CHAPTER I

INTRODUCTION

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1.0.   THE PRESENT STUDY :

The present study entitled "Effect of Various Treatments
on the Acquisition of Teaching Skills through Microteaching" is an
experimental study. It pertains to the area of in-service teachers'
training for the classroom teaching performances.

It aims at studying the efficacy of various feedback
treatments on the acquisition of five teaching skills on the
development of general teaching competence. It also aims at studying
the relative effectiveness of the microteaching under various feed-
back treatments on the acquisition of those skills compared to the
integrated skill-based traditional practice teaching on the
development of global teaching competence. As five teaching skills
have been used during practice sessions under different feedback
treatments, more specific study is also taken upon the efficacy
of acquisition of specific skills during practice on the ability
to use these skills in macro-situations. The study also aims to
find the effect of the acquisition of teaching skills under
different feedback treatments on the attitudes of teachers towards
teaching, as well as, to study their reactions towards microteaching.

This experimental study has been conducted on
in-service teachers of secondary schools. The various feedback
treatments are : self-analysis through audiotape, supervisory
feedback, supervisory-cum-audiotape feedback during micro-
teaching and the conventional supervision during

practice teaching as in the teachers' training institutions but, having skill-based approach. The five teaching skills for acquisition are: Probing Questioning, Explaining, Illustrating with Examples, Stimulus variation, and Reinforcement. The final outcomes of various type of treatments are measured in terms of general teaching competence, summated scores on the five specific skills of general teaching competence, and attitude towards teaching. The final data are subjected to analysis of parametric and non-parametric statistical measures. The study is culminated with broad conclusions and implications.

Over and above, this study is addressed to the following questions :

Whether microteaching is feasible and instructional strategies on various teaching skills developed for preservice teachers' training programme are adaptable to meet the challenging needs of the in-service teachers ?

Whether the acquisition of teaching skills have given some impact on the development of general teaching competence ?

Which feedback treatments produce greater teaching competence ?

How does feedback treatment affect the teacher behaviour and classroom transaction ?

Whether microteaching is a more effective technique in comparison with the traditional practice teaching to achieve the teaching skill ?

Whether microteaching is effective in in-service training programme without the sophisticated gadgets ?

Whether the acquisitions of teaching skills under various
feedback treatments affect teachers' attitudes towards
teaching ?

What are the reactions of the teachers towards skill-based
microteaching, and integration of teaching skills in macro-
situations ?

The rationale of these questions and related issues is being
presented through a theoretical framework developed upon the bases
of related studies and observations given under various captions of
this chapter. These captions are : the teacher education programme
with special reference to in-service teachers; analytical approach
and training of in-service teachers; microteaching : meaning and
underlying principles; related studies on microteaching - effective-
ness of microteaching, feedback in microteaching, teaching skills
studied through microteaching, significance of specific five teaching
skills, effect of skill acquisitions on teachers' attitudes towards
teaching; statement of the problem, objectives, hypotheses, key
terms used, delimitations of the study; and scheme of chapterisation.

1.1.   THE TEACHER EDUCATION PROGRAMME WITH
        SPECIAL REFERENCE TO IN-SERVICE TEACHERS :

Schools exist for the purpose of providing effective
instruction and pupils' learning. But the future of schools depends
on the teacher who is of paramount importance in a national system
of education. He is the key to the whole formal educational process.
Therefore, a sound programme of professional education of teachers
is essential for the qualitative improvement in general and effective
instruction in particular.

Demands for improvement of the quality of instruction in
our schools over the past decade, coupled with the increased need
for understanding of the teaching-learning process have led to the
provision of training programmes for the teaching staff of nearly
all schools. Along with the rapid growth of knowledge within the
subject fields, pedagogical theories and practices in using various
instructional strategies and tactics, and rapid changes towards
the challenging needs of individual, societies and the state as a
whole, a new perspective for the teacher to improve himself has
arisen. The dynamic evolution of science, technology, culture and
pedagogy make it necessary for the basic preservice training of the
existing teachers to be supplemented by further in-service training.

The modernization of teaching, implies a modernization of
teacher education programme. This modernization of teacher
education takes into account the recent development in knowledge
and its interdisciplinary nature, modern and challenging strategies
and tactics, and the need of the community to solve a number of
problems like adults' illiteracy, wastage and stagnation in
education etc. Hence, the guiding principle for educational policies
is, as stated by Faure Commission, UNESCO (1972), "Every individual
must be in a position to keep learning throughout his life. The
idea of life-long education is the keystone of the learning society".
The good teacher is never fully prepared for teaching, but is for
ever preparing. His preparation begins long before he enters a
teacher education programme and continues long after he completes
it. In a formal programme he should, concurrently, be both a
teacher and learner, establishing a dual role which he will maintain
as long as he teaches (Robinson, 1971).

In stating the need for continuing professional preparation,
the Education Commission (1966) has urged the urgency in teaching
profession because of the rapid advance in all fields of knowledge
and continuing evaluation of pedagogical theory and practice. In
the past many teachers ceased formal learning when they qualified
as teacher. Knowledge is growing in extent at a very fast rate. It
is very difficult for professional researchers to keep pace with
it, even within very narrow fields. It is therefore necessary for
the teachers to avail themselves of the facilities for further
in-service education keeping pace with the knowledge explosion;
new pedagogic theory and practice having modern techniques, methods,
materials and media; and the changes in society. NCERT (1970) in
its publication of Elementary Teacher Education remarked that
in-service education should be equally concerned with continuing
growth in an intellectual curiosity, in creativity and imagination,
in seeking new insights and relationships, and in willingness and
ability to explore the unknown. The teacher with some practical
experience is more aware of the inadequacies of his basic training
and may concentrate on the important problems posed by the need to
improve the quality of education. On this issue, Kotasek (1975) in
the UNESCO Commission's report stated that the transition from
training provided once and for all the training in several phases
was an absolute necessity. He also emphasised, "this constant
training is more effective and more direct than the training
provided before the entry into the teaching profession".

From these discussions it is apparent that the teacher
who is in the professional field of teaching, should be possessed
with a large repertoire of strategies and tactics to meet the new
challenges on the knowledge explosion; be aware of recent develop-
ments in pedagogy and methodology; instructional skills and tactics;
and evolving needs of the society, the school, the teacher and the
pupil. Hence, continuous training is necessary for up-dating his
knowledge and skill to maximise the efficiency in classroom teaching,
developing and refining the behavioural patterns, and to keep himself
consistent with the modern trends in the society and the state.

The ultimate goal of teacher education programme is to
prepare the teachers who are effective in bringing about the
desirable behavioural changes in pupils. How far have they been
successful in achieving this goal ? The above question has been
bothering the educationists, teacher educators, researchers,
teachers and others who are involved in improving the standard of
the education.

Various education commissions and committees have pointed
out a number of drawbacks in the present day teacher education
programmes (University Education Commission,1949; Secondary Education
Commission,1953; Education Commission,1966; Jame's Committee, U.K.,
1972; UNESCO Commission, 1972 & 1975; Commission on Teacher Education
U.S.A.,1961). From the observations made by a number of studies
both in India and abroad on the teacher education programme (all the
commissions and committees, as stated; Palsane and Ghanchi,1967;
Joseph,1967; Flanders,1967; Sharma,1968; Popham and Baker,1968;

Cope, 1969; Marr, et al. 1969; Joyce,1969; Borg, et al.1970; Khosla,1970; Srivastava,1970; Smith,1971; Saikia,1971; Fritzell, 1972; Peterson,1973; Mehrotra,1974; Buch and Yadav,1974 and many others) the following major conclusions were drawn :

(i)   There was no consensus regarding procedures followed in various aspects of teachers' training;

(ii)   the teacher educators were not clear about the objectives of training which can guide in providing learning experiences to the trainees and in evaluating how far they have been achieved;

(iii)   there was no common frame of reference with which supervisors made their objective observations; there was no provision of effective and adequate models for follow up or setting the standards, dynamic feedback for achieving those standards; regarding the teaching methods concerned, there was no relationship between what the teacher educators follow and what they preach the trainees to follow; and it was generally in terms of teaching process and not in terms of effects;

(iv)   the practice teaching was silent about the main ingredients of teaching competence, the encountered teacher behaviour, and specifically the instructional skills which influence the overall learning of the pupils;

(v)   Practice teaching is now in the process of being replaced, or seriously modified, not because it has been conclusively shown to be ineffective (no adequate research reports for ineffectiveness) but because more promising modes of teacher training have now become possible;

(vi)   teaching theory was regarded as a single whole. There was no stable and consistent criterion of teacher effectiveness paradigm and teaching process paradigm. Niether of them identified the features of teacher's teaching which led directly or even indirectly to evaluate the outcomes. The instability might be due to one or more of the following — systematic and/or random changes in teaching behaviour, difference in teaching from one situation to another, pupils taught from one time to next, and finally, limit-ations in measurement methods (Gage,1972; Rosenshine,1971; Nielson,1973; Berliner and Ward,1974; Shavelson and Russo, 1977).

From these observations the importance of in-service education particularly the training of teachers in classroom teaching is apparent. Preservice training only prepares an individual for the job in hand, and provides the back-ground and technical ability to start his work, but for subsequent developments in-service training is necessary. Harris, et al. (1969) gave some reasons on this issue along with evidences on the importance of in-service teachers' education : (i) Preservice preparation of professional staff members is rarely ideal and may be primarily an introduction to professional preparation rather than professional preparation as such, (ii) Social and educational change makes the current professional practices obsolete or relatively ineffective in a very short period of time. This applies to methods and techniques, tools and substantive knowledge itself, (iii) Coordination and articulation of instructional practices require changes in people, (iv) Morale can be stimulated and maintained through in-service education, and is a contribution to instruction itself.

The need of in-service education particularly the training to the existing school teachers for desirable behavioural patterns has been felt for achieving two major objectives.

> One is to keep the teachers abreast of new knowledges, pedagogic reforms and other developments; and initiate them into new methods and techniques.

> The second one is to meet the inadequacies in the existing teachers' training programmes in the context of practice teaching for the development of teaching competence, desirable teacher behaviour, and effective classroom interaction.

