Training Institutions working in different countries.

Microteaching further gained momentum slowly and by 1969 over 141 colleges and universities in United States were using microteaching technique for secondary teacher training programme. Gradually the concept of microteaching was also carried to a number of universities like Stirling University, the new university of Ulster, Exeter University etc. where an extensive research is in process and steps
are being taken to introduce microteaching on a larger scale as an innovation in Teacher training institutions and thereby improving the quality of Teacher Training Programme in Teacher Training Institutions. Researches that had been conducted abroad as well as in India in this vital area of teacher education are discussed below:

**Microteaching compared with conventional Student teaching programme:**

One of the earliest evaluations of microteaching was carried out at Stanford University in 1963. The student teachers were randomly divided into two groups of approximately thirty each. One group received all its practical teaching experiences in a microteaching setting. The other group's programme was of in-school observation and teaching experience. Students trained in the microteaching clinic made great improvement in the skills practised and displayed greater teaching competence than their colleagues.

Another study carried out in the field of effectiveness of microteaching (Allen and Fortune 1966) was to evaluate the Stanford summer microteaching
clinics. The researchers found that Stanford interns trained by microteaching for eight weeks earned significantly higher ratings in teacher effectiveness than did a control group which received a separate instruction and teacher aide experiences. Microteaching was also more efficient because it required less than ten hours time per week, whereas the training given to the control group required twenty to twenty-five hours per week.

Other evidence suggests that microteaching can effectively improve significant aspects of teacher-pupil relationships. A Pilot study was conducted by Emmer and Millett (1968) in which the experimental group of twenty-seven student teachers took part in ten microteaching lessons with supervisor and pupil feedback. The control group pursued the traditional curriculum and instructional course with only one microteaching session at the beginning of semester and one at the end. The final microteaching session for each group was audiotaped and coded. The result showed that experimental group was better in motivating pupils, evaluating pupils' response, made better use of the ideas of pupils, used more questioning and
initiated pupils in a better way than the controlled group.

A further effectiveness study was carried out in Taxes by Bell (1968) using home economics teacher trainees as subjects. She compared a control group who had undergone teaching practice with an experimental group who had participated in microteaching after their teaching practice. She found that the microteaching group showed significant gains in teaching performance from initial lesson to final lesson.

There is evidence that microteaching can also change student attitudes. Goldman (1969) conducted a study in which one group of students, before entering a professional elementary education course, received microteaching experience and another group did not. Results indicate that the students in the microteaching group developed a better regard for themselves and more critically examined the teaching concepts and educational concepts.

Similarly in a study by Hornsby (in foster, 1969) post course anticipates were analysed for a
sample of eight mini course teachers and eight comparable control teachers. Although levels of significance are low because of small sample size, the mean difference in performance are impressive. For example, compared with the control group the teachers who took the mini-course asked almost twice as many questions or higher cognitive questions and developed pupil responses. Further more, Hornsby measured proportion of pupil and teacher talk in both groups and found that pupil of mini course teachers participated during 68% of the total discussion time, whereas students of control teachers participated only 30% of the time.

Kallenbach and Gall (1969) compared the effectiveness of microteaching approach and conventional approach in training elementary school interns. The study revealed that though there was superiority in both the methods in increasing effectiveness of teachers classroom performance yet micro-teaching approach was superior to the other in terms of time required for training.

Ward (1970) conducted a survey of the microteaching being used in secondary education
programmes in the United States and it was felt that microteaching improved the attitude of staff as well as students towards education.

In an attempt to study comparative effect of microteaching and traditional teacher training methods on student teachers' verbal teaching behaviour. Davis and Smoot (1970) involved eighty give secondary teacher trainees in a series of microteaching experiences and fifty-five in traditional training methods. The results showed that the microteaching group asked more divergent and probing questions and provided more clarification than the traditionally trained group. The pupils of the microteaching group initiated more and responded more then those in the non-microteaching group. The study generalised that the microteaching group had not only changed their behaviour but had increased the variety of their verbal teaching exchanges.

Another study by Harris (1970) indicates the value of microteaching compared with conventional practice teaching methods by bringing significant changes in prospective science teachers. The study
concluded that microteaching experiences promoted use of background information, provision of concrete materials, utilizing children's observations allowing children to develop conclusions, helping children to verify conclusions etc. This promoted student growth in general.

