CHAPTER IV

PLAN & PROCEDURE OF THE STUDY
Chapter-IV

PLAN & PROCEDURE OF THE STUDY

For the proper construction of massive building blue prints are prepared. Any government before determining and applying the policy has to be planned it very carefully. The monthly household budget keeps the mistress away from the economic crisis. In the same way the clear and systematic statement of the procedure avoids all the difficulties in the way of research and help of researcher to achieve the aims and objectives of the study because planning includes better performance in all the jobs. Procedure is the index of the whole research, which gives design to researcher as well as the reader.

Description of the Procedure is also important so that any researcher who wants to replicate the research can go to the necessary information’s from it, can replicate the work & verify the conclusion for the future guidance. The procedure followed in the present study has been discussed under the following heads.

➢ Method of the Study
➢ Research Design
➢ Variables of the Study
➢ Sample of the Study
➢ Selection of the Tools
➢ Development of the Tools
➢ Formation of Micro and Macro Lesson Plans
➢ Administration of the Tools
➢ Statistical Techniques used
4.1 METHOD OF THE STUDY

The aim of the present research is to study the Teaching Competency of the language pupil teachers through micro teaching approach. Scholars have successfully utilized various methods to study different problems in the area of educational research. After going through the methods and approaches contained in the wide range of studies reviewed in the preceding chapter, the researcher was convinced that Field Experimental Method of research was most suitable for the present study. Moreover, the strategically considerations based on theoretical-conceptual frame of research problem, the objectives of study and the resources available to the investigator, also led to the selection of filed experimental method as the most appropriate one in the context of the present study.

4.2 RESEARCH DESIGN

Research design is a plan for action to get the better results for the problem under investigation. It gives a clear cut picture of investigation, cautions regarding field work and use of the techniques of collection of data and getting for the generalized results. Kerlinger in his book, 'Foundations of Behavioural Research' has quoted- “Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance.”

Kerlinger ‘further explained that the plan is the overall scheme or programme of the research. It includes an outline of what the investigator will do from writing the hypothesis and their operational implications to the final analysis of data. The structure of the research is more specific. It is the outline, the scheme the paradigm of the operation of the variables. Strategy, used here, is also more specific than plan. It includes the methods to be used to gather and analyze the data. In other words, strategy implies how the research objectives will be reached and how the problems encountered in the research will be tackled. A good design tells us what type of statistical analysis to use.
In the present investigation two group pre-test and post-test design was used. The two groups were divided on the basis of I.Q. and achievement of Pupil teachers. The treatment was given in the following manner.

Fig 4.1: Line diagram of two group pre-test & post-test design

4.3 VARIABLES OF THE STUDY

Variables are the conditions or the characteristics that the experimenter manipulates controls or observes. The independent variables are the conditions or characteristics that the experimenter manipulates in his or her attempt to ascertain their relationship to observed phenomenon. The dependent variables are the conditions or characteristics that appear, disappear or change as the experimenter introduces, removes or changes independent variables. (Best 1983. P. 59).

Extraneous variables are those uncontrolled variables (i.e. Variables are not manipulated by the experimenter) that may have a significant influence upon the dependent variable. Many research conclusions are invalidated by the influence of these extraneous variables, (Best 1983. p.61)

The main independent variable for present study was the microteaching given to the pupil teachers. The experimental variable of training microteaching was manipulated in order to compare their relative behavioural effects.
The dependent variable in the present study was the teaching competency and attitude towards reaching of the language pupil teachers of two subjects i.e. Hindi and English.

4.4 SAMPLE OF THE STUDY

4.4.1 DESCRIPTION OF THE UNIVERSE AND ITS ELEMENTS

Universe of the present study consisted of male and female pupil teachers of two teaching subjects i.e. Hindi and English. All the elements in the population were included irrespective of their caste, creed and religion.

4.4.2 SIZE OF THE SAMPLE

A sample is a small proportion of the population selected for study. Research work can hardly be undertaken without the use of sampling, because a researcher with limited resources and time can not cover the entire population in his study. So, sampling becomes an indispensable technique for him. The study of the total population is not possible and is rather impracticable. The use of representative sample enables us to draw valid inferences from the study of a small portion of the Populations. Miller has rightly pointed out that the essential requirement of any sample is that it is as representative as possible of the population or universe from which it has been drawn. Obviously, the validity and reliability of generalization of the findings depend on the representativeness of the sample. Hence, the sample drawn for the present study comprised in the ratio of 1:1 for English and Hindi respectively of the population of the universe.