Harris, et al. (1969) stated, "the in-service education programme is not only a tool of progress; it is also a symbol of faith in the improbability of the individual".

1.2.   ANALYTICAL APPROACH AND TRAINING
         OF IN-SERVICE TEACHERS :

In order to meet these objectives and considering the need of in-service programme various Commissions have made recommendations for providing retraining and advanced training courses to the teaching personnel already at work.

For reshaping the existing teachers' behavioural patterns and equiping the teacher with a large repertoire of instructional strategies, a number of techniques have been evolved. These are : computor assisted instruction, competency-based teacher education, microteaching, simulation and games, programmed instruction, interaction analysis system and group dynamics. The teacher will be competent enough in acquiring certain instructional skills, tactics, and in selecting, preparing, utilising and evaluating the different media, methods and materials through the above techniques. Definitely these trends either in knowledge at course-content, pedagogy or of modern techniques will affect the teacher behaviour which will further influence the learning of the pupil. So the teaching-learning process will be affected in such a way that the teacher behaviour and pupil behaviour are shaped and refined achieving the overall objectives of education.

Teaching is an interactive process generated from
teacher's and pupils' behaviour in terms of reciprocal contacts.
If we can identify, discriminate and distinguish effective and
ineffective patterns of teacher beahviour, we can plan effective
programmes to change and modify the teacher behaviour in desired
direction. The teacher selects the content, classifies the objectives
and states them as observable student behaviours that can be
measured. Then he takes decisions concerning how he will instruct.
He selects and implements the methods, tactics to facilitate his
pupils' learning. He wants to influence the behaviour of pupils
in a desired manner. When the teacher is engaged in the act of
instruction, his intentions become actions. But how far are his
intentions of equal consistency with his actions during class
teaching ? How far have the behaviour of the teacher modified the
behaviour of the pupil ?

Recently relatively discrete component activities have
been identified in the continuous flow of the teacher's performance.
These component activities or the sets of related teaching acts or
behaviours performed which are called the teaching skills
facilitate the training of teachers and pupils' learning. In
minimising the complexities in teaching each skill is made the
focus of concern, so that it becomes easier to derive objectives
and reliable measures of changes in teacher behaviour. The teacher
uses a number of teaching skills during his classteaching. He asks
questions, explains, illustrates with some examples, varies
stimulii, reinforces the pupils, evaluates the present teaching
in terms of pupil learning, and so on. But, how far these skills

are to be used effectively ? Whether the questions put to the
pupils are well-structured, based on higher mental processes and
instructional objectives, properly put to evaluate the pupils'
achievement. Whether the teacher properly handles the pupils
having no response, poorly organised response, a highly focussed
response. What kind of techniques should the teacher use in
increasing critical awareness,the redirection, the level and
amount of pupil participation, in improving pupils' initial
response and in eliminating the habits which disrupt the flow of
discussion ? These are all the elements of various questioning
skills to be practised by the teacher for achieving the intented
behaviour. Similarly in which way does the teacher explain the
ideas, concepts, phenomenon with appropriate examples ? How far
does the teacher organise his ideas logically with relevant matters,
continuity in statements and appropriate vocabulary ? These
behaviours can be refined by the teachers if they acquire the
explaining skills. To draw and sustain attention and to increase
the pupil participation during classroom teaching the teacher
changes the various stimulii about his movement, gestures, speech
patterns, interaction style, oral and visual switching. Similarly
other teaching skills like : illustrating with examples, silence
and non-verbal cues, recognising attending behaviours, increasing
pupil participation and some more are also used during teaching-
learning process.

Though behaviour is a continuous activity, as stated
by Joyce and Weil (1972), its break down into identifiable units
to facilitate analysis is necessarily somewhat artificial, but is
useful, especially when simple responses must be built into more

complex ones. Brown (1975) considered teaching as a manysided
activity which includes a host of activities like questioning,
giving informations, listening, participating in discussions,
and such others. The intention behind such activities of teaching
is to bring about learning. A set of related teaching acts or
behaviours performed with an intention to facilitate pupils'
learning can be called a teaching skill. The Asian Institute of
Teacher Educators (1972) defined the term 'technical skills of
teaching' as specifically those activities of teaching that are
especially effective in bringing about the desired change in
pupils. They are related to each other, that is, the attainment
of a particular objective is unlikely to depend upon teacher's
displaying of single category of behaviour. McIntyre, et al.(1977)
defined the term 'technical skill' as a set of related types of
teaching behaviour which in specified types of classroom interaction
situations tend to facilitate the achievement of specified types
of educational objectives. Analysing teaching into specific skills
reduces the complexities of teaching and gives direct practical
guidance to the teacher about the behaviour desired. It also
provides reliable criteria by which mastery of the skills can be
assessed, and makes possible research which investigates the
relationships between teaching skills and students' behaviour, as
shown by Perrott, et al. (1975).

The advantages of this skill-based analytical approach
in teaching are five fold :

(1)   It is much easier for the teacher to incorporate a
        behaviourally defined, technical skill into classroom
        behaviour.

(ii)   Use of behaviourally defined skills make the classroom transaction much easier in deriving objectives, reliable measures of changes in teacher behaviour and subsequent effect on pupil behaviour.

(iii)   The stable and consistent criteria of teacher effectiveness in relation to teaching process paradigm have been identified in micro-criterion approach i.e. in terms of specific teaching skills.

(iv)   To the experienced teachers who may have reached a performance plateau in their careers and achieved a point of saturation in teaching competence, these teaching skills may be acting as stimulii for further increase in their teaching competence.

(v)   Finally, researchers can conduct more meaningful investigations of relationship between the teacher performance and pupil learning.

The component-skills approach emphasises the acquisition of one skill at a time which can be understood operationally in terms of behaviour and evaluated in the light of behaviour and controlled contextually. The skill gained through this process becomes a teaching tool to be rationally applied. When the teacher controls over several teaching skills and knows the effects, the next step is to apply these skills to achieve his instructional aims. For him the teaching act involves decisions about when and where to apply his skills.

Among the distinguishing characteristics of teacher competence the instructional skills are the essential ingredients and a number of them have been identified and developed so far for the best development of teacher behaviour and teaching competence. The teacher can extend his professional competency on acquiring various teaching skills either for refining the old ones or

developing the new and untried ones. But it is observed that less
emphasis is given on the skill acquisition, for achieving desired
behavioural pattern, and teaching competence during the existing
teachers' training practices either in preservice or in in-service
programme. When growing dissatisfaction among the teachers, teacher
educators and researchers regarding the existing practice teaching
arose; and when the need felt on the immediate change of curriculum,
evaluating the instructional processes, possessing new techniques
and instructional skills to meet the new challenges, they thought
seriously to develop the ways and means for developing these
analytical aspects through various techniques. Of these, micro-
teaching technique is most popular, widely used and researched, and
also a system of controlled practice technique concentrating on
specific teaching behaviour. It not only has wide application, but
also is based on sound principles of training. There are research
evidences in support of its effectiveness in developing teaching
skills as compared to the other approaches.

Initially this skill-based microteaching was first
developed at Stanford University as a part of an experimental
programme for preservice teachers to improve their qualities
during teaching-learning process. Subsequently this technique
was also used for the improvement of teaching competence of the
existing teachers. The component-skills approach forces the school
or the teacher training institution to define the teaching skills
it considers important for developing the teaching competence and
thereby modify the behavioural pattern of the teacher. Moreover,

microteaching has also other advantages for the in-service teachers.
Before proceeding to class teaching the teachers can try the new
curricula and modern techniques through microteaching approach. It
can be a 'catalytic element' for bringing teachers together to
discuss the professional issues. The primary aim of supervision is
the improvement of instruction and microteaching has opened up a new
approach to supervision. Within the school, different teachers may
decide to use microteaching for different purposes. Some may use it
for developing the teaching skills, others may wish to use for
curriculum development and so on. Allen and Ryan (1969) stated
emphatically, "microteaching's greatest potential is in in-service
teacher education".

To meet these new challenges; to overcome the inadequacies of
preservice training; and to give a much more formal attention to the
problems of teachers, their classroom transactions in teaching -
learning processes, in developing and extending their competence and
refining their behavioural patterns Howey (1976) indicated three
dominant approaches for effective in-service education programme.
The approaches are 'Job-embedded' or 'On-site Activity','Teachers'
Centres', and 'Cooperative training Complex'. The on-site activity
approach embraces those learning activities in which a teacher can
engage himself during his normal work in his own campus. These
activities may be self-observation through cybernetic approach,
focussed experimentation with a new teaching technique or curriculum
design either with simulated or real conditions in microteaching.
Through the second approach team teacher roles need to be
developed. It facilitates joint teacher diagnosis and planning,
systematic collegial observation of teaching, feedback, modelling
of specific teaching skills etc. The essence of this type of

in-service training is professionals working closely together
who bring the differentiated abilities to bear on common problems.
The third major approach is an ideal vehicle as per Howey's
statement because of establishing exchanges of personnel between
systems in terms of both short and long term 'residencies'. In
training complex or school complex the experienced teachers are
not only able to pursue their own education and techniques but
again contribute to both the pre and in-service training endeavours
of others. Edelfelt (1977) gave a four-phased programme of in-service
teachers but not the detailed activities as hinted by Howey. In
his programme of planning, designing, implementing, and reaching
closure he emphasised the basic objectives of retraining of the
in-service teachers and to achieve these, the phasewise cycle will
be continued till the desired pattern has to be achieved.

The in-service programme of teachers is an on-going,
flexible, needs-responsive, emerging programme to improve each
teacher's job competency. The training programme itself must be
structured to provide many learning opportunities to mature adults
to assure that they learn ideas, techniques, skills and tactics,
attitudes and patterns, and to produce materials which are
immediately usable in practice and subsequent classteaching.
Winterton (1977) has emphatically stated "........it becomes
clear that improved in-service, not preservice, will be the
direction of the future for improving teaching competencies",

1.3.   MICROTEACHING : MEANING & UNDERLYING PRINCIPLES

The technique of microteaching was first developed at
Stanford University in 1960 (although named as 'microteaching'
in 1963) as part of an experimental programme to improve the
quality of teacher training. Though it was initially designed
to provide teacher trainees with practice in teaching before they
entered the schools but subsequently the merit of the idea has
been positively demonstrated within the context of in-service
training, curriculum development, guidance and counselling purposes,
and educational research. Even from the Encyclopedia of Education
(1972) it is seen that the implications of microteaching range far
beyond these applications.

