



design of pilot study, problem, sample, tools, treatment, data collection, findings and guidelines drawn for the final study.

#### 2.0.1. Design of the Pilot Study

The pilot study was an experimental study having single group method with pre-treatment and post-treatment design. The two types of samples (i) the supervisors, and (ii) the student teachers were trained to understand the procedure of the study and the approach of providing the treatment, namely, microteaching. The experimental study focussed upon training the teaching skills of (i) reinforcement, and (ii) silence and nonverbal cues. After the application of the treatment the student teachers were asked to express their attitudes towards the training procedure. The complete procedure of the pilot study is given in the captions 2.2.1 to 2.3.0.

#### 2.1.0. PROBLEM

Can microteaching as an innovative training technique be adopted in Indian conditions ?

#### 2.1.1. Objectives

The pilot study had the following major objectives in view :

- (i) To understand the concept of microteaching as well as the two selected schools.
- (ii) To develop observation tools according to the type of skill.
- (iii) To evolve and finalize the administrative aspects.
- (iv) To find out the attitude of the student teachers towards microteaching.
- (v) To draw out guidelines to design and conduct the final study.

#### 2.2.1. Sample

The two types of persons, namely, supervisors and student teachers, were selected at different stages of the experiment. The details are given below :

##### (a) Supervisors :

A team of seven supervisors including the present investigator alongwith other persons ( one Teacher Fellow, three Research Fellows and two M.Ed. students of the Centre of Advanced Study in Education, Faculty of Education and Psychology, M.S. University of Baroda, Baroda) were selected for the study. These supervisors were oriented to the study of teacher behaviour, observation system, microteaching technique and different types of

modelling.

(b) Student Teachers :

Eighteen B.Ed. students ( student teachers ) from the Faculty of Education and Psychology, M.S. University, Baroda studying through English or Hindi medium and who volunteered to undergo the training through microteaching, were selected for the experiment. This sample was taken out of the 160 B.Ed. students enrolled for the academic year 1973-74.

Out of these eighteen students who had either English or Hindi as their medium of instruction, seventeen were female students and one was a male student.

TABLE 2.1 :

Distribution of Student Teachers according to the Sex and Method offered

Sex	No. of students	Hindi History	Eng. Geog.	Sci. Geog.	Maths. Sci.	Sci. Hindi	Eng. Hindi
Female	17	1	8	2	4	1	1
Male	1	-	-	-	1	-	-
Total	18	1	8	2	5	1	1

The Table 2.1 above presents the distribution of the student teachers. Ten out of eighteen had no previous teaching experience at all, three had one year's experience; one had two years, one had three years, two had five years, and one had eight years of teaching experience. The distribution according to their academic qualifications can be described as under : There were one M.A. each in English and Psychology, one M.Sc. each in Mathematics and Botany, four B.Sc. in Home Science, six had B.Sc. degree with one or more of the following subjects - Physics, Chemistry and Mathematics and six had B.A. degree with either one or more of the following subjects - English, Hindi, French, Political Science, History, Economics, Home Science and Psychology. The student teachers could be categorized agewise in the following age intervals. Thirteen belonged to the age interval 21 - 25 years; two belonged to the age interval 26 - 30 years; and three were above 30 years of age.

#### 2.2.2. Tools

With a view to bring <sup>about</sup> greater consensus and effectiveness in the feedback, observation and assessment tools were prepared for both the skills. The following tools were prepared for 'reinforcement' skill : (i) Skill Evaluation

Profoma for supervisors ( See Appendix A ), (ii) Self Assessment Profoma for Microteachers ( See Appendix B ). For the skill in 'Silence and Nonverbal Cues', the following tools were prepared : (i) Skill Evaluation Profoma for Supervisors ( See Appendix C ), (ii) Self-Assessment Profoma for Microteachers ( See Appendix D ). A description of the tools used in the study is given below.)

(a) Tools for the Skill of Using Reinforcement :

Two observation tools were prepared for the skill namely, ' Skill Evaluation Profoma' for the use of supervisors and Self-Assessment Profoma' for micro-teachers.