Schuck (1971) also reviewed pre-service microteaching programmes in a number of American institutions. Some programmes reported that the students receiving microteaching showed a significant improvement in teaching competence when compared with students undergoing more conventional training methods. But other programmes reported the microteaching students to be at least equal to those in the conventional programmes.

The study by Løgge and Asper (1972) proves that microteaching can subsequently improve students' skills in evaluating aspects of teaching. A group of elementary student teachers was trained under a fourteen week microteaching programme. They gave micro-lessons each, followed by video-tape feedback and self-analysis. It was found that this experimental group performed better than a control
group which was given a conventional inschool experience programme. The experimental group could evaluate the aims, planning and presentation of a forty five minute videotaped teaching sequence.

Raymond (1974) investigated into effectiveness of the instructional technique namely microteaching in enabling the pre-service science teachers to acquire the skill in the use of non-verbal cues and use of silence. After the treatment the student teachers of the experimental group exhibited significantly more positive non-verbal interactions with their pupils than those of the controlled group.

Research in India

N.S. Marker (1972) carried out a study trying to compare the performance of student teachers trained through microteaching and trained through conventional approaches. Micro lessons were given in five of the skills namely, set induction, stimulus variation, questioning, response of pupils and Re-enforcement and closure. Marker found that microteaching was a better technique than conventional approach in the development of certain
N.S. Marker (1973) tried another experiment on microteaching in a simulated situation. The results were again in favour of microteaching.

Bhattacharya (1974) while experimenting this technique with polytechnique teachers, found that microteaching was more effective than the conventional technique in the development of indirect teacher behaviour.

Joshi (1975), Lalita (1975), and Passi (1975) compared the effectiveness of the microteaching technique versus conventional approach in the development of various skills of writing instructional objectives, introducing a lesson, fluency in questioning, probing questioning, explaining, illustrating with examples, stimulus variation, silence and non-verbal cues, re-enforcement, increasing pupil participation, using black-board, achieving closure, and recognizing attending behaviour. They found microteaching useful in developing these skills and have produced useful instructional materials for the development of teaching skills. These materials have been tried and are available in 'Becoming Better Teacher -

Ray (1978) in his doctoral programme conducted his study on effect of various treatments on acquisition of teaching skills through microteaching and found that: (i) Microteaching and acquisition of certain skills which are developed for pre-service programme are feasible for in-service teachers training programme. (ii) On the development of general teacher competence the effect of microteaching is significantly higher than that of equivalent traditional group of acquiring same teaching skills (iii) Self-analysis with audio-tape supervisory feedback and supervisory feedback with audio-tape are equally effective to each other within microteaching programme. (iv) For the development of teaching competence on specific five teaching skills, microteaching is highly significant than that of filler group with traditional practice. (v) Practices of specific five teaching skills through microteaching under any kind of feedback treatments have been carried over to micro situation, and (vi) acquisition of teaching skills either through microteaching or through traditional approach does not influence the
teacher's attitude towards teaching programme.

Microteaching and Development of teaching skills

The central and distinctive task of teacher education is to induce changes in teachers that will increase their ability to bring about desired changes in school pupils. The skills which microteaching is designed to develop are, classroom behaviours that are specific, definable, observable, demonstrable, quantifiable and known to be causally related to desired pupil learnings. Different studies are conducted to prove that microteaching is an effective technique to develop these skills among the pupil teachers.

Orme (1966) found that a combination of perceptual and symbolic modelling was more effective as compared to either of them used singly in developing the skill of probing questioning.

Allen and others (1967) found no differences in effectiveness between the two types of modelling in the development of the skill of higher order questioning. The study points out that microteaching is an effective technique of developing Teaching Skills.
I.A. Johnson (1968) conducted a pilot study at the University of Illinois in which the students were given instructions in the skill of 'lecturing', 'giving directions' and 'having discussion'. The three approaches of supervision were inductive, directive and subject oriented. Only one skill, namely, 'giving directions' revealed systematic growth. It was found that different kinds of supervisory behaviour might have differential effects on skill acquisition.

Allen and others (1969) found that microteaching is an effective technique in developing the skills, namely, stimulus variation, closure and silence and non-verbal cues.