Microteaching is a training concept that can be applied
at various preservice and in-service stages in the professional
development of teachers on a scaled down procedure in terms of
class size, subject content, teaching time and teaching skill. Much
of the complex act of teaching can be broken down into simple,
more easily trainable skills and techniques through micro-teaching.
The teaching time reduced to five to ten minutes, the scope of the
lesson is narrowed to a very small unit or concept, the emphasis
is on a particular teaching skill, and the class size is reduced
to 5 to 10 students. During microteaching the teacher is
concentrated on a specific teaching skill, with a predecided model
in his mind. He is given feedback treatment in a particular way :
through supervisor, peers, pupils, the teacher's own reflections
or/and playback of audio/videotape. This immediate feedback after
teaching helps the teacher to view his performance as regards the

extent to which he has achieved the set standard. Further he
replans and reteaches to the same or different group of students
in the light of the feedback received. This cycle is to continue
till the teacher acquires competency in that particular teaching
skill.

Cope (1971), in her survey of school experience, ended
with the remark that the acquisition by a teacher of specific
skills and techniques instead of being diffused through a block
practice might be accelerated by providing a different kind of
practice experience. This experience was microteaching, as stated
by Brown (1975), which controled the complexity of teaching and
which was shown to be more efficient than school experience as per
traditional pattern in changing teacher behaviours.

Allen and Ryan (1969) have given the following advantages
of microteaching : (i) microteaching is real teaching which
lessens the complexities of normal classroom teaching; (ii) micro-
teaching focusses on training for the accomplishment of special
tasks such as teaching skill practice, practice of techniques of
teaching, mastery of certain curricular materials or the
demonstration of teaching methods; (iii) it allows for the increased
controlled practice; and (iv) normal knowledge of results or
feedback dimension in teaching is greatly expanded.

Microteaching can help teachers under training in atleast
five ways with certain exceptions (Shore, 1972). First, it views
teaching skills which can be learned individually. Second, it is
supported by a specific and growing research literature. In addition,

microteaching itself is a useful research tool. Third, learning and teaching involve very complex events and microteaching is one technique which facilitates their study by providing simplified situations. It is also flexible and can be altered to suit many circumstances. It can be used in internship or in in-service traing to strengthen particular skills. Fourth, microteaching is not dependent on any particular facilities, like use of gadgets. Finally, microteaching focusses on teaching behaviour. "This is the heart of the question of studying teaching", as per the view of Shore.
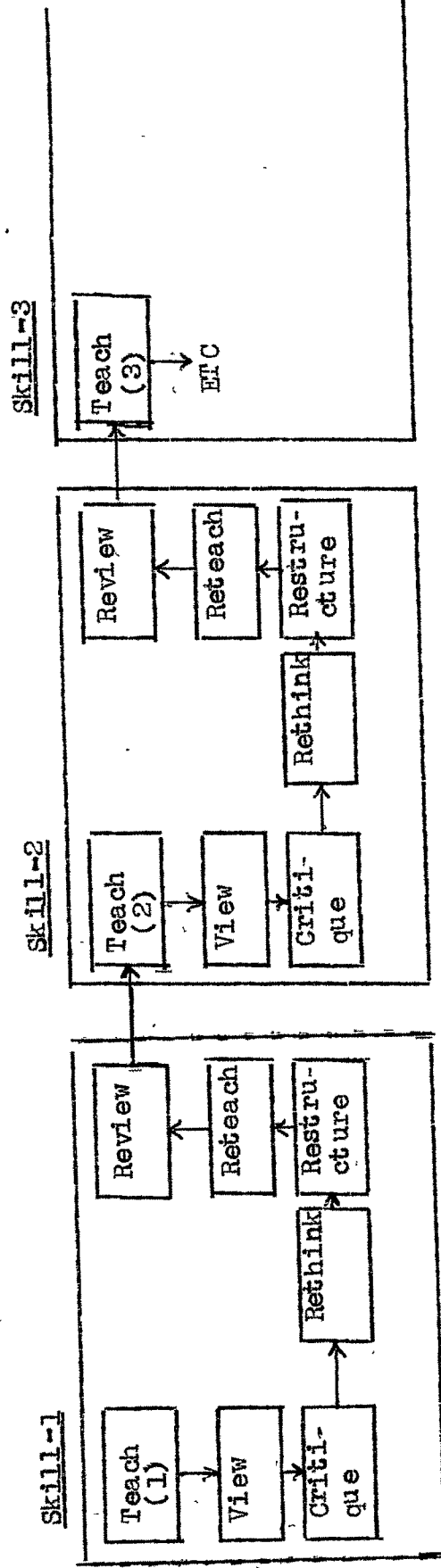
The main function of microteaching is to practise the instructional skills in a miniaturised classroom teaching situation. The original microteaching cycle was developed at Stanford with the following sequences : plan, teach, observe (critique), replan, reteach, reobserve (re-critique). There are now many variations to the original Stanford model. The model used at the University of Ulster has ;'plan, teach and observe' emphasising on planning, performance and perception, (Brown, 1975) lacking immediate 'reteach'. On the same line of approach as immediate reteach was not necessary for the acquisition of skills, as stated by Borg and his associates (1970), in their Minicourse Instructional model. Though it was basically meant for the preservice teachers' training, the same approach of microteaching with some deviations was also used for in-service teacher training. There were nine sequential steps : reading the handbook, viewing the instructional film, viewing the model and lesson planning were on the first day of

practice; microteaching lesson and viewing the replay of his own microlesson from videotape for self-feedback were on the second day and during the third day the teacher replaned the same lesson, reteached and viewed the reteach from the videotape. Perrott (1977) referred to five steps in the instructional model of a self-instructional microteaching course : 'Study Skills, Observe Skills, Practise Skills, Evaluate Use of Skills, and Refine Skills' in a cyclic way. The overall aim of the course were to produce measurable improvements in questioning skills, encourage self-diagnosis of teaching abilities, and deficiencies, reduce teacher talk and increase pupil participation, and provide for individual instruction on a cost-effective basis.

To reconcile the above differences on the immediate or deferred reteach sessions McAleese and Unwin (1971) developed linear and branching programmes in microteaching (Figure1.1 &1.2) which illustrate possible variation on Stanford pattern. Affinities with programmed learning may be noted. In the linear programme reliance is placed mainly on the critique and review sessions to ensure that a teacher under training has successfully assimilated a particular teaching skill, whereas the remedial sequences are built into the branching programme so that a teacher under training must be competent in each individual skill in micro-teaching setting before proceeding to the next. But very recently Clift, et al.(1976) have involved in microteaching procedure into three phases : knowledge acquisition, skill acquisition, and transfer phase to achieve the competence in skill training; and there after integrating and transfering those skills on subsequent
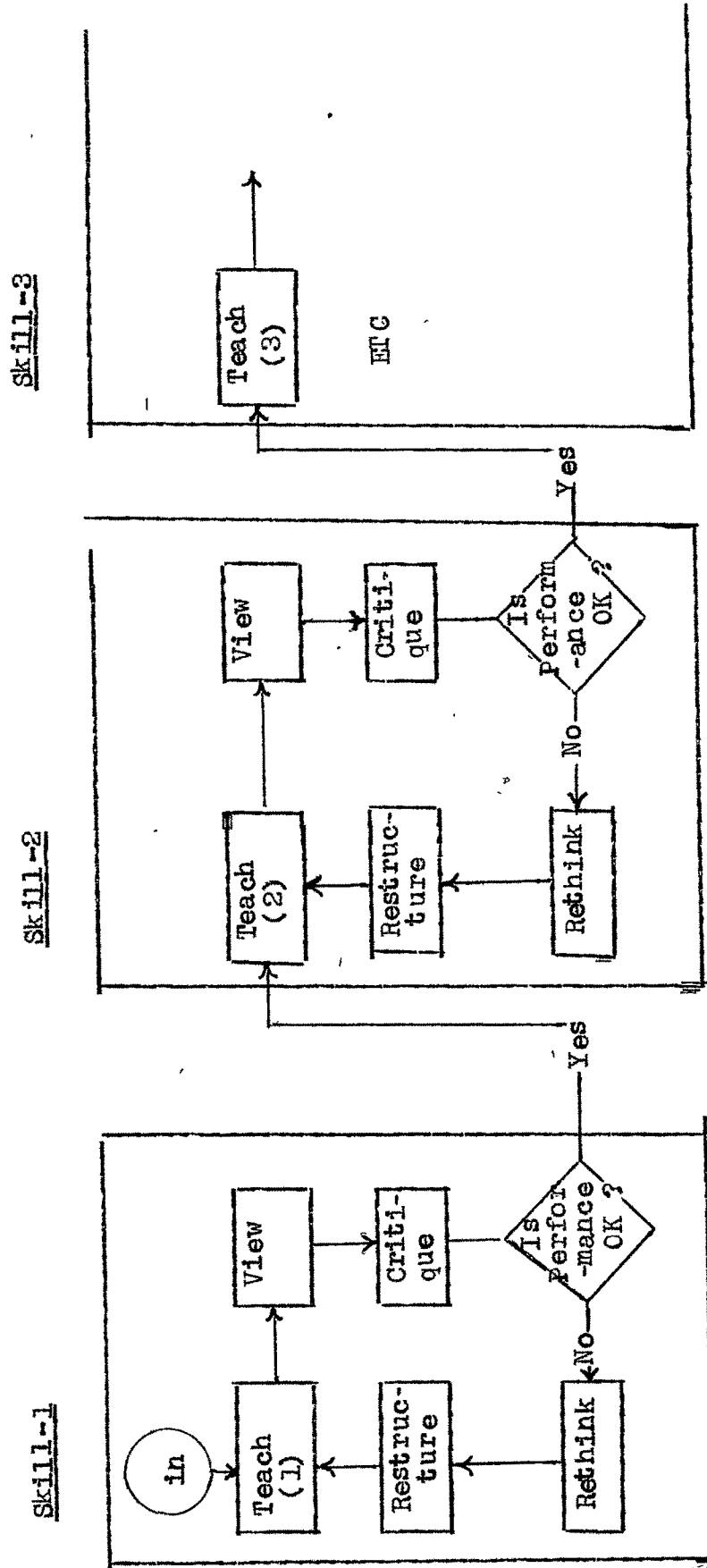
FIGURE : 1.1 :   Microteaching Cycle : Linear Programme

Skill-1

| Teach (1) | → | View | → | Criti- que |

Criti- que → Rethink → Restru- cture

Restru- cture → Reteach → Review

Skill-2

| Teach (2) | → | View | → | Criti- que |

Criti- que → Rethink → Restru- cture

Restru- cture → Reteach → Review

Skill-3

| Teach (3) |

ETC

(By courtesy of McAleese and Unwin, 1971).