Profoma used by supervisors : The purpose in preparing this tool was to measure how successful was the student teacher in using reinforcement as a skill for teaching. The lesson was observed at three stages namely, the beginning part referring to previous knowledge, developmental part referring to content part and recapitulation part referring to testing part. The purpose was to view the skill corresponding to three main stages of a lesson not confining one part of a lesson. The supervisors were supposed to observe the reinforcement

provided by the student teacher during each stage of the lesson. The column for supervisor's remarks was given to facilitate the process of feedback to the trainees. For quantitative analysis, the number and the type of reinforcers used were considered and for qualitative analysis the remarks given by supervisors at the end of each lesson were taken into consideration.

Proforma used by microteachers : The purpose of this proforma was to make aware of the microteacher regarding different components of reinforcement skill and assess or evaluate his teaching in the light of these components of the skill. The proforma used by microteachers contained three aspects namely, rewarding a correct answer of the student, avoiding negative comments to students' answer and being responsive to students' questions and comments. The item on each aspect was to be rated on a seven point scale ( See Appendix B ). Same proforma was used by the peer observers as well. The ratings of each component on seven point scale could be quantified and analysed. For qualitative analysis the remarks given by peers were considered.

(b) Tools for the Skill of Using Silence and Non-Verbal Cues :

With thorough discussions on different components of the skill with the supervisors and the student teachers, two observation tools were prepared for this skill. One skill evaluation proforma was for the use of supervisors and second self-assessment proforma was for the use of microteachers.

Proforma used by Supervisors : This proforma included five components ( silence, head, face, gesture and body ) of the skill with six determinants ( thinking or confusion, explanation or control and approach or disapproval ) (See Appendix C ). The supervisors noted the frequency of occurrence of behaviour under each aspect of the skill and these frequencies were analysed.

Proforma used by microteachers : This proforma ( See Appendix D ) included four components of the skill to be rated on seven point scale. Microteachers were supposed to concentrate and to be aware of using short pauses to make pupils concentrate upon a issue, using facial expressions to encourage pupil's participation, making use of head, hand and body to encourage pupils' participation, and making use of facial expressions and body movements to



to communicate ideas and feelings. The ratings on each lesson of microteacher were analysed by microteacher himself and his peer.

(c) Tool for the Measurement of Attitude towards Microteaching :

An opinionnaire consisting of seven variables such as (i) microteaching technique in general, (ii) teacher effectiveness, (iii) organisation, (iv) provision of feedback, (v) content, (vi) skills undertaken for the study, and (vii) supervision, was constructed by the investigator. It included thirty two items to be rated on five point scale starting with 'not at all' to 'very much' ( See Appendix E ).

### 2.2.3. Treatment

The treatment, comprising the following steps, was designed and administered to the sample selected for the experiment. Sample of supervisors was given orientation to microteaching and its allied issues, discussed in the following paragraphs. Sample of student teachers was given orientation and actual training in microteaching and its allied issues were discussed. Whole scheme has been shown in Table 2.2 on the next page.

TABLE 2.2 :

## Scheme of the Treatment

Supervisors	:	Student Teachers
(a) Orientation of Supervisors		(b) Training to Student Teachers
(i) Theoretical discussion of different approaches to student teaching		(i) Listening of teacher characteristics
(ii) Theoretical explanation of microteaching and mini courses		(ii) Classroom observation
(iii) Training methods of classroom observation		(iii) Orientation to microteaching technique
(iv) Training in Flanders' Interaction Analysis Category System (FIACS)		(iv) Role playing
(v) Selection of the Skills		(v) Lesson planning
(vi) Training in the use of observation and assessment tools		(vi) Selection of skills in microteaching technique
(vii) Selection of Lesson Plan Format		(vii) Orientation to the skills selected for the study
(viii) Discussion for framing the time-table		(viii) Selection of units and preparing micro-lessons

## (a) Orientation of Supervisors :

Orientation to microteaching required twentyfour hours of active and intensive working schedule spread over a week. This covered both theoretical aspects with demonstrations and practice in observation as described in the following paragraphs :

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(i) Theoretical discussion of different approaches to Student teaching :

The actual experiment began with the guide presenting to the assembled supervisors a brief history of student teaching and various approaches followed in India and abroad. Two traditions - common sense approach and scientific approach were discussed with the team of supervisors. Merits and demerits of each tradition were highlighted.