Bell (1970) experimenting with microteaching in the student teaching programme of home economics education found that the skills, namely, establishing set, re-enforcement, questioning, achieving closure and framing a reference could effectively be developed using microteaching approach.

Borg and others (1970) found that minicourses which were based on microteaching were effective in
developing the skill of probing questioning.

Marker (1972) compared two approaches, namely microteaching and traditional student teaching approach in developing teaching skills namely set induction, stimulus variation, questioning, response to pupil responses, re-enforcement and closure among student teachers of geography method. The micro lessons were given in normal geography classes. The study showed tangible improvement which increased the self confidence of student teachers of the experimental group.

Burak (1975) compared the effectiveness of three instructional procedures - a microteaching approach, a systematic observation approach, and a self directed learning package approach upon the questioning behaviour of pre-service elementary teachers. The microteaching treatment involved the use of different models of questioning skills, repeated practice, feedback by video recording. The second treatment involved giving training in the use of guilford's model and Bloom's taxonomy for observation and recording of oral questioning.
during practice lessons, video feedback and reteach were not included in the sequence. No direct instruction was given to the third group, but was held responsible for learning the specified questioning skills using self-directed learning package. Pre-test and post-test measures on four different questioning skills namely, cognitive quality, question quantity, cognitive quantity and tactical versatility were taken during micro lessons by trained observers using the questioning strategy observation system. Similar observations were also made during student teaching. Groups differed significantly on each of the four questioning skills from pre-test lessons to post lessons during laboratory training. During student teaching, there were no significant differences between the treatment groups on any of the four questioning skills. There was a decline in the performance of the groups on the questioning skills from the post-test lessons to the lessons during the student teaching.

Research in India

R.R. Chudasama (1971) tried out microteaching with six students at the Faculty of Education and
Psychology, Baroda. His objectives were (i) to know the extend to which microteaching can help a student teacher in developing more integrative behaviour (ii) and to see if Interaction Analysis can be integrated into the microteaching programme. His findings were that microteaching developed the skill of questioning in the teacher and increased pupils' participation in the class.

Joshi (1974) found that microteaching was effective in developing the skills of reinforcement and silence and non-verbal cues. Abraham (1974) found that microteaching was effective in developing the skills of fluency in questioning and probing questioning.

Thresiamma (1975) studied the effectiveness of feedback in the development in the skills of recognizing attending behaviour and teacher liveliness among in-service teachers.

**Microteaching and sources of feedback:**

Feedback in microteaching is information a student receives concerning his attempts to imitate certain patterns of teaching. The aim of providing the student teacher with feedback is to acquaint him with
the success of his performance and enable him to evaluate and to improve his teaching behaviour. Feedback practices in microteaching programmes vary considerably. The main variation is concerned with the media through which the feedback is presented and the people involved in feedback discussion.

Young (1967) studied the effectiveness of the various types and combinations of models on lecturing skills. The models were of a number of kinds: videotaped teaching in classroom contexts with a 'contingent focus' (comments recorded on sound track drawing attention to the specific behaviour to be learned); videotaped teaching with 'non-contingent focus' (a written guide); symbolic models (a video tape of a teacher, without a class, giving clear examples of the teaching skills). In general, the result indicated the most effective modelling approach was a combination of video taped teaching with 'contingent focus' and the video-taped 'specific illustration'.

'Self supervision' is being used in a number of microteaching programmes, some times supplemented by supervisor commentary (Allen, fortune and Cooper, 1968). The mini course of The Far West Laboratory have
Demonstrated that with the use of highly structured materials, significant behavioural changes can be assisted by teacher self evaluation.

M.L. Koran (1969) revealed that film mediated models were significantly more effective than symbolic or written models in generating higher frequency, variety and quality of analytic questions by student teachers.

Furthermore, Myrick (1969) found that in counselling audio models were more effective than video in eliciting statements of self-reference. This study concluded that audio and symbolic models contain less irrelevant or distracting information than do perceptual models.