FIGURE : 1.2 :   Microteaching Cycle :   Branching Programme

Skill-1

Skill-2

Skill-3

(By Courtesy of McAleese and Unwin, 1971)

classroom performances in normal situation. Their additional
sequence 'transfer phase' is a new line of approach for the
teachers under training to know the skills of integration of
various instructional skills in normal classroom situation.

Various principles underlying microteaching are given
below.

From its inception, microteaching was closely associated
with two fundamental elements of behavioural learning theory :
programmed instruction and task analysis (Spelman and Brooks,1972).
From the discussions of the linear and branching programme of
McAleese and Unwin, the affinities with programmed learning may
be noted. The microteaching technique involves the theory of task
analysis which is the process by which skills unrelated to
performance efficiency are eliminated and 'criterion behaviours'
which optimise efficiency are identified. The 'component skills'
practised in microteaching are seen as the criterion behaviours
of the teaching task. Underlying the structure of microteaching,
therefore, as stated by Spelman and Brooks, is the behaviourist
premise that complex skills can be learned by means of the
'fractionation' approach. In their statement, "it is assumed that
effective teaching act is a 'skill' an agglomerate of behaviours
composed of individual and identifiable subcomponents".

The pattern generally followed in microteaching
technique : teach ⟶ critique ⟶ reteach, is the
Skinnerian theory of 'Shaping' or 'Successive approximations'

in acquiring new pattern of behaviour.

Considering the Skinnerian terminology, "if an operant response occurs and is followed by reinforcement, the probability of its recurring increases. With non-reinforcement the tendency of the operant response to recur decreases, and thus becomes extinct" (Bartley, 1970). This principle is fundamental to the feedback mechanism within microteaching. The behaviourist theory is in accordance with Skinnerian theory of operant conditioning. Reinforcement must immediately follow a response if it is to be effective and that is why immediate and positive feedback is an important ingredient of microteaching cycle. As per the views of Perlberg, et al.(1974) the feedback provides the trainee with information regarding his behaviour enabling him to design behavioural changes and it facilitates the process of self-confrontation by triggering a cognitive dissonance which stimulates the psychological climate conducive to change.

Microteaching technique has the same principle as that of cybernetics (Ray,1978). The central theme of cybernetics is one of the presence of feedback control of activities through 'self-regulation' to achieve desired objectives. In other words any deviation of the actual system behaviour from the desired one is a signal to actuate the system in such a way that this deviation diminishes to an acceptable limit. The actual system behaviour is sensed, processed and feedback in comparison with the intended behaviour. The resulting error is then used to trigger decisions so as to bring the actual system behaviour in tune with the

desired behaviour. The Figure 1-3 depicts the structure of such

a cybernetic system. Through perceptual and symbolic modelling

the desired behaviourable pattern has been set up and then the

teacher is under practice through microteaching cycle. The

provision of dynamic feedback through teacher's perception helps

to differentiate the actual skill development with that of modelled

pattern. The microteaching cyle is to be continued till the actual

developed behaviour reaches the desired pattern. Thus the novel

elements of the cybernetic approach in microteaching helps to

develop the refined behavioural patterns of the teacher.

FIGURE :1-3 : The Structure of a Cybernetic System
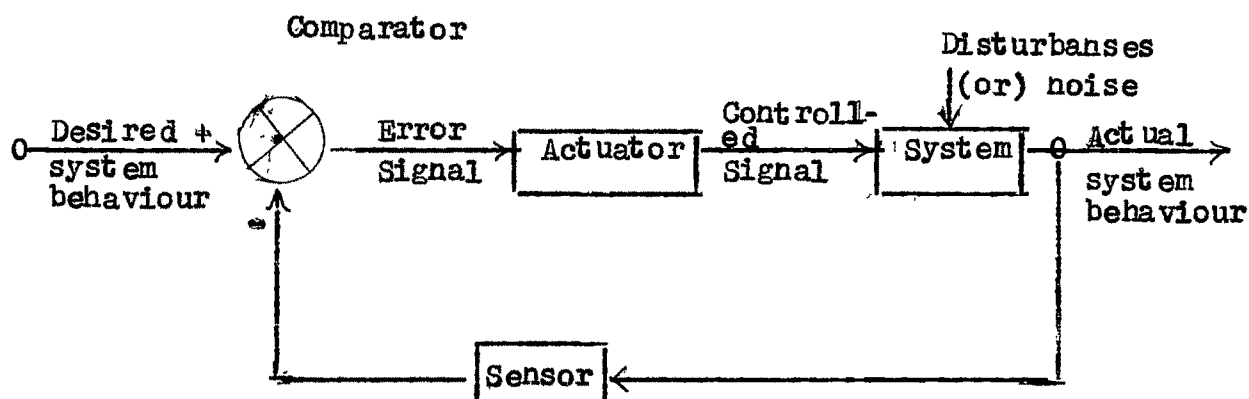
The microteaching approach to the problem of teacher

effectiveness may be said to be based upon the Skinnerian premise.

If detailed sequences of sub-behaviours for teaching can be

accomplished, certain technical skills evaluated, it is logical

to assume that teachers can analyse these behaviours and incorporate

them into their teaching repertoire (Bell, 1970). The problem of

teacher effectiveness is thus seen as a behavioural problem, and as one amenable to operational analysis within the controlled environment of microteaching technique.

1.4. RELATED STUDIES ON MICROTEACHING :

As a technique of teacher training, particularly for in-service programme, microteaching is in its infancy, and many issues related to its most effective use even in preservice stage have not as yet been resolved. Even then most of the studies conducted in this area show that it is feasible and an effective technique in the modification of teacher behaviour.

The studies in microteaching relevant to the present study may be classified under the following headings :(i) studies related to the effectiveness of microteaching in comparison with the traditional practice teaching and other techniques in developing the teaching competence, (ii) studies related to the effect of varying sources of feedback within microteaching setting on the development of general teaching competence, (iii) studies related to the effect of specific teaching skills on subsequent classroom performances, and (iv) studies related to teachers' attitudes towards teaching after skill acquisition. The classification of studies on microteaching was arbitrary, it was difficult to separate the studies related to one aspect from those related to other aspects. However, an attempt was made to review the related studies regarding the above aspects. Though this present study was undertaken on in-service teachers' training

programme, the reviews of research studies were made on
in-service as well as on preservice training.

1.4.1.   Effectiveness of Microteaching :

One of the earliest evaluations of microteaching was
carried out at Stanford University in 1963 (Allen and Clark,1967).
The results were clear and 'encouraging'. Students trained in the
microteaching clinic made discernible improvement in the skills
practised and were judged to display greater teaching competence
than their colleagues who were in conventional training approach.
In another study at Stanford in the same year on the effectiveness
of first microteaching clinic (Bush,1968), the findings revealed
that microteaching group demonstrated higher level of teaching
competence than the traditional practice teaching group, and the
performance of student teachers in microteaching situation was
an effective predictor of their subsequent classroom performance.
A study was carried out by Bell (1968) experimenting with micro-
teaching in home economics education at Texas Technical University.
The prime purpose of her study was to determine the effect of
training upon specific training skills of student teachers. Some
of her conclusions were reported : (i) the programme was
relatively more effective in teacher preparation than the usual
form of training, (ii) self-evaluation of student teachers was
more effective in the case of microteaching than traditional
student teaching. Young and Young (1968) attempted to test the
effects of microteaching on classroom performances and found that
participants in microteaching or experience acquired a greater

number of selected teaching behaviours and alternate teaching patterns than those who did not participate in such an experience. Gilliom (1969) in his study used peer evaluations and self-evaluations, and found significant differences between micro-teaching and non-microteaching groups. He reported that microteaching group received higher scores in both the evaluations than the non-microteaching group. In the same year of 1969 a study was carried out by Kallenbach on microteaching with videotape and block teaching practice in the Far West Laboratory. The criterion in his study was independent observer ratings on Stanford Teacher Competence Appraisal Guide for the performances of trainees by microteaching to one group and by block practice method in normal classroom to other group. The results indicate that microteaching was a more efficient technique than the block practice training procedure. A further study using some what different criteria but involving control Vs. experimental design was carried out by Goodkind (1968). He found that the experimental group of teachers displayed : greater awareness and use of specific teaching acts and techniques, greater insight into the activity and inter-relationship of children within the classroom, and greater awareness of the problem of structuring and pacing in their teaching. Experience in other teacher education programmes has, by and large, confirmed the Stanford findings. Ward (1970) conducted a survey of microteaching being used in secondary-education programmes in the United States and the general impression seems to be that the teaching competence of both students and staff, and their attitudes towards education improved through microteaching

approach. Schuck (1971) reviewed also preservice microteaching
programme in a number of American Institutions. He reported that
the student receiving microteaching showed a significant
improvement in teaching competence when compared to that of
conventional approach. It had also been studied by Berliner, 1969;
Borg, et al. 1970; Wragg, 1971; Brown, 1969; Wyckoff, 1973; and
Olmo, 1973 that microteaching technique was effective in changing
the teacher behaviours in the classroom. Allen (1973) reported
a study comparing microteaching and traditional methods of training
for improving performance of a manipulative demonstration in
industrial education. There was an evidence of an overall signifi-
cant difference in favour of microteaching group as compared to
the traditional method group. Several experiments were conducted
by Saunders, et al.(1975) to evaluate alternative methods for
training preservice teachers in questioning skills. Four groups
of preservice teachers of Utah State University were selected
randomly. One group was designated the microteaching group following
the minicourse format; the second, third and fourth groups were
of peer microteaching, conventional pattern of having classroom
observation and traditional lecture-discussion respectively during
their training periods. Comparisons of pre-and post testing
videotapes of teaching performances revealed that regular and peer
microteaching produced the most consistent and substantial gains
in use of questioning skills. The observation and traditional
lecture-discussion treatments were less effective.