(ii) Theoretical explanation of Microteaching and Minicourses :

After having discussion on approaches to student teaching, historical view of microteaching was presented and its specific place in teacher education. Its role in the development of professional skills was emphasised repeatedly. The presentation was coupled with a group discussion in order to clarify many concepts regarding microteaching and minicourses. The pedagogical significance of different steps involved in microteaching cycle - ' Teach - View - Critique - Reteach -- Review -- Recritique -- follow the cycle if need be', in the acquisition of teaching skills was brought home to the supervisors.

(iii) Training in methods of Classroom Observation :

Supervisory team was introduced to the theoretical base and methods of classroom observation with a view to helping the teachers to perform his task more efficiently. The team was appraised of the fact that many teachers do get into certain habits which hinder effective teaching. Moreover, some teachers may lose some good habits because of lack of adequate feedback. Classroom teaching can be approached from various angles, such as student centred, teacher centred, content centred, etc. The team could feel that classroom observation was not an easy task. It required rigorous practice to make it really useful and to provide an objective feedback to the teacher. The emphasis in the present experiment was laid on pinpointed observation with a view to provide an effective feedback to the classroom teacher. Consequently, it would lead to modify his classroom behaviour which may be conducive towards effective teaching - learning process. The objective at hand is to minimise subjectivity as far as possible.

(iv) Training in Flanders' Interaction Analysis :

Category System : Flanders' Interaction Analysis  
Category System ( FIACS ) was introduced and explained to

the team of supervisors. A group discussion on each of the ten categories was held. A simulated teaching session was arranged to clarify the doubts and difficulties. The training procedure required observation performance to result into the inter-observer reliability (with a trained observer), at 0.85 or more ( Scott's Reliability Co-efficient, according to Flanders (1960(b)). Sufficient training in observation was given in order to establish inter-observer reliability consistently at levels or above 0.85. The procedure of establishing reliability can be done either through the graphic method or the computational one recommended by Flanders (1960(b)). The latter is described below.

Scott calls his coefficient 'pi' and it is determined by the formula:

$$P_i = \frac{P_o - P_e}{100 - P_e}$$

where  $P_o$  is the percentage of agreement and  $P_e$  is the percentage of agreement by chance which is found by squaring the proportion of tallies in each category.

(v) Selection of the Skills :

Many skills are known to teacher educators. Teaching becomes effective if these skills are tried upon systematically.

Special attention of the supervisory team was drawn to the fact that the selection of skills having orchestrate characteristic, for the experiment, was largely governed by nonvailability of certain materials. The materials like audiotape and videotape help to present more accurate and objective feedback but cannot be afforded easily in Indian conditions. This point resulted in the selection of predominantly those skills where verbal ( written or oral ) feedback by the supervisors and peers would help the trainee to acquire proficiency in the skill. Five skills were selected for the entire experiment. The present investigator restricted his study only to two skills, namely, reinforcement and silence and nonverbal cues.

(vi) Training in the use of observation and assessment tools :

Supervisors were given training how to observe a microlesson with the help of observation and assessment tools developed for each skill separately.

(vii) Selection of Lesson Plan format :

Different formats of lesson plan followed at various places in the country like Regional College of Education, Mysore, M.S. University of Baroda, University of Poona,

Panjab University, Chandigarh, etc., were discussed. Finally, with the consensus of the group the format of lesson plan followed at Regional College of Education, Mysore based on behavioural objectives, was accepted giving due weightage to different components of instruction. Format of the lesson plan has been shown in Table 2.3.

TABLE 2.3.

Format of Lesson Plan followed in the Experiment

Name of Student Teacher :

Subject :

Roll No.

Topic :

1	2	3	4	5	6	7	8
Teach- ing Points	Main conc- epts	Expected Behaviou- ral out- comes	Teacher Activity	Pupil Acti- vity	B.B. Summ- ary	Eva- lua- tion	Home work

(viii) Discussion for framing the time-table :

To run the experiment smoothly, time-table schedule was discussed by the supervisors. A suitable time-table was

prepared for delivering the microlessons with a criteria to cover all students for two teaching cycles per skill, all the skills selected for the experiment and all lessons in simulated conditions. Approved time-table has been shown in Table 2.4.

