EFFECT OF MICRO TEACHING METHOD ON PEDAGOGICAL DESIGN CAPACITY OF PROSPECTIVE TEACHERS AT ELEMENTARY LEVEL

By

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Microteaching.

Teachers- In-service training.

Teachers- Training of.

Miniteaching

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Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Education at the Faculty of Social Sciences, International Islamic University, Islamabad

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