In India, most of the studies conducted in this area as
a training technique show that it is feasible and an effective
technique in the modification of teacher behaviour. Chudasama (1971)
found that microteaching was more effective than the traditional
technique in the development of student teachers' indirect
behaviour. Marker (1972) found that microteaching was a better
technique than conventional approach in the development of certain
teaching skills on set induction, *stimulus* variation, questioning,
reinforcement and closure. The sample was from student teachers
who offered geography method of teaching. Microteaching was found to
be effective than the conventional approach to teaching. Passi and
Shah (1974) found that microteaching experiment both in simulated
as well as in real conditions was a success as far as the evaluation
of supervisors and the microteachers were concerned. Moreover this
study revealed that microteaching was feasible in student teaching
programmes on account of its inherent academic worth and its
economical efficiency. Singh (1974) compared the effectiveness of
microteaching technique, Flanders' Interaction Analysis System with
verbal teacher behaviour and traditional method of teachers'
training. The results indicated that the student teachers trained
through microteaching changed their verbal behaviour in the
classroom significantly better than those trained through the
FIACS technique and also those trained in traditional way.
Vaze (1975) revealed that the microteaching was a more effective
technique for the training of student teachers than the
traditional approach to teaching. Sharma (1976) also found
that the teaching competence of student teacher trained

through microteaching was higher than the group receiving
training through conventional approach. Passi (1976) and Joshi
(1977) in their studies found that the development of general
teaching competence of the student teachers who practised through
microteaching under simulated conditions was more significant
than the student teachers of traditional training method. In
comparison with the traditional practices, they also reported that,
microteaching in simulated condition was more effective on the
development of certain teaching skills. Lalithamma (1976)
investigated also on the same line of approach on the development
of certain teaching skills during her research study and found
the same conclusions.

Although the studies reviewed above were encouraging
regarding the effectiveness of microteaching, even then the
Department of Teacher Education, NCERT in collaboration with
CASE, Baroda; Department of Education, Indore;and thirty one
colleges/University Departments of Education had undertaken a
large scale experimental field study for arriving a conclusion
on the feasibility of microteaching in teachers' training
institutions in India and its effectiveness over traditional
approach. The main finding of this study was that the student
teachers trained through microteaching or in modified form
acquired higher teaching competence than the traditional teachers'
training technique (Das, et al. 1976 and 1977). Under this project
a number of research studies were designed and carried out on
different variables in micro-setting in several institutions all
over India.

The above studies were on the effectiveness of micro-teaching on the development of teaching competence of student teachers (preservice teachers) during practice teaching before entering the teaching profession. The studies on the effect of microteaching over various other techniques of teacher-training for the in-service teachers are reported in the following.

Galassi, et al.(1974) in a study on the use of written Vs. videotape instruction to train the in-service teachers in questioning skills referred that out of other findings teachers who participated in Minicourse-9, regardless of course version or grade level taught, learned to ask higher percentage of thought-questions in class discussions than the teachers who did not participate in the course. They also found that the frequency of higher cognitive responses and long responses in pupil behaviour was higher in case of the experimental treatments than the control one. Wyckoff (1973) in a study on the effect of stimulus variation on learning from lecture, inferred that microteaching group was superior to the control one. In 1971, the Moray House Centre for Education Overseas launched a pilot microteaching programme to observe whether this technique could be useful on the Teaching of English as Second Language (TESL) courses. They took in-service teachers with some pupils from nearby schools and tried sixteen skills in the TESL Courses. They found a significant improvement of microteaching group over that of traditional treatment group. This was reported by Carver and Wallace (1975). Bhattacharya (1974) studied the relationship between the effectiveness of microteaching and the conventional practice of in-service teachers of polytechnic training centres. He reported that higher

significant changes in the indirect behaviour of trainees were produced by the group receiving microteaching treatment than by the control group. The teacher education programme of the Far West Laboratory for Educational Research and Development (Borg, et al. 1970) focussed a major research and development effort on developing and/or modifying specific classroom skills and behavioural patterns required for effective teaching. The instructional model developed for in-service training courses were called 'minicourses' which were the adaptation of the microteaching approach. Reducing the teacher talk and enhancing the pupil participation, increasing the teacher's use of probing questions, reducing the negative teacher behaviour and increasing the teacher's use of higher congnitive questions were the main contributions of practising the Mini course -I over the usual classroom teaching. There was considerable evidence that self-instructional microteaching materials considered for transfer brought about significant changes in the classroom skills of in-service teachers (Borg, 1969). Moreover, research and development work carried out in U.K. by Perrott and her associates (Perrott, 1977) had shown microteaching to be an effective tool in improving the teaching skills of in-service teachers and that self-evaluative instruments played a more important role than tutors in this improvement. From the studies of Borg and his associates in U.S.A., and Perrott and her colleagues in U.K. it was found that microteaching or the mini- course formats with self-evaluation proved to be highly effective with in-service teachers for the development of desired teacher

behaviour. Microteaching has been extensively and successfully used for in-service teachers' training scheme organised by the Governments of U.S.A., U.K., Netharland, Sweden and some othr countries.

The studies reviewed so far yielded results favourable to microteaching and established its supperiority over conventional practice teaching. Now some studies which reported microteaching as effective as conventional practice teaching and some others which reported microteaching inferior to conventional practice teaching are feviewed here.

Kallenbach and Gall (1969) reported in Far West Laboratory that the purpose of their study was to determine the effectiveness of elementary school interms trained through microteaching approach in relation to other interns trained through conventional approach. The findings were : the two groups did not differ significantly on any of the post-training measures of teacher effectiveness rather microteaching group was as effective as the other group having conventional approach, but the other findings stressed that microteaching was more economical in time and money. Microteaching was a superior training strategy since it achieved similar results in only one-fifth of the time required for traditional training programme. Copeland and Walter in 1973 conducted a study on the effect of laboratory skill training through microteaching on classroom performance of social studies student teachers. The study showed that the microteaching mode of laboratory skill

training did not have a significant effect on student teacher
performance in classroom on questioning skills. A study by
Wagner (1973) on a comparison of microteaching and cognitive
discrimination training revealed that the microteaching group
was not significantly more student-centred than the control group
having traditional approaches, rather the discrimination group
was significantly more student-centred than the microteaching or
control groups. The results strongly supported that without
appropriate discrimination training, microteaching practice was
ineffective. The experimental studies were carried out at the
Malmö School of Education in 1969 and 1970 (Bierschenk;1972) for
the purpose of studying the effects on the self-assessment of the
student teachers via CCTV and VR in microteaching and secondly,
dyadic confrontation processes in the form of traditional tutoring.
The results revealed that the experimental conditions produced no
effect i.e. did not have any difference in the ability of student
teachers to discriminate on the basis of student teachers'
self-assessment, neither externally mediated self-confrontation
nor dyadic confrontation led to significant effects but the
teaching situations in microteaching resulted in significant
effects concerning the ego dimensions.

In the light of the studies examined earlier, it was
observed that microteaching technique was used as an effective
tool for the training of the in-service teachers on the development
of general teaching competence and refining the existing teacher
behaviour. But in in-service programme the studies researched so far

were very few. Hence, the present study was taken up on the in-service programme with one of the purposes to determine relative effects of skill-based microteaching and integrated skill-based traditional practice teaching on the development of general teaching competence.

1.4.2.   Feedback in Microteaching :

This section is devoted to studies on the relative effectiveness of various feedback treatments in microteaching either on the development of teaching skills or on the development of general teaching competence.

Acheson (1964) in a study at Stanford University investigated the effects of videotape feedback and different kinds of supervisory treatments on direct, indirect and no supervisory conference. Analysis of data showed that neither direct nor indirect supervision produced significantly greater changes than no supervisory conference. The study also revealed that video-recording as a feedback method combined with tutoring was useful instrument for student teachers to analyse themselves and to change their behaviour in teaching situation. In the same year i.e. in 1964, Olivero considering various methods of providing feedback in microteaching indicated that trainees benefited more from some kinds of feedback than from self-analysis; video plus verbal feedback was more effective than verbal feedback alone, and University supervisors were more effective than school supervisors in giving feedback. Again, Olivero in another experiment in 1970,found that trainees who had the opportunity to see themselves perform and to receive verbal feedback

from supervisors made greater changes in behaviour defined as
'understanding of aim' than those who received verbal feedback
only. McDonald and Allen (1966) also indicated the same finding
stating that self-feedback appeared to be least effective since
the viewing of trainees own tape was not adequately cued for the
desired response. Along with the above finding some important
findings were drawn : immediate feedback was related to initial
acquisition and delayed to retention of performance level, feed-
back on limited sets of related behaviours appeared to be superior
to a global or summary type feedback and adding cue discrimination
to the training either on the video sound track or through
supervisor substantially improved the training method.