TABLE 2.4 :

## Schedule of the Experiment

Time	Room No. I			Room No. II		
	Teach	Feed-back	Re-plan	Teach	Feed-back	Re-plan
8.30-8.38	T <sub>1</sub>			T <sub>1</sub>		
8.40-8.48	T <sub>2</sub>	T <sub>1</sub>		T <sub>2</sub>	T <sub>1</sub>	
8.50-8.58	T <sub>3</sub>	T <sub>2</sub>	T <sub>1</sub>	T <sub>3</sub>	T <sub>2</sub>	T <sub>1</sub>
9.00-9.08	T <sub>4</sub>	T <sub>3</sub>	T <sub>2</sub>	T <sub>4</sub>	T <sub>3</sub>	T <sub>2</sub>
9.10-9.18	T <sub>5</sub>	T <sub>4</sub>	T <sub>3</sub>	T <sub>5</sub>	T <sub>4</sub>	T <sub>3</sub>
9.20-9.28		T <sub>5</sub>	T <sub>4</sub>		T <sub>5</sub>	T <sub>4</sub>
9.30-9.38			T <sub>5</sub>			T <sub>5</sub>

( T<sub>1</sub> means Microteacher 1 )



(b) Training to Student Teachers :

The treatment consisting of the following steps was administered to the sample of student teachers : (i) listing of teacher characteristics, (ii) classroom observation, (iii) orientation to microteaching technique, (iv) role playing, (v) lesson planning, (vi) selection of skills in microteaching technique, (vii) orientation to the skills for study, and (viii) selection of units and preparing microlessons.

(i) Listing of teacher characteristics :

At the beginning of the treatment, student teachers were asked to list down the characteristics of those teachers whom they found to be effective at any stage of their student career. This resulted into a long list of teacher characteristics, consisting of forty three positive characteristics and sixty five negative characteristics. There was some interesting agreement on a number of teacher characteristics. According to priority, they could show agreement on knowledge of subject matter, alert, enthusiastic, knowledge of educational psychology, impartial, sympathetic, love for profession, use of aids and organisation and planning of lessons. As far as negative aspects of teacher behaviour, all agreed on partiality, lack of knowledge, lack of confidence and vagueness in explaining. There were many

other negative characteristics mentioned by individual student teachers such as impatience, cruelty, etc. Studies made by Ryan (1969) on teacher characteristics were referred to for comparison of the lists. They realised that there are number of variations with respect to the nature of good teacher characteristics. Moreover, they realised that many of the characteristics could not be defined and were rather vague and hence difficult to assess or acquire them.

(ii) Classroom observation :

To enable the student teachers to know the importance as well as the difficulty of objective observation, two short lessons were given, one on English grammar and the other on 'effects of heat' in science. Each lesson was followed by about forty minutes discussion. For each of the lessons, supervisors acted as teachers and students, and the student teachers observed and recorded the remarks. Further, they were introduced to the Flanders Interaction Analysis Category System ( FIACS ), a system of observation of classroom teaching activity. The coding system and ground rules were explained to them. Two demonstration lessons, one by the supervisor and one by one of a student teacher, were delivered and discussed thoroughly with special

reference to the element of inter observe reliability and number of skills exhibited in the lesson. Thus, the group was made aware of the fact that observation without any purpose or without any pre-conceived plan is bound to result in producing random results. The observer needs to know precisely variables both as separate and their interaction within the dynamics of classroom operation. They were also acquainted with other systems of observation ( verbal and nonverbal ) so that trainees may know that they can be trained to use them for improving teaching.

(iii) Orientation to Microteaching techniques :

The group of student teachers was introduced to microteaching as a training technique. Salient features of microteaching as component skill approach of training, were highlighted ( refer Chapter I ). Demonstrations by supervisors and student teachers were given for the benefit of the group. Student teachers were specifically asked to focus their attention on a skill being demonstrated in a lesson. They were also given practice in using the FIACS for objective analysis of a lesson.