The actual unit of the sample in this study is the pupil teacher. But the selection of the sample on the basis of the pupil teacher was found to be difficult as well as inconvenient. So, the researcher used cluster sampling method in which the entire group of pupil teacher studying in B.Ed. had been taken for the study and the colleges were selected on the basis of random method through lottery technique.
For the present investigation four training colleges affiliated to C.C.S. University, Meerut was considered as a target population. Out of these colleges 100 student teachers of language group studying in B.Ed. were taken for the study. The two groups (Experimental and controlled) were carefully and diligently matched. The break-up of the sample has been shown in following tables.

Table 4.4.1 Participant institutions and student teachers involved in the study

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of the Institution</th>
<th>No. of student teachers involved</th>
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<td></td>
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<td>Hindi</td>
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<td>Tejasvi College of Education, Meerut</td>
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<tr>
<td>3</td>
<td>Dr. Shadi Lal College of Education, Meerut</td>
<td>14</td>
</tr>
<tr>
<td>4</td>
<td>Subharati College of Management and Information Tech., Meerut</td>
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<td></td>
<td>Total</td>
<td>50</td>
</tr>
</tbody>
</table>

Table 4.4.2 : Sex-wise breakup of student teachers involved in the study

<table>
<thead>
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<th>Name of the Institution</th>
<th>No. of student teachers involved</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
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<tr>
<td>1</td>
<td>Deewan Centre of Education, Meerut</td>
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<td>3</td>
<td>Dr. Shadi Lal College of Education, Meerut</td>
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<tr>
<td>4</td>
<td>Subharati College of Management and Information Tech., Meerut</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>50</td>
</tr>
</tbody>
</table>
Table 4.4.3 : The breakup of the sample in experimental and control group

<table>
<thead>
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<th>S. No.</th>
<th>Name of the Institution</th>
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<td>Experimental</td>
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<td>Dr. Shadi Lal College of Education, Meerut</td>
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<tr>
<td>4</td>
<td>Subharati College of Management and Information Tech., Meerut</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50</td>
</tr>
</tbody>
</table>

4.5 **SELECTION OF THE TOOLS**

The tools used to get various measures in the study were selected on the basis of the following criteria

1. Suitability of the tools in Indian conditions for Pupil Teachers.
2. Time needed for the test because many tools had to be administered by the investigator.
3. Availability and Cost of the tools.
4. Reliability and Validity of the tools.

4.5.1 **SELECTION OF THE TEACHER ATTITUDE INVENTORY**

In the present investigation, the investigator had selected the Teacher Attitude Inventory developed and standardized by S. P. Ahluwalia (1970). This attitude inventory consists of ninety items distributed over six subscales constructed on the lines of Likert’s summated rating procedure. Each scale has 15 statements related to particular aspects of professional attitudes of teachers. The six areas covered by the subscales are
1. Teaching profession
2. Class-room teaching
3. Child centered practices
4. Educational process
5. Pupils and
6. Teachers

The responses are to be given on a five points scale. The split-half reliability is found to be 0.79 (N = 239). The test-retest reliability after intervals of 3 months and 9 months are found to be 0.68 (N= 102) and 0.64 (N = 290). The Inventory has a satisfactory content validity.

Each item alternative is assigned a weight ranging from 4 to 0 for favourable items, i.e. 4 (strongly agree), 3 (agree), 2 (undecided), 1 (disagree) and 0 (strongly disagree)). In the case of unfavourable items range of weights is reversed i.e., from 0 to 4. [0 (strongly agree), 1 (agree), 2 (undecided), 3 (disagree) and 4 (strongly disagree)]. The attitude score of a subject is the sum total of item scores of all the six subscales. The theoretical range of scores is from 0 to 360 with the higher score indicating the more favourable attitude towards teaching and allied aspects.

The inventory appears to have content validity and the method of selecting items supports this supposition. In addition, differences in mean scores were found among some selected ‘Known’ groups. The observed differences were found to be in the expected direction. The validity was determined through stimulus group technique.

The TAI appears to have reasonable high reliability and validity. As such it is a quite adequate scale to measuring attitude towards teaching profession, class-room teaching, child centered practices, educational process, attitude towards pupils and teachers.
This is a new inventory and the content of its items seems appropriate for extensive use for the purposes of research with teachers. This inventory is useful for conducting research in the following areas:

1. Measuring the effectiveness, mainly the area of attitude development of teacher preparation/education programme in the country.