Griffiths (1972) investigated the effects of self-
viewing accompanied by prompting by an experimentor. In another
study reported by him four groups were subjected to four feedback
treatments. The first study advocated self-viewing through video
tape with prompting by the supervisor and the second study reported
the effectiveness of discrimination training by supervisor with
videotape. In a programme of teaching skills Brown (1975)
demonstrated how basic skills of teaching can be identified and
improved by practising them in a small group of situation with
supervisory feedback. The trainees of Ulster and Stirling
Universities were firmly convinced of the need for supervision
(Brown and Gibles, 1974; McIntyre and Duthie,1971). McIntyre (1971)
in a study carried out at Stirling, compared the relative
effectiveness of three approaches to microteaching supervision :

individual conference with a tutor supervisor, groups of three students working with a tutor, and groups of three students working alone. The study revealed that the group having individual conference with a tutor supervisor during feedback session showed greater mastery of skills studied. Johnson and Knaupp (1970) concluded in their experiment on supervisors that students preparing for microteaching expected supervisors who were qualified to render technical assistance in planning, conducting, and evaluating their microteaching. Young (1970) compared the effect of the provision of a single supervisor with colleague supervisor teams. It was found that 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 students' responses'. Morse, et al. (1970) reported a study of the effects of four kinds of feedback : (a) no feedback from audio-tape or supervisor, (b) feedback from audio-tape only, (c) feedback from audio-tape and by listening to a guide, and (d) feedback from audio-tape, guide, and supervisory conference. One of the conclusions reached was that "the available evidence does not support the value of feedback in the absence of a personal supervisor". Tuckman and Oliver (1968) compared four kinds of feedback conditions : (a) pupil's feedback alone, (b) supervisor's feedback alone (c) both pupil's and supervisor's feedback and (d) no feedback. Results indicated that both treatments involving pupil's feedback i.e.(a) and (c) groups

produced significantly greater change than the other two
conditions. An interesting result was stated that pupil feedback
produced significantly greater change in teacher behaviour than
supervisory feedback, and that supervisory feedback alone also
produced a negative shift in teacher behaviour, away from the
direction suggested by supervisor. Levis, et al. (1973)
expressed that students had a strong preference for having self-
analysis supplemented by feedback from fellow students and
supervisors. Allen and Ryan (1969) admitted that videotape is
not an essential part of the microteaching process. Microteaching
has been adopted successfully in many places, without the use of
such equipment. They have also criticised strongly that "it is a
frill' that can substantially further the aims of microteaching".

The studies, above described, advocated the presence
of supervisor during feedback treatments, in other words,
supervisory feedback on acquisition of teaching skills through
microteaching was significantly effective on subsequent develop-
ment of teaching competence.

On relative effectiveness of modelling and feedback
McDonald and Allen (1967) compared the different combinations of
modelling and feedback procedures. Results suggested that
perceptual and symbolic modelling procedures proved more effective
than symbolic modelling treatment alone. Supervisory feedback in
relation to perceptual modelling, did not lead to significantly
greater increases in performance. The optimal combination was
that of the combined symbolic and perceptual modelling procedures

in the presentation phase plus prompting and confirmation feedback conditions. Videotapes were also effective when used to present models of teaching performance. Concerning the over all results of their three studies (first and second, on feedback, in 1967; and third, on relative effectiveness on modelling and feedback) the authors concluded that the power of videotape recordings to recreate the original teaching experience made the feedback phase of suervision more relevant and effective. In summarising the research on feedback, McKnight (1971) indicated that videotape recordings are a valuable adjunct to supervisory critiques. Claus (1969) investigated the effects of modelling and feedback treatments on the development of teacher's questioning skills. The independent variable was the presence or absence of cueing by the supervisor during the presentation of the model tape and/or during the replay of the trainees' own microlesson. Results indicated that the supervisor had a positive role to play in training with the videotape models during introductory phase. It also found (as stated by McKnight, 1971) that, with perceptual modelling, supervisory feedback did not lead to any greater increase in learning than did self-viewing of videotapes.

There were a number of studies where the results were not in favour of supervisory feedback. Sadker and Cooper (1972) cited a study of Harrington (1970) in which critiques by self, another fellow student, fellow instructor, and supervisor were judged to be equally effective in terms of improving teacher competence. 'Self-supervision' was being used in a number of

microteaching programmes, sometimes supplimented by supervisor
commentory. The minicourses of Far West Laboratory and its
adoption, as Self-Instructional Microteaching Courses adopted
self-analysis with videotape during feedback (Borg, et al. 1970).
The Self-Instructional Microteaching Course on 'Effective
Questioning' was a self-instructional course in which micro-
teaching was an integral part (Perrott, et al. 1974). One of the
overall aims of this course was to encourage self-diagnosis
through videotape of teaching abilities and deficiencies. In
circumstances where no video-recording equipment was available
the course was adaptable for use with audiotape to substitute
the videotape recrodings of the microlessons. In a number of
studies by Perrott (1974), Perrott, et al.(1975) they used mainly
videotape in self-diagnosis of microlessons. Supervisory feedback,
according to her, was usually general rather than specific. Videotape
provided complete and objective record of what had occurred, which
was available for analysis and the Microteaching Course emphasised
self-analysis using highly objective evaluation forms. Waimen and
Ramseyer (1970)'s study was on a continuum from no videotape feedback
to maximum videotape feedback of teacher behaviour. They found that
video tape feedback was highly effective and significant in
concentrating on one component task of teaching at a time. Legge
and Lois (1972), in their study, came to the result that micro-
teaching used in conjunction with videotape held great promise
for working with preservice teacher trainees. They stated that
self-appraisal by teachers in training was more meaningful in many
respects than appraisal by others.

In several other studies, audiotape feedback was in
fact found to be more effective than videotape feedback (i.e.
Shively, et al.,1970). In one study, Ward (1970) compared the
effectiveness of four kinds of feedback on the acquisition of
questioning skills. Four groups of in-service elementary school
teachers evaluated their performance by (i) self videotape,
(ii) self audiotape, (iii) a combination of self videotapes and
model videotapes and (iv) reflective evaluation without equipment.
The largest mean difference in the number of probing questions
asked by the teacher between pre and post test was found in the
audiotape group. Turney, et al. (1973) categorically stated
that feedback on the performance of predominantly verbal skills
might be very effectively mediated by audiotape, while feedback
of such skills as non-verbal cueing and variability (Stimulus
Variation) would obviously necessitate the use of videotape.

A limited number of studies was undertaken by
researchers in India on feedback treatments. The Department of
Teacher Education, NCERT; in collaboration with CASE, Baroda and
some teachers' training institutions and University education
departments took up a National Project on microteaching and its
feasibility. During the first phase of this study Paintal, Sharma,
et al.; and Sheth of different institutions carried out their
studies on different dimensions of feedback in the year 1975-76.
The studies of Sharma and Sheth revealed that supervisory feed-
back was as effective as the peer feedback. But Paintal's study
was seen that supervisory feedback was more effective than the

peer feedback. The above three studies were in simulated
conditions. During the following year, seven institutions were
participated in this national project taking studies on feedback
treatments. Five were on relative effectiveness of peer and
supervisory feedback; one on immediate vrs. delayed feedback;
and other one on peer student teacher and audiotape feedback.
None of the above studies found any significant change in the
general teaching competence scores of the student teachers due
to change in he varying sources of feedback. This revealed
that supervisory feedback was as effective as peer student teacher
feedback; delayed and immediate feedback affected equally in
changing the teacher behaviour; and the peer feedback was as
effective as audiotape feedback. Sharma (1976) in his doctoral
study on effects of different techniques of feedback upon the
attainment of teaching skills related to stimulus variation among
teachers found that the group having supervisory feedback in
microteaching was as effective as that the group treated with
peer feedback.

A research study conducted by ward (1970) on in-service
teachers which was already referred before advocated self-feedback
with audiotape for acquisition of questioning skills. Though, Borg
with his associates; and Perrott and her colleagues conducted so
many studies on minicourses; and self-instructional microteaching
course on effective questioning respectively taking in-service
teachers using self-feedback with videotape in microteaching, they
did not investigate the relative effectiveness of varying sources

of feedback. However, as the feedback is an important aspect of microteaching cycle, the present study investigated the relative effectiveness of various kinds of feedback treatments in developing the general teaching competence.

1.4.3.   Teaching Skills Studied Through Microteaching :

Operational definition of specific teaching skills are essential to microteaching. These teaching skills are derived from an analysis of the teaching process. Through microteaching the teaching skills have been developed for acquiring teaching competence and maintaining desired teacher behaviour. "Each skill has an observable and easily countable teacher response linked (with some exceptions) to a specified and also easily countable student behaviour", McDonald (1973). Microteaching is not intended to supply teachers with all the skills required for professional competence, but the most widely accepted lists supplied by School of Education of Stanford and Far West Laboratory have been studied extensively by researchers. A brief review of the studies related to the skills for the development of teaching competence through microteaching and of studies related to the effect of teaching skills on subsequent classroom performance follows.

Allen (1969) selected the skills of stimulus variation, closure, and silence and non-verbal cues for an experimental study. Bell (1970) in another experiment used the establishing set, reinforcement, questioning, closure and establishing a frame of reference for developing the teaching competence on those

particular skills. In both the studies they found significant
changes in the behaviour of student teachers. Allen (1973)
conducted an experiment by referring to the following skills-set
induction, developing main points, closure, using audio-visual
aids, varying the stimulus, higher order questioning, giving
directions, and reinforcement. His findings revealed that micro-
teaching was more effective than traditional teaching for
improving performance in skill training.

Copeland and Walter (1973) and Copeland (1975) using
questioning skills-higher order, probing and divergent questions
(exploratory student responses) studied the relationship between
microteaching and student teacher classroom performance. Micro-
teaching mode of laboratory skill training did not have a
significant effect on student teacher performance in classroom
in the former study whereas in the latter study the experimental
group exhibited a significantly higher occurance of target skills
than the control group.

Young and Young (1968), Raymond (1974), and Saunders,
et al.(1975) reported favourably the effect of the development of
teaching skills through microteaching on classroom performance
after training. Raymond in his study took the skills of non-verbal
cues and the use of silence whereas Saunders and his associates
had taken questioning skills as per the miniscourse format.

McIntyre, et al.(1977) in their study on the diagnostic assessment of students' microteaching behaviour, attempted to develop the systematic observation instruments for the skills of varying the stimulus, reacting, questioning for feedback, higher order questioning and probing, clarity of explanation, and use of examples. These instruments were used to record relevant aspects of teaching behaviour instead of rating scales.