The manner in which models are presented is also very important. Claus (1969) found that in developing skills of higher-order questioning perceptual models accompanied by verbal cues from the supervisor were more effective than feedback, with or without cueing, introducing the desired behavioural change. Active student participation in model viewing is also advocated.
D.B. Young (1970) compared the effect of the provision of a single supervisor with colleague supervisor teams. It was found that the students working in teams performed a significantly greater number of specific teaching behaviours in orienting students to the learning task. Students in teams also performed significantly better on three of the eight verbal and three of the ten non-verbal behaviours aimed at 'reinforcing student responses.'

To investigate whether the number of peers in a micro lesson had any effect on subsequent teaching, Staley (1970) had three groups of students who used either four, eight, or twelve to sixteen peers as pupils in micro lessons in science. To test the effects of the size of the classes each student taught a science lesson which was audio taped to four pupils. The result indicated no difference between the groups as measured by an 'audio tape Analysis Instrument' which was used to assess the students' teaching behaviour.

D.A. Young (1970) used a group of peers to act as supervisors for students in a series of
microteaching experiments. The results seem to indicate that the peer supervisors are at least as effective as regular supervisors in encouraging students to use certain teaching behaviors.

Waimon and Ramseyer (1970) found that students who received audio-visual feedback but no supervisory feedback did not differ in their ability in self-evaluating, as measured by Stanford Teacher Competence Appraisal Guide, from those students who received supervisory feedback but no audio-visual feedback. The investigator, however, points out that, in part, these results reflected rather inept supervision. They found that supervisors discussed 'diverse and often unimportant matters' during supervisory conferences.

Joe E. Shively, Adrian P. Van Monfrans, and Cheryl L. Road (1970) examined the effects on teacher performance and attitudes of several manipulations of the conditions under which the microteaching supervisors provide feedback. The basis of their critique are (i) A video-tape of the microteaching lesson which the teacher views with the microteaching teacher.
Thirty seven students were randomly divided into eight groups. Two groups were randomly assigned to each treatment and data was obtained from STCAG scores and an attitude scale measuring attitude towards various aspects of microteaching. The results showed that AT treatment appears to be the strongest in bringing changes as measured by student rating and also being highly valued by the microteaching teacher. The SR treatment effectively produced change in teacher performance but was not highly valued. The VT treatment, though, was relatively weak in producing change, yet was highly valued. The LL treatment brought the least effects and was also valued very low.

J.L. Olivero (1970) concluded in his study that the trainees who had the opportunity to see themselves perform and to see verbal feedback from supervisor showed greater changes in their behaviour than those who received verbal feedback only. The other conclusion was that the condition of observation of teaching performance from pre recorded video tapes.
was not significantly superior to the live observations of teaching performance with the supervisor present in the classroom.

Resnick and Riss (1970) studied a form of discriminative modelling in which contrasting multiple models were used. The training procedure included three basic treatments: (a) Discrimination Training (D) which involved viewing, rating and discussion of video tape of diagnostic sessions tapes of model sessions and problem sessions, (b) practice (P) in which students diagnosed a series of children on several related tasks (each session was viewed on video tape before starting work with the next child), (c) feedback (F) in which an experimental serving as an evaluator rated the trainees' performance and discussed the video tape play-back during the practice session. Combination of these treatments in the form of (i) D+P+E; (ii) P + F; (iii) D + P were given to three experimental groups. Pre test and post test scores for these groups on different behaviour rating scales were compared.
Aeheson (1971) reviewed the literature on audio and video tape feedback and cites the findings of two particular studies which support the hypothesis that video self evaluation and pupil feedback are superior to supervisors feedback in bringing about changes in the teaching skills of student teachers.

In the study conducted by Leonard (1971) the effectiveness of three feedback conditions in producing changes in 'Direct Teaching influence' towards more 'Indirect Teaching Influence' were compared. Results indicated that video tape feedback produced significant changes in verbal interactive behaviour while audio feedback produced changes which were not significant.

Research in India

G.B. Shah (1970) tried an experiment with seven students of the ninth class. He used a tape-recorder for recording the performance of a teacher. His conclusions were that the recording on the tape-recorder and listening to it afterwards helps the teacher in correcting his mistakes.

L.P. Singh (1973) conducted a comparative study with the help of the microteaching technique
and Flander's Interaction Analysis of verbal teacher behaviour. He divided the sample into three groups. One group received the treatment through microteaching, the other through Flander's Interaction Analysis Technique and the third was a controlled group which received the treatment through the traditional method of training. His results showed that student teachers trained through microteaching and through Flander's Interaction Analysis technique change their verbal teaching behaviour in the classroom more significantly compared to the student teachers trained in the traditional way only.