2. Knowing whether student-teachers have acquired the desired attitude.

3. Assessing the quality, in respect of attitude development of secondary teachers training college programme.

4.5.2 SELECTION OF THE TEACHING COMPETENCY SCALE

For measuring Teaching Competency of pupil teachers Baroda Teaching Competency Scale was used. This tool was used to get the criterion measure in general teaching competence of the subjects. It is an observation scale to measure teaching competence through rating procedure. It was developed by the centre of advanced study in Education (CASE) Baroda by Dr. Passi and Lalitha in 1976. Later in 1980, it was revised by National Council of Educational Research and Training, Delhi. The scale administered in the revised form given by National council of Educational Research and training (N.C.E.R.T.), Delhi.

It has 24 items, relating the class management, planning, presentation and evaluation to be rated on a four point rating scale each item ranging from ‘0’ for “Not at all” to ‘4’ for “very much”. This scale has reliability coefficients range from 0.85 to 0.91. The scale has factorial validity.

Through fulfillment of a desirable teaching activity is allotted three points, the partial fulfillment of the activity is allotted two points, over emphasis an activity is allotted one point and zero point is given if the activity is missing.
For observe various skills in pupil teachers following tools were prepared

1. Observation Schedule cum Rating Scale for Skill of Reinforcement

2. Observation Schedule cum Rating Scale for Skill of Probing Questioning

3. Observation Schedule cum Rating Scale for Skill of Stimulus Variation

4. Observation Schedule cum Rating Scale for Skill of Illustrating with Examples

5. Observation Schedule cum Rating Scale for Skill of Explaining

4.6.1 **Observation Schedule cum Rating Scale for Skill of Reinforcement:**

The learning theory given by Clark Hull emphasis the reinforcement to the correct response of the student by the teacher. Reinforcement can be defined as a process of motivating an individual by supplying favourable external stimuli. In other words we can say that reinforcement is a process of which the product is motivation, which is response by an individual to a favourable stimulus provided by the teacher for better learning and classroom situation. But supplying favourable stimulus in terms of reinforcement is also a skill to be acquired by a teacher. A teacher by acquiring this skill acquires a quality of patience a reinforcement considers only the positive aspect of the teacher behaviour that which forms the desirable constant. As for example saying yes, good, excellent, correct, forms the verbal part of the positive reinforcement. Nodding the head, passing a smile, giving a friendly look, and writing the correct response on the black board forms
the non-verbal aspect of the skill enforcement. In the classroom situation negative reinforcement like no, wrong, poor, not at all, sneering, frowning etc. should be avoided to as great extent as far as possible.

The student teacher is first told and explained the theoretical aspect of the skill. He or she is then asked to prepare a micro lesson plan keeping in view the skill reinforcement. The student teacher is then asked to teacher the prepared lesson and observations are taken by the observers which are either the student’s from the same class or the supervisors. The flow is marked out and the pupil teacher is made to realize the deficiencies of her/his teaching. This forms the feed back part of the microteaching cycle. The pupil teacher is then asked to replan the lesson and reteach it. Again it is observed and if there are any more mistakes the pupil teacher is made aware of them. The reteach session is followed by replanning and second reteach, session is there are ample deficiencies in the teaching till Mastery over the skill is acquired.

For the effective use of the skill of reinforcement the following behavioral components of the skill were used:

(i) **Use of Praise Words** :

It involves giving verbal or linguistic expressions which act as reinforcers such as good, very good, excellent, fantastic, splendid, well done, yes, right, correct, fine, etc. after the pupil has responded, sometimes words and phrase like go on, go ahead, carry on, continue etc. also act as reinforcers.

(ii) **Repeating and Rephrasing Pupil Responses**

The teacher repeats the correct response of the pupil or rephrases it for the benefit of other pupils in the class. Such behaviour has reinforcing effect on the pupils. Teacher should repeat only novel and significant answers.
(iii) **Use of Positive Non-Verbal Reinforcers:**

When a teacher uses gestures and performative behaviour to reinforce the student’s responses, it is known as positive non-verbal reinforcement. This component has four elements –

- Nods and Smiles
- Moving towards the responding pupil
- Giving a friendly look
- Writing pupil’s responses on the blackboard

The positive non-verbal reinforcement is more effective in bringing about behavioral changes, as repeated use of positive verbal reinforcers reduces their effectiveness and ultimately become part of teacher’s mannerism.

(iv) **Writing Pupils Responses on the Blackboard**

Teacher may at time write correct and original pupil responses on the blackboard to give reinforcement to the pupils. This has an additional advantage of the securing pupil attention.