The effectiveness of microteaching, in Indian Context, in the acquisition and development of various teaching skills by the preservice teachers during their microteaching practices were reported in the following studies : skill of developing indirect teacher behaviours by Chudasama (1972); skill of questioning, reinforcement, silence and non-verbal cues, illustrations and use of examples by Passi and Shah(1974); skills of fluency in questioning and probing questioning by Abraham (1974); skills of reinforcement, and silence and non-verbal cues by Joshi(1974); skills of divergent questions, convergent questions and probing questions by Vaze (1975); skills of stimulus variation, reinforcement, and silence and non-verbal cues by Sharma(1976); skills of introducing a lesson, achieving closure, fluency in questioning, probing questioning and reinforcement with the instructional materials prepared for these skills by Passi(1976); skills of increasing pupil participation, explaining, using blackboard, writing instructional objectives including the development of instructional material by Lalithamma(1976); and skills of stimulus variation,illustrating with examples, silence and non-verbal cues,and recognising attending behaviour with the development of instructional materials by Joshi(1977).

Passi, Lalithamma and Joshi in their studies in simulated conditions found that microteaching was more effective on the development of specific teaching skills and also on the development of general teaching competence than traditional practice teaching.

All these studies referred to above were from preservice setting and the following studies were undertaken with in-service teachers.

Galassi, et al. (1974) in their study took the minicourse format of questioning skills and found that those teachers who participated in Minicourse-9, learned to ask higher percentage of thought questions in class discussions and produced greater frequency of higher cognitive responses and long responses in student behaviour. Wyckoff (1973) in a study to findout the effect of stimulus variation on learning from lecture said that teacher mobility, gesturing and pausing while presenting a lecture affected pupil recall of factual information, pupil performance. Ashlock (1968) described one example of adapting microteaching to an off-campus science methods course for in-service elementary school teachers. He reported that they improved their classroom interaction by using questioning and listening behaviours. The teacher education programme of the Far West Laboratory for Educational Research and Development (Borg, et al. 1970) focussed a major research effort on developing and modifying specific classroom skills and behaviour patterns required for effective teaching. The instructional materials called minicourses dealt with questioning skills on

probing, divergent and convergent questions, higher cognitive
questions. Minicourse-I dealt with twelve specific skills for
the teachers to use with intermediate grade students, Minicourse-8
on organising the kindergarten for independent learning and small-
group instruction; Minicourse-9 on thought questions for
intermediate grades; and Minicourses-4 and 12 on verbal classroom
interaction and interaction analysis as a guide to classroom
change using FIAS. For developing a U.K. Programme on 'Effective
Questioning' which was a part of Lancashire Education Authority's
in-service training scheme for experienced teachers, Perrott and
her associates (1977) designed a course of 'self-instructional
microteaching course on effective questioning' to help the teacher
to improve twelve questioning skills on these objectives : to
encourage pupils' readiness to respond, to improve pupils' initial
responses, to increase the level and amount of pupil participation,
and to eliminate habits which disrupt the flow of discussion.
Teachers after completing this course, they reported, showed
significant improvement even above 0.01 level of significance
in these skills from pretest to post test measures and skills
learned in microteaching were transfered to the subsequent
classroom performances.

In Indian context only two studies were undertaken in
in-service setting. Bhattacharya (1974) used the skill of developing
indirect teacher behaviours through microteaching for acquisition
by the polytechnic teachers whereas Threlsiamma (1975) took the
skills of recognising attending behaviour, and teacher liveliness

for acquisition by school teachers. In both the studies they found significant improvements in the experimental groups over control group.

All the above mentioned studies revealed that micro-teaching was definitely an effective technique for the development of teaching skills both for preservice and in-service teachers and also these acquisition of teaching skills showed significant impact on subsequent classroom performance. From the studies reviewed so far it was revealed that not a single study was there on specific five teaching skills i.e. on probing questioning, explaining, illustrating with examples, stimulus variation and reinforcement for acquisition through microteaching in the in-service context. Moreover, no studies were reported on these skills practised through microteaching on the development of general teaching competence of secondary school teachers in comparison the skill oriented traditional practice teaching. Hence, another purpose of this study was to find out the effect of acquisition of specific five teaching skills on the ability to use them in macro-situations during classroom performances.

Most beginning teachers start their careers with a narrow array of teaching skills and techniques. The experienced and old teachers are probably in a stage of performance plateau early in their careers having less incentive to improve. For all of them in developing and extending the teaching competence and refining their behavioural patterns a number of teaching skills are required. Based mostly on the lists of teaching skills

developed at stanford University, the Far West Laboratory and
the list of teaching skills conceptualised at CASE, Baroda,
twenty one teaching skills have been identified as essential
for general teaching competence (Passi and Lalita, 1976).

For the purpose of this study these five skills :
probing questioning, explaining, illustrating with examples,
stimulus variation, and reinforcement for acquisition were
selected on consideration of which skill would be the most
important, useful, psychologically significant and immediately
necessary for the in-service teachers of secondary schools in
removing the deficiencies and refining their existing behavioural
pattern. It was not possible to take more than five skills due
to shortage available for the study.

The detailed literatures on each individual skill may
be referred to the edited volume of Passi (1976) "Becoming
Better Teacher : Microteaching Approach".

1.4.4.   Effect of Skill Acquisition on Teachers'
          Attitudes Towards Teaching :

The teacher's attitude towards teaching is an important
factor which may affect his effectiveness in teaching. Moreover,
the attitude towards teaching is a significant correlate of
indirect teacher behaviour, student liking, various measures of
teacher effectiveness, and desirable classroom relationship.
Teacher's attitude materially affects the educational and
vocational adjustment, his interpersonal relationships and other

components of teacher behavioural patterns. Hence, the following few studies on the effect of microteaching on the teachers' attitudes towards teaching are reviewed.

Ward (1970) undertook a survey of microteaching programmes. He asked what changes were observed in student teachers' attitudes towards education following the introduction of microteaching in teacher education. The four most frequently reported changes were : (i) greater understanding of the teaching process as a complex challenging profession; (ii) greater interest and enthusiasm towards education; (iii) increased self confidence; and (iv) greater concern for self improvement and self evaluation. Goldman (1969) conducted a study in which one group of student-teachers, prior to entering on professional elementary education course, received microteaching experience and another group did not. Results indicated that student-teachers in microteaching group developed a significant better regard for themselves and became significantly more critical of teaching cliches and other educational concepts as measured by a Q-sort modification of the Minnesota Teacher Attitude Inventory.

One study in in-service programme was conducted by Perrott, et al.(1974). After a course of 'effective questioning' through microteaching, attitudes of in-service teachers towards teaching were tested through a questionnaire 'Teacher Practices Inventory (Brown, 1968)'. Both in pre-course and post-course measurement the questionnaires were adopted. It was infered that there was no indication of change in response to items

reflecting the proper degree of pupil autonomy in problem solving. There was a significant shift away from stress on formal class teaching. Teachers were also somewhat more positive about new educational media after the course. More acceptance of group work, more pupil participation and less emphasis on formal teaching were all detectable in post-course responses during their study on attitudes towards teaching.

In another study conducted by Sparks and McCallon (1974), the results indicated that the experimental group of elementary science preservice teacher having microteaching experience did not achieve a more favourable attitude towards teaching elementary science rather there was a more positive change in the group taking a regular science methods course. In India,Passi (1976) and Joshi (1977) in their studies found that there was no significant differences in change in attitude towards teaching after acquisition of teaching skills either through microteaching or through that of traditional practices. Moreover, under the National Project (Das, et al. 1977) the studies revealed that (i) the effect of change from perceptual to audio modelling on favourable attitude showed no conclusive results; (ii) the results of attitude gain scores due to varying sources of feedback showed no significant change; (iii) none of the teachers showed attitudinal changes due to changes in microteaching condition from simulated to real or mixed; and (iv) the change in set of skills or even teaching units did not produce any significant change in the attitude of the student teachers towards teaching. Finally

it was infered that the acquisition of teaching skills through microteaching did not affect any change in student teachers' attitudes towards teaching.

Though number of studies conducted so far gave favourable results on attitude of the student-teachers/teachers towards microteaching (Cooper and Allen, 1970; Perrott and Duthie, 1970; McIntyre and Duthie, 1971; Levis, et al. 1973; Passi and Shah, 1974; Sharma, 1976; Passi, 1976; Joshi, 1977) but attitude towards teaching after a course of microteaching with skill acquisition was unfavourable as was observed from the reviewed studies. Only one study was traced from the in-service setting where a mixed result on attitude towards teaching was seen, thus it was felt that a study should be undertaken with a view to comparing the attitudes of in-service teachers towards teaching before and after the skills acquisition either through microteaching or emphasising those in an integrated manner through traditional practice teaching.

1.5.   STATEMENT OF THE PROBLEM :

This research study was undertaken with the following purposes : to study the effectiveness of skill-based microteaching over that of integrated approach in the traditional practice teaching on the development general teaching competence, to compare the effects of varying feedback treatments within micro-teaching on the development of general teaching competence, to

study the effect of the specific skills acquisitions on the ability to use them in macro-situation, and finally, to study the effect of skill acquisition on the attitudes of the teachers towards teaching and their reactions towards microteaching.

Hence, the present problem was entitled a study of "Effect of Various Treatments on the Acquisition of Teaching Skills through Microteaching".

1.5.1.   Objectives :

The specific objectives of this study were drawn as follows :

1)   To study the effectiveness of microteaching under various feedback treatments compared to the integrated skill-based traditional practice teaching on the development of general teaching competence.

2)   To study the relative effectiveness of various feedback treatments (self-analysis through audiotape feedback, supervisory feedback, and supervisory-cum-audiotape feedback)in microteaching situations on the development of general teaching competence.

3)   To study the effect of training through microteaching in specific teaching skills on the ability to use these skills in macrolessons.

4)   To study the change in teachers' attitudes towards teaching after acquisition of teaching skills through microteaching.