(iv) Role playing :

The idea of simulations / gaming and role playing was introduced to the group as one of the innovative

techniques of teacher training ( refer Chapter I ). This fact was brought to the notice of students that micro-teaching, as a training technique can be adopted in both simulation conditions with peer teaching and in real conditions with teaching to pupils. In order to have the maximum benefit of practising skills in microteaching in simulation conditions, student teachers were made aware about the importance of role playing of a teacher, a peer supervisor, and a pupil. They were exposed to various roles with the help of typical demonstrations. For this purpose, some members of the supervisory team enacted the role of either authoritarian or democratic teacher while other supervisors acted as students exhibiting the different roles of students. It was followed with discussion.

(v) Lesson planning :

Different types of lessons and lesson planning formats were discussed with the group. From many formats available at different places in the country, format adopted at Regional College of Education, Mysore, was agreed upon for planning the lessons. This format was presented to the student teachers. Writing down the behaviour specifications and other details of the format were discussed thoroughly.

(vi) Selection of Skills in Microteaching technique :

The student teachers responded quite satisfactory when the question of skills and their selection was thrown open for discussion. Their attention was drawn to the fact that casual and uninitiated observer may take a teaching learning situation a smooth operational process. But looking into the classroom deeply, one is struck up at many points. Supervisor and teacher have to develop a kind of awareness to the inter-acting element in the teaching learning situation. Gradually, during the course of discussion, the student teachers were briefly introduced to various technical teaching skills. Ultimately the following list was agreed upon by the group for study :

(i) questioning, (ii) use of illustration with examples, (iii) closure, (iv) reinforcement, and silence and nonverbal cues.

(vii) Orientation to the Skills selected for the study :

The two selected skills - reinforcement and silence and nonverbal cues, were introduced to the student teachers with the theoretical foundations of skills upto the practice sessions.

**Reinforcement Skill :** The student teachers were acquainted with the psychological base of reinforcement skill with regard to its importance, relevance and appropriate use by the teacher. They were made aware of positive and negative, and verbal and nonverbal reinforcers like 'excellent', 'that is good start', 'you don't know', 'silly', 'smile', 'nodding (positively)', 'frowning', 'staring' respectively. It was stressed not to use negative reinforcers. Observation profomas for the skill were discussed with the help of some lessons in simulation. Once the student teachers were clear about the skill and method of evaluating it, demonstration lessons were given by the supervisors which were observed and evaluated by the student teachers. For training purpose, the student teachers were asked to give two lessons in simulation.

**Silence and nonverbal cues skill :** This skill was also introduced by presenting the theoretical background - nature, importance and advantages in promoting greater pupil participation. They were cautioned about over using this skill. Regarding the nonverbal cues, they were asked to restrict themselves to facial cues ( a smile, a frown, or a serious look ), body movements ( moving forward, moving towards blackboard and from blackboard to students ) head movements ( Yes, No, and No~~o~~ or cocking of head ), and gestures ( pointing to student, mentioning to go on

or to stop and pointing from student to other students ). Observation proformas were prepared for this skill and were presented to them. They were given training in using them. Demonstration lessons incorporating this skill in teaching, were given by the supervisors. As in the previous skill, each student teacher gave two microlessons.

(viii) Selection of units and Preparing Microlessons :

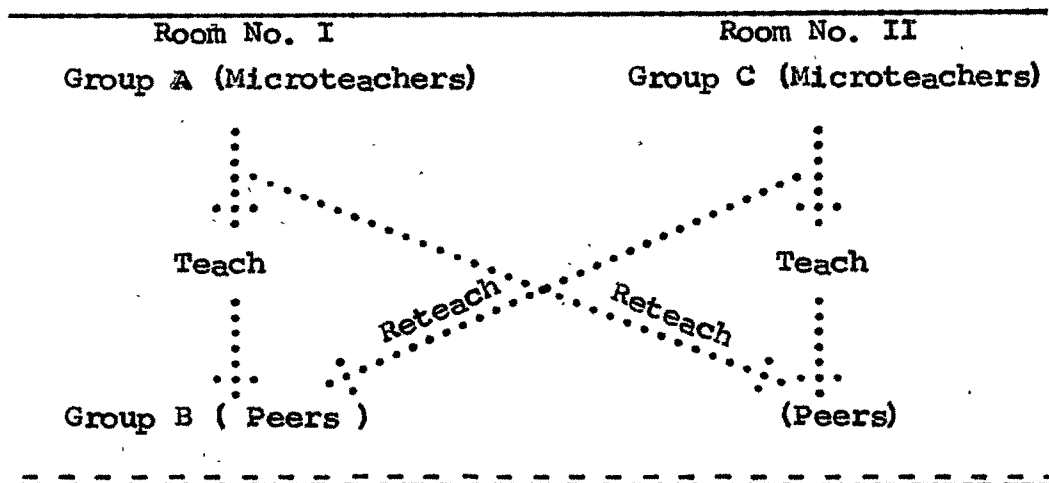
Proper selection of the units, appropriate to the skill, was discussed. The student teachers were given all help in planning their microlessons on the lines of the format of lesson plan already agreed upon and focussing on a particular skill.