(v) **Use of Discouraging Words**

The use of certain undesirable reinforcers weakens the described behaviour. The other effect of this type of reinforcement is decrease in the level of motivation and interred words like wrong, no, incorrect, true, foolish, non-sense, shut up etc. should not be used extensively in order to facilitate learning.

(vi) **Use of Negative Non-Verbal Reinforcement**

This type of reinforcement can be given to student’s conscious of certain undesirable behaviour. This can be done through such behaviors like frowning, widening of eyes steering, modding the head, tapping impatiently with hands, avoiding the particular pupil and moving away
from him. This type of reinforcement should be used with caution as it leads to disrupt rapport between pupils and the teacher.

(vii) Inappropriate Use of Reinforcers

Skillful management of reinforcers help a teacher to promote pupils learning. The effective use of reinforcers to modify pupil’s behaviour in the desired direction. So the teacher should avoid inappropriate use of reinforcers.

Observation Schedule cum Rating Scale for
Skill of Reinforcement

Name of the Student Teacher ......................... Class ...........

Concept ................................................. Time ...........

Session ........................................ Teach / Reteach ............

Date ........................................ Supervisor ......................

<table>
<thead>
<tr>
<th>Tallies</th>
<th>Component</th>
<th>Rating</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Use of Praise words</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Repeating and Rephrasing pupil responses</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Use of Positive non-verbal reinforcers</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Writing pupils Responses on the blackboard</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Use of discouraging words</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Use of Negative Non-verbal Reinforcers</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Inappropriate use of Reinforcers</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
4.6.2 Observation Schedule cum Rating Scale for Skill of Probing Questioning:

When a question is put in the classroom a teacher comes across different situations. These primarily are:

(i) No response situation
(ii) Partially correct response
(iii) Wrong response
(iv) Incomplete response
(v) Correct response

It generally happen that in absence of correct responses the teacher starts complaining, repeating and restructuring the question instead of trying to elicit the correct response from the student. Handling of pupil responses when they are not correct is a skill. The skill of probing question is comprised of behaviours of prompting, seeking further information, refocusing and redirection and increasing critical awareness. These are certain devices that a teacher looses to reach the correct response from the other four situations mentioned above.

For the effective use of the skill of reinforcement the following behavioral components of the skill were used:

(i) **Prompting**

Prompting in technical language means presenting a stimulus to the terminus stimulus (the question placed in the class) to make the response more likely when the student is deviated from it. In other words, it is a hint or clue which help the pupil to arrive and the correct response while using this technique, the teacher does not provide the correct response but guide the pupil by providing hints to arrive at the correct response. A judiciary view of prompting is highly desirable due to its healthy effect on pupil participation in teaching learning situation.
(ii) **Seeking Further Information**

This technique is used by the teacher in case of either in complete response or in case of partially correct response. In this the teacher elicits additional information from the pupil to bring the initial (incomplete or partially correct) response to the desired level.

(iii) **Refocusing and Redirection**

Refocusing and Redirection in case if a student fails to give a correct response a teacher can get a correct response from any other student who can give a correct response instead of wasting the time with one student and then can ask the student to repeat the correct response. A teacher generally uses the technique of refocusing when he wishes the students to compare and contrast the present response to previous one.

(iv) **Increasing a Critical Awareness**

In case when the student gives correct response teacher uses this technique to increase critical awareness by asking how and why questions.

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**Observation Schedule cum Rating Scale for Skill of Probing Questioning**

Name of the Student Teacher................................. Class .........

Concept.......................... Duration........................ Time .......

Session.................................................. Teach / Reteach...........

Date ........................................... Supervisor ..............................

<table>
<thead>
<tr>
<th>Tallies</th>
<th>Components</th>
<th>Rating</th>
<th>Comment</th>
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</thead>
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<tr>
<td>Prompting</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seeking further information</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refocusing and Redirection</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing critical awareness</td>
<td>critical</td>
<td>1 2 3 4 5 6 7</td>
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</tbody>
</table>
4.6.3 **Observation Schedule cum Rating Scale for Skill of Stimulus Variation** :

Securing and sustaining pupil’s attention is an essential element in effective teaching. To avoid fatigue and in attention of the pupil a teacher brings about certain changes to encounter this challenge. To promote optimum learning securing and sustaining pupils attention a teacher introduces in his teaching the element of variation in voice, variation in media, are variations in certain dimensions that enables the teacher in securing and sustaining pupils’ attention. This provides readiness of mind and promotes learning in prolonged classroom periods. The components of this skill are:

(i) **Movement**

Teacher’s movement contributes significantly towards securing and sustaining pupil’s attention. Lack of motion or delivery of lesson from and in one position, reflects lack of alertness and vitality. This makes the teaching learning environment monotonous. Change in posture provides physical relation and contributes to alertness, enthusiasm and variety in teaching behaviour. These movements loose their value if their number is not delimited.