1.5.2.   Hypotheses :

The following hypotheses were formulated for testing in the present study :

H_1 - The gain in scores on General Teaching Competence at the post-test over pretest and of the retention test over the pre/post-test is significantly higher for the microteaching group using any of the three feedback treatments (self-analysis through audiotape, supervisory feedback and supervisory-cum-audiotape) than the 'filler' group under integrated skill-based traditional supervision.

H_2 - The gain in scores on General Teaching Competence at the post-test over the pretest and of the retention test over pre/post-test is significantly higher for the microteaching group under supervisory-cum-audio tape feedback than the microteaching group either of self-analysis through audiotape or of supervisory feedback.

H_3 - The gain in scores on General Teaching Competence at the post-test over the pretest and of the retention test over pre/post-test is significantly higher for the microteaching group under supervisory feedback than the group using self-analysis through audiotape.

H_4 - The gain in summated scores on the five specific teaching skills of the General Teaching Competence at the post-test over pretest and of the retention test over pre/post-test is significantly higher for the microteaching group using any of the three different feedback treatments than that of the 'filler' group under integrated skill-based traditional supervision.

H_5 - There is no significant differences in gain in summated scores on the five specific teaching skills of the General Teaching Competence at the post/retention test over pre/post-test in case of three microteaching groups.

H_6 - The gain in scores on Teachers' Attitudes towards Teaching at the post-test over pretest is significantly higher in case of microteaching group using any of the three feedback treatments (self-analysis through audiotape, supervisory feedback, supervisory-cum-audiotape feedback) than the 'filler' group under integrated skill-based traditional supervision.

H_7 - There is no significant differences in gain in scores in Teachers' Attitudes towards Teaching at the post-test over pretest in three microteaching groups using self-analysis through audiotape, supervisory feedback and supervisory-cum-audiotape feedback.

In stating the hypotheses H_1 , H_2 , H_3 , H_4 , and H_5 the gain scores of (i) post-test over pretest, (ii) retention test over pretest, and (iii) retention test over post-test were combined under the statement of each hypothesis; but the analysis of the results and their interpretations, discussions, and conclusions were made according to each gain scores separately of a particular hypothesis.

1.5.3.   Key Terms Used :

In this study, various key-terms are used, which are explained in the following :

(a)   Various Treatments - Specifically various treatments were the various feedback treatments during microteaching. The feedback treatments represented those acts of supervisor, informations about the performances through self-sensing viewing from audiotape, or even through supervisor simultaneously viewing from audiotape which suggested the teacher whether he was progressing along with the desired direction. These treatments were immediate, specific and satisfying; identifying appropriate and inappropriate behaviours; alert in comparing with the extrinsic standard or the modelled pattern of desired behaviour and in finding the ways and means of achieving further to meet the desired behaviour.

(b)   Teaching Skills - These were a set of related teaching behaviours which in specified types of a classroom interaction situations tend to facilitate the achievement of the specified

types of educational objectives. The whole teaching situation during classroom transaction is an agglomerated performance having twenty one identifiable units or teaching skills (Passi, 1976). In achieving the competency in teaching, the practices of at least five teaching skills as per the following were essentially required for an effective teacher. Hence, the five teaching skills : Probing questioning, Explaining, Illustrating with Examples, Stimulus Variation, and Reinforcement were used in this study. The details of these skills are described in the volume 'Becoming Better Teacher : Microteaching Approach', edited by B.K.Passi,1976.

(i)   Skill of Probing Questioning - This involves the teacher to competent himself on the following techniques for a desirable behavioural pattern in helping pupils to go deep into their responses. Those techniques are : prompting, seeking further information, redirection, refocusing, and increasing critical awareness.

(ii)   Skill of Explaining - It involves maximising the use of desirable teacher behaviours, namely, using explaining links, using beginning and concluding statements and testing pupils' understanding, and avoiding the use of undesirable teacher behaviours, namely : stating irrelevant statement, lacking in continuity in statements, using inappropriate vocabulary, lacking in fluency, and using vague words and phrases.

(iii)   Skill of Illustrating with Examples : Teacher
illustrates a concept, rule or idea with the help of
simple, relevant and interesting examples using
appropriate media and inducto-deductive approach.

(iv)   Skill of Stimulus Variation : Teacher draws and
sustains attention of the pupils by using purposeful
movements, gestures, change in speech pattern, focusing,
change in interaction styles, pausing, and oral-visual
switching.

(v)   Skill of Reinforcement - It is a skill on the part of
the teacher to use the verbal and non-verbal positive
reinforcers more and more and to decrease the use of
negative reinforcers for strengthening pupil behaviour
positively and encouraging him to participate in the
classroom discussion.

(c)   General Teaching Competence - This is the overall
competence of the teacher on planning the lesson, presenting the
matter, evaluation and managerial aspects of the teaching in the
context of classroom teaching at the secondary level. This
teaching competence was measured through the Baroda General Teaching
Competence (BGTC) Schedule, developed on the lines of Stanford
Teaching Competence Appraisal Guide (STCAG).(For Scale,See
Appendix-A.).

(d)   Teachers' Attitudes towards Teaching - The attitude
towards teaching was represented by the scores obtained through

the administration of the 'Ahluwalia's Teacher Attitude Inventory'. This was an inventory developed to test the teachers' professional attitudes towards teaching on six aspects : teaching profession, classroom teaching, child-centred practices, educational process, pupils and teachers. (For Scale, See Appemdix-B).

(e)   Experimental Group - This represented the teachers who were exposed to the treatment of instructional materials for the selected teaching skills through microteaching under various feedback treatments. Three experimental groups : E_1 (Self-analysis through audio-tape feedback); E_2 (Supervisory feedback); and E_3 (Supervisory-cum-audio-tape feedback) were taken under micro-teaching setting.

(f)   'Filler' Group - This group represented a control group with 'filler' task to avoid or to reduce the Hawthorne Effect. The teachers in this group were exposed the same treatment on orientation and modelling of the teaching skills as in experimental group prior to microteaching practices. But instead of micro-teaching they practised those skills simultaneously in an integrated approach through traditional practice teaching with skill-based traditional supervision.   . The significance of a 'filler' group is discussed elaborately in the caption 2.1.2. This group was named as 'F' group.

(g)   Macrolesson - A lesson which was taught by the teacher in a normal classroom of having about forty pupils taking usual time period about forty minutes on a subject content using

necessary teaching skills in an integrated manner.

(h)   Integrated Skill-basedTraditional Practice Teaching - The
traditional teaching practices are usually taught by the teacher
in macrolessons during normal class situation through the usual
methods of teaching adopted in teachers' training institution.
Their lesson-plans, practices are more reflected on the development
of subject content rather the teaching skills. The remarks of the
supervisor are vague, subjective,and not leading to any skill
development for the teacher under practice. But in this present
context, the teacher under traditional practice teaching was
exposed to the perceptual and symbolic modelling on the specific
five teaching skills analytically. The macrolessons on subject
contents were planned accordingly where all the five skills were
reflected in an integrated manner. During practice, the teacher
took the classes in macro-situation as per his lesson-plans. The
supervisor observed the full lesson taking down the components
of the skills to be improved and other suggestive informations
on these skills. After the class the supervisor fedback the
teacher under training accordingly as per his noted observations
on these skills in an integrated manner for the development of
teaching competence. This kind of training was adopted to the
teachers in the 'filler' group.

1.5.4.   Delimitations of the Study :

This study was confined to the secondary school teachers
(in-service teachers) drawn from Orissa State. The significance of

taking in-service teachers in this study was discussed elaborately
on the caption 1.1 and 1.2; and under the caption 'the Statement
of the Problem'. The sample in number was limited to thirty three
male trained teachers only from nine rural and private managed
secondary schools of two educational districts of Orissa.

Only four independent variables of various feedback
treatments : E_1 :- Self - analysis through audiotape; E_2 :-
Supervisory feedback; E_3 :- Supervisory-cum-audiotape feedback
under microteaching setting; and another F :- 'filler' group having
integrated skill-based traditional supervisory practice teaching
emphasising selected teaching skills were undertaken.

This study was further restricted to a five selected
teaching skills : Probing Questioning, Explaining, Illustrating
with Examples, Stimulus Variation, and Reinforcement.

The efforts to develop these skills among in-service
teachers were restricted to microteaching setting in real
classroom conditions.

The investigator acted simultaneously as the organiser
in organising and coordinating the programme in schools for the
success of the study; as observer in assessing the general
teaching competence of the teachers during pretest, post-test
and retention test through BGTC Schedule (though an experienced
person was assisting him during class observation); as a resource
personnel during modelling the teaching skills, giving model
microlessons during demonstration classes; demonstrating the

macrolessons integrating all these skills, and as superviser during feedback treatments both in microteaching practices and in traditional practice teaching for E_2 (Supervisory feedback) and E_3 (Supervisory-cum-audiotape feedback); F (Filler'group under integrated skill-based approach in traditional supervisory practices) respectively.

The experimental field work of this project were undertaken in an in-campus activity instead of off-campus for the in-service secondary school teachers. The investigator proceeded from one school to another after completing the experimentation as per the schematic design, devoting thrity to forty days in each school. All the nine schools having thirty three teachers were covered within one academic session.

1.6.   SCHEME OF CHAPTERISATION :

The report of the study is divided into five chapters, namely, (i) Introduction including the present study, teacher education programme with special reference to in-service teachers, analytical approach and training of in-service teachers, micro-teaching and its related studies, statement of the problem, objectives, hypotheses and delimitations of the study; (ii) Method and Procedure of having the design of the study, sampling, experimental treatment, significance of the filler group, tools used, schematic design of the study, . the treatments, and statistical measures employed; (iii) Analysis of the Data and Interpretation of Results as per the objectives and hypotheses-wise

including the content analysis on the teachers' reactions towards
microteaching collected through Self-evaluation proforma;
(iv) Discussion of the Results as per (a) effectiveness of
microteaching, (b) effect of varying sources of feedback within
microteaching, (c) effect of specific five teaching skills,
(d) teachers' attitudes towards teaching after skill acquisition,
and finally the conclusion of the study; and (V) Summary and
Recommendations including educational implications and suggestions
for further study.

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