N.L. Dosajh (1974) carried out a preliminary try out of microteaching as a modifier of teacher behaviour. A teacher of a local higher secondary school gave a lesson to five students for about 15 minutes. His performance was televised in an adjoining room where a group of twenty observers judged his performance on a specially designed proforma. The performance of the teacher was played back to him in the presence of a teacher educator who focussed his attention on points which needed
Improvement. The teacher was asked to prepare his lesson again in about fifteen minutes and to deliver it to another group of five students. The same observer evaluated this second lesson on a second copy of the same proforma. The teacher showed an all-round improvement in all areas.

N.L. Dosajh (1975) also tried to study change of teaching self concept through microteaching. He took ten teacher trainees of the electrical group of the Technical Teachers Training Institute, Chandigarh. They were asked to evaluate their teaching performance before and after at least two microteaching sessions with closed circuit television. Their self evaluation have been compared with their supervisors' evaluations. In all cases there was a very significant change in teaching self-concept, bringing it close to that of the average of their supervisors.

Sharma (1976) in his Doctoral research has found that audio tape and supervisor feedback is more effective than peer feedback in the development of general teacher competence.
A large scale experimental field study was undertaken in 1975-76 by the Department of Teacher Education, NCERT in collaboration with CASE, Baroda and nine colleges/university departments of Education. The main finding of the study is that the student teachers trained through microteaching or modified microteaching technique acquire higher general teacher competence as compared to the student teachers not getting training in the above two techniques.

Vaze (1975) compared the effectiveness of the symbolic modelling, audio modelling and microteaching in the acquisition of the skills, namely, probing questioning, divergent questioning and convergent questioning. The study was conducted in three phases of which the first was pilot stage. The other two were for final experimentation. During the second phase, thirty B.Ed. students enrolled for the year 1974-75 of Govt. College of Education Ratnagiri, were divided into three equal groups. Each of the groups was exposed to three different treatments namely, symbolic modelling, consisted of exposing student teachers to a model lesson in the particular skill in
written form. Listening to the same lesson on audio tapes formed audio modelling. The microteaching consisted of exposing student teachers to microteaching, meaning and teach-reteach cycle. This was followed by lesson given by student teachers of each group in a microteaching setting with peers acting as students. The student teachers of microteaching group gave one lesson consisting of two cycles on each skill and those of the other groups gave two lessons consisting of one cycle each on each of the skills. This phase continued up to first half of the year. The same experiment was repeated with another thirty student teachers during the second half of the year which comprised the third phase. Those students were predominantly language oriented. The criterion variables were the scores obtained at different stages of attainment of the skills on a specially prepared proforma. The findings were that microteaching was the best treatment for the acquisition of all the skills during the second phase, but during the third phase, symbolic modelling was the most and microteaching was the least effective treatment for the acquisition of the skill of probing questioning and audio modelling was the best and symbolic
modelling was the least for the acquisition of the skills, namely asking convergent questions and asking divergent questions.

2.5 CONCLUSION:

It is evident from the review done in the last section that the concept of microteaching is hardly fifteen years old but the volume of research that has been carried out in foreign countries indicates the importance of this area for bringing about the quantitative improvement in teacher education in general and student teaching programme in particular. A decade earlier microteaching also caught the imagination of researchers in India. Since then at the initiative of CASE and NCERT research in different areas of microteaching was carried out in different universities and teacher training institutions. Besides a number of studies done at the M.Ed. level, about two dozens studies were carried out at the Ph.D. level. A few of the research projects have also been reported. The trend that emerges from the review of studies and projects is, that most of the studies aimed at comparing traditional technique of teaching with the microteaching technique. A few studies
reported in the review aimed at identifying and developing different skills and their components along with the evaluation proforma in Indian conditions. Hardly, one or two studies have used the experimental design. The need is to conduct research which is more functional in nature. The microteaching as training technique can be institutionalized only, if its functional utility can be established experimentally. The present review done points towards this type of gap. Hence, the need is to take up such studies which may be conducted using experimental design.

In the next chapter therefore, the plan and procedure of the study would be described.