(ii) **Gesture**

Use of gestures is another teaching behaviour introducing variation in teaching. Gestures are non-verbal cues to express feelings and emotions to emphasis significant ideas to indicate shape, size and movement facets etc. Gestures consist of hand and head movement, eye movement, social expressions etc. Verbal communication is less effective in conveying feeling and emotions than the verbal communication combined with gestures, only if they are properly planned and appropriate.
(iii) **Modulation of Voice**

Voice pays a wider role in classroom as teacher’s behaviour predominantly verbal. Constancy in the dimensions of voice namely pitch, Jon. and Speed makes communication dull and drab and affects adversely pupil’s attention, interest and transaction in classroom. Thus, variation in voice in the natural course secures and sustains pupil attention.

(iv) **Focusing**

A teacher secures pupil attention directly using behaviours such as body movement, gestures and change in voice. Sometimes he secures then attention directly using behaviours that focus pupil attention on particular object, word, idea or rule etc. Focusing can be considered along three dimensions - verbal, gesture, focusing and verbal-cum-gesture focusing, verbal statement like ‘Look here’ fall in the category of verbal focusing, when focusing is done through gesture emphasizing some points, it is termed as gestured focusing. When a teacher uses both verbal statements and gestures to indicate shapes, express emotions to emphasize, the focusing is known a verbal-cum-gesture focusing.

(v) **Change in interaction Pattern**

Teaching is a two way process. Only teaching has no value until and unless there is learning. Action of a teacher reaction of a student and interaction between the two goes on continuously in the communication process. Interaction is verbal or non-verbal; interaction can be both the ways – teacher pupil interaction, pupil teacher interaction or pupil interaction. It promotes learning

(vi) **Pausing**

Pausing stands for introducing silence during the talk. Silence has a language of its own and can effectively be using in securing and sustaining pupils attention. An unduly long pause looses the effectiveness and fails to secure pupils attention.
(vii) Pupil's Physical participation:

We know that activity centered methods of teaching strengthened the ties of learning. Pupil enjoy the lessons which give an opportunity for physical participation, Physical participation can be in form of handling the apparatus, dramatization and writing on the black board.

(viii) Aural-Visual Switching:

Constant use of one medium of imparting knowledge distracts pupil's attention. Therefore, bringing variation in the medium becomes necessary, i.e. changing on from aural to visual, from aural to aural visual or from visual to aural help teacher in maintaining pupil attention. Showing charts, pictures, maps etc.

Observation Schedule cum Rating Scale of the Skills of Stimulus Variation

Name of the Student Teacher............................... Class .................

Concept........................................................................ Time ............

Session................................................................. Teach / Reteach...........

Date .............................................. Supervisor ..............................

<table>
<thead>
<tr>
<th>Tally</th>
<th>Component</th>
<th>Rating</th>
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<tr>
<td>1.</td>
<td>Movement</td>
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<td>2.</td>
<td>Gesture</td>
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</tr>
<tr>
<td>3.</td>
<td>Modulation of Voice</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Focusing</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Change in interaction Pattern</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
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<td>6.</td>
<td>Pausing</td>
<td>1 2 3 4 5 6 7</td>
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<tr>
<td>7.</td>
<td>Pupil's Physical participation</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Aural-Visual Switching</td>
<td></td>
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</tr>
</tbody>
</table>
4.6.4 Observation Schedule Cum Rating Scale for Skill of Illustrating with Examples:

The skill of illustrating with examples involves two aspects, are related to the formulation of examples used and the other to the way it is presented. Illustrations and examples help the teacher to delivery his goods more effectively. They motivate the students and make their perception clear.

Illustrating is a process of making clear the concept taught by linking understood by pupils. Hence, illustrating with examples requires the use of such examples suited to pupil's previous experience and interest level. Examples can be classified according to the type of sensory channels though which the learners recline them. Accordingly, the examples can be visual, unitary and tactual. Visual examples involves presentation of objects, models etc. for illustrating purposes. All oral examples are auditory in nature. Tactual examples involve the use of objects, but the learners understand the concept illustrated through such examples by the serve of touch.