2.3.0. DATA COLLECTION

Data collection was started when the student teachers were sufficiently well grounded in the theory of micro-teaching and the skills they were going to practise. Eighteen student-teachers were divided into four groups namely, A, B, C and D. Nine student teachers having two groups, with two supervisors were allotted one room. Two microteaching sessions were running simultaneously. After the completion of the teach session, groups A and C changed their groups for reteach with a purpose to have another set of students ( See Table 2.5). After each microlesson,

TABLE 2.5 :

Scheme of Interchange among Groups After Teach



the lesson evaluation profomas, specified for each skill were filled up by the microteacher, the two peers and supervisors, respectively. Immediate feedback was given in the form of discussion, on the basis of the observations recorded by supervisors, peers and microteachers, on skill evaluation profomas and the FIACS ( See Appendix F ). In this way each student teacher taught four microlessons covering two skills. After administering the treatment and collecting data student teachers were asked to give their free and frank reactions towards microteaching. An essay was developed out of their reactions ( see Appendix G ).



#### 2.4.0. GUIDELINES DRAWN FOR FINAL STUDY

As a result of the findings from the analysis of the data from the pilot study, the following guidelines were drawn for conducting the final study.

- (i) From the favourable attitude of student teachers and smooth functioning of the experiment, it was concluded that microteaching as a training technique, is feasible in Indian condition. Different aspects involved in microteaching should be tried out with a more comprehensive design of the study.
- (ii) Due to administrative difficulties and pedagogical reasons, pupils may not be readily available so microteaching should be adopted in simulation condition for the final study as well.
- (iii) In order to see the extent of transfer of training from microteaching in simulation to real classroom teaching pretest and posttest paralleled group design may be adopted in the final study.
- (iv) In order to evaluate the general teaching competence of a student teacher an observation schedule may be developed which can be used in pretest and posttest in the final study. The observation schedule may represent teaching behaviours of general classroom teaching alongwith the skills selected under the final study.

- (v) Microlesson may be prepared for five to seven minutes. Buffer time may be provided to the microteacher for changing over. That is provision in the time-table may be made for adjusting the next lesson.
- (vi) Since skill of silence and nonverbal cues includes many aspects of nonverbal communication in the classroom, it will be more pertinent to study some of the important components of nonverbal communication more intensively. Thus, the skills of 'body movement' and 'gestures' were decided to be taken up in the final study.
- (vii) The use of reinforcement skill is limited to certain teaching behaviours for motivating the pupils. A more comprehensive motivating skill like stimulus variation may be tried out. Moreso, sub-skills under stimulus variation may be selected which are related to mainly nonverbal communication in the classroom. This seems to be less explored area at present in teacher behaviour.
- (viii) Since peer supervisors would function safely well for providing feedback to their colleagues so in final study, peer supervisors only, may be involved. A trial may be given to different techniques of providing feedback to student teachers through peers in microteaching.
- (ix) Regarding tools for collecting data in final study, observation of teaching using the FIACS was decided to be dropped. As new skills are taken in the final study so new tools for observing each skill may be constructed. 'Attitude Scale' and 'Self-evaluation

of microteaching may be modified in the light of new items added to the final study namely, only peer supervisors for observing the lesson, three techniques of providing feedback, major skill stimulus variation and sub-skills - body movement, gestures and shifting sensory channels.

In the light of these guidelines drawn from the first phase of the study ( pilot study ), the second phase ( final study ) of the study was planned and completed. The final study has been reported in the chapters III, IV, V and VI.

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