Examples can also be classified according to the media through which they conveyed to the learners. Accordingly, examples can be verbal and nonverbal. Verbal examples are those that are given verbally. They include giving analogies, story telling etc. Non-verbal media include (a) objects, (b) model, (c) pictures, (d) diagrams, maps and sketches, and (e) experimental demonstration.

Real objects can be used as examples to clarify some concepts or principles. A Concept, rule or principle can be associated and taught with the help of examples employing objects.
Models are specially prepared to describe, illustrate an idea, Concept or principle. The models are replica of reality. When models are specially prepared to illustrate a concept and can be detached in its parts, for closer examination, its value in a classroom illustration can be more than the original object itself.

When objects are not available for use in class-rooms, pictures may be used for illustrating an idea or concept pictures are handy and sometimes economical. The idea or principle can be developed through pictures. Pictures themselves can be abstract, but they can help in illustrating a point with oral explanation.

Diagrams, maps and sketches are useful in teaching history, geography, science etc. They help in clarifying and bringing out essential points in a lesson.

Experimental demonstration is an important illustrative device in the teaching of science, nature study and geography.

Thus, there are various nonverbal media for using example. But none of them can be effectively used without an oral explanation either by pupils or by teachers.

Verbal, medium giving the examples without the use of any of the nonverbal media described above. To illustrate an idea verbally the teacher may tell stories or give analogies. In higher classes, a teacher may illustrate a concept or a related example orally from pupils’ previous experiences. There may not be any need for him to use non verbal media as pupils are mature enough to imagine the objects or situations.

Thus, recollecting, the characteristics of a good example: (i) It should be simple, (ii) it should be relevant to the concept, (iii) it should be interesting to the pupils.
4.6.5 Observation Schedule cum Rating Scale for Skill of Explaining:

The different number of concepts, phenomenon generalizations, procedures, functions and reason for certain occurrences are to be learnt by a pupil. He has to learn about their attributes constituents relationship and application. To response these a teacher organizes a number of activities/learning experiences. He uses a number of interrelated statements related to the concepts, phenomena, generalization and functions with a view to develop in pupil an understanding about them.

The set of these interrelated statements used for the purpose is termed explanation and the process is termed as explaining.

The explaining effectiveness depends upon pupils understanding it generates. The question how, what and why are mainly explained. The explanations thus given are descriptive, interpretive and the reason given.
In our day to day life we find persons explaining some idea or phenomenon by going deep into the matter with appropriate examples. We also find persons who cannot explain clearly. They jumble up ideas. They not only confuse the audience but also get confused themselves. In classrooms right from grade I through higher grades, the teacher explains ideas or concepts. A teacher who can explain things well will go a long way in making his lesson effective. When a pupil does not clearly understand the idea, what the teacher tries to convey, he generally asks for an explanation. Generally, a teacher is said to explaining when he is describing, ‘How’, ‘Why’, and sometimes ‘What’ of a concept, phenomenon, event, action, or condition.

Explaining can also be defined as an activity to bring about an understanding in someone about a concept, principle, etc., that is, it is an activity to fill up a gap in someone’s understanding. When a person comes across a new phenomenon, he may relate it to the past experience. Explaining involves filling up the gap in his understanding of the new phenomenon by relating it to past experience. Thus, explaining depends upon the type of past experience, the type of new phenomenon, and the type of relationships between them.

Explaining is also process of relating an object, phenomenon, action, or State of affairs so that the understanding about the former is enhanced. According to this, an explanation brings out relationship between objects, phenomenon, actions, etc. by giving rules, empirical generalized deductive reasoning, a series of events resulting in the subject of explanation, causes or reasons, and so on.

In a classroom, an explanation is set of interrelated statements made by the teacher related to a phenomenon, an idea etc., in order to bring about or increase understanding in the pupils about it. In explanation is generally be around a phenomenon, action, result, condition or an event. These are various techniques through which we can explain an idea, phenomenon etc., These techniques are:
(i) Question answers technique.  (ii) Audio-visual aids

Thus, to sum up, the skill of explaining involves maximizing the use of desirable teacher behaviour, i.e. using explaining links, using beginning and concluding statements and testing pupil's understanding and avoiding the use of undesirable teacher behaviour - stating irrelevant statements, lacking in continuity in statements, using inappropriate vocabulary, lacking in fluency, and using value words and phrases.

**Observation Schedule cum Rating Scale of the Skills of Stimulus Variation**

Name of the Student Teacher........................................ Class ...........

Concept.............................................................. Time ...........

Session.............................................................. Teach / Reteach...........

Date ......................... Supervisor ..............................

<table>
<thead>
<tr>
<th>Tallies</th>
<th>Component</th>
<th>Rating</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Desirable Behaviour</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Using appropriate beginning and concluding statements</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Using explaining links</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Covering essential points</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Question to test pupil's understanding</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Undesirable Behaviour** | | | |
| 1. Using irrelevant statements | 1 2 3 4 5 6 7 | | |
| 2. Lacking fluency | 1 2 3 4 5 6 7 | | |
| 3. Lacking continuity in statements | 1 2 3 4 5 6 7 | | |
| 4. Making use of inappropriate vocabulary, vague words and phrases | 1 2 3 4 5 6 7 | | |
4.7 FORMATION OF MICRO AND MACRO LESSON PLANS

For the present study the micro-lessons and macro-lessons were prepared by the researcher. These lessons were supplied to student teachers for practice in simulated and real situation.

(a) Micro-lesson

Micro-lesson is a short lesson plan in which one skill was used at a time. The main feature of this plan was that while, providing practice to student-teachers main consideration was given to components of the skills and not to the subject matter. These lessons were prepared on the two teaching subject ie. Hindi and English.

The micro-lesson plans were formatted on the basis of following teaching skills which were considered in the study.

(a) Skill of Reinforcement.
(b) Skill of Probing Questioning.
(c) Skill of Stimulus Variation.
(d) Skill of Illustrating with Examples.
(e) Skill of Explaining.

The lessons were planned in three horizontal columns. The first column indicates ‘teacher behaviour/activity’, the second column indicates the pupils behaviour/activity’ and the third column indicates the components teaching behaviour of skill under practice as they occurred.

One skill is practiced at a time, when a skill is practiced the attention is focused only on the components of the skill which constitute the content and not on the nature of the content. Two teaching subjects ie. Hindi and English were selected for the study. After content selection, amenable for skill practice the researcher followed the designing of situation in which different components of the skill would occur. This situation would be different for different skills.
After designing situation to represent the skill component the next step was to sequence those in the form of lesson plan. The aim of sequencing the situation was to provide logical continuity in the presentation of the practice situation emerging as a lesson. This presentation had to be in accordance for the format meant for the micro-lesson selected for the purpose.

While presenting the content in the selected format of micro-lesson, each component of the skill should be labeled whenever they occurred when the micro-lesson plan was ready according to the format selected for the purpose, we reviewed these plans and given to the student-teachers for training.

These micro-lessons were provided to the student teachers of the experimental group to received training in the teaching skills. The time duration of 6 minutes was given for one micro-lesson plan as per micro-teaching setting under the standard procedure.

These micro-lessons were supervised by the supervisor and researcher with the help of both type of observation schedule, frequency as well as rating immediate feedback was given on the basis of tallies and the rating marked on the observation schedule. Two complete cycles of micro lessons for each of the five skills were given by the student-teachers.

(b) Traditional Lesson

These lessons were planned on the basis of B. S. Bloom’s Taxonomy. This process is called evaluation process. In this process educational objectives were divided into four parts.

1. Knowledge
2. Understanding
3. Application
4. skill
The lessons were planned in three horizontal columns. The first column indicates Expected Behavioural outcomes, the second column indicates the learning experiences and the third column indicates Real Learning Outcomes. The second column is sub-divided in two subheads (a) teacher activities and (b) pupil activities. The two teaching subjects ie. Hindi and English were considered for the study. After content selection the researcher followed the designing of situation in which different lessons were prepared.

These lessons were provided to the student-teachers of the controlled group to receive the training after clarifying the concept of traditional approach. These lessons were supervised by the supervisors and researchers with the help of both type of observation schedule, frequency as well as rating marked the observation schedule.

4.8 ADMINISTRATION OF THE TOOLS

First of all the Teacher attitude inventory was administered to measures the attitude of the students going to be teachers towards teaching profession.

Then all the students were asked to teach through traditional approach, and the teaching competence assessment scale was administered after two lesson plans than the controlled group continued to teach through traditional approach and the experimental group was shifted to teach through microteaching approach, and on the last lesson plan of each of the students from both the group the teaching competency assessment scale were re-administered and the scores were taken down. After this the Teacher Attitude Inventory was also re-administered to study as the effectiveness to training through microteaching approach over the traditional approach of teaching in Hindi, English and by the positive change in attitude of the student teachers towards the training profession, if any.
Treatment

It was decided that the experimental group be given training in the selected teaching skills through micro-teaching approach and the controlled group be left to have training through traditional approach.

Step – I  Discussion of Microteaching concept

The concept of micro teaching was explained to the student teachers in detail. It was followed by the discussion.

Step – II  Discussion of teaching Skills

The concept of teaching skills was clarified. The following teaching skills were explained.

(a) Skill of Reinforcement
(b) Skill of Probing Questioning
(c) Skill of Stimulus Variation
(d) Skill of Illustration with Examples
(e) Skill of Explaining

One skill at a time was discussed before practice. The student-teacher were also trained in observation. The time duration of each skill was 5 minutes.

Step - III  Presentation of model lesson

The discussion of skill was followed by model lessons given by the researcher in the method subject i.e. Hindi and English.

Step - IV  Preparation of micro-lesson plans

Lesson were formulate by the researcher.

Step - V  Micro teaching setting

The microteaching setting was done under the standard procedure.
(a) Time —
Teach 6 minutes
Feedback 6 minutes
Replan 12 minutes
Reteach 6 minutes
Refeedback 6 minutes
Total 36 minutes

(b) Number of student teachers —
3 to 10 (depend on the strength of Language student teachers)

(c) Supervisors —
One (from each institution)

(d) Sources of feedback —
College supervisor and peers

**Step VI — Sequence of Skills**

Practice of the five skills by the student teachers were followed

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Skill</th>
<th>Time duration (minutes)</th>
<th>Time duration of the lesson for the integration of skill introduction (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skill of Reinforcement</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Skill of Probing questioning</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Skill of stimulus variation</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Skill of illustration with examples</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>Skill of Explaining</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>Conclusion</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>35</td>
</tr>
</tbody>
</table>
Step – VII  Observation of teaching skills

The five teaching skill being developed through micro-lessons were observed by the peer supervisor using frequency count as well as rating. The rating were given after the lesson on a rating schedule.

Step - VIII  Feedback

Immediate feedback was given to the student teachers individually through observation schedule based on the tallies and the rating on the observation schedule and the interpretation in the light of model lesson.

Step - IX  Teaching time

Teaching time for both micro-teaching group and additional group was same.

Further to see the effect of training in skill through microteaching in simulated and real condition the feedback was provided through observation schedule.

After this a comparison was made by considering teaching competence of student teacher gathered so far in real classroom situation by finding the difference in their teaching competency before training in skills through micro-teaching and after it. This was ensured through a post test in the shape of teaching competence scale. Further, attitude of the student teacher towards micro-teaching was adjudged by giving Ahluwalia’s Attitude Inventory.

4.9  STATISTICAL TECHNIQUES USED

The role of statistics in research is to function as a tool in designing research, analyzing its data and drawing conclusions. The researcher adopted various descriptive and inferential statistical measures in order to arrange and draw out the essence from the collected data.
Fig. 4.9.1 Uses of Statistical Techniques

The data so gathered were analyzed by way of using the following statistical devices to testify the hypotheses.

**DESCRIPTIVE STATISTICAL TECHNIQUES**

Certain Descriptive statistics were computed in order to describe the nature and distribution of scores and as a base for inferential statistics. The used techniques were.

1. **Mean**: It is the first measurement of the central tendency. This statistical technique was applied nearly all the test scores gathered during the study i.e., the scores from Attitude Inventory, Teaching Competence Scale, observation sheet and assessment guide.

2. **Standard Deviation**: To study the variation in the scores of dependent and independent variables, standard deviations were calculated.

3. **Bar Diagram**: It was used to compare the mean values and standard deviations of dependent and independent variable.

**INFERENTIAL STATISTICAL TECHNIQUES**

The following inferential statistics was used in the present study to test the hypotheses of the study as well as to draw defined conclusions on the basis of the results obtained by the tests.
1. Critical Ratio Test: Under the test of significance critical ratio test was used to compare the two groups and to study the significant difference exist in teaching competency and attitude of language pupil teachers.

OVERVIEW OF THE CHAPTER

In the chapter, the design of the study was outlined. A sequential schedule of the steps involved has been given. Selected Institutions of data collection are described and the reasons of their selection are also mentioned. The methodology of the study was Experimental method. The different tests for measuring Teaching Competency and Attitude towards teaching have been described. Different statistical techniques, which were suitable for computation of scores, were given.

The next chapter presents the analysis and interpretation of the data and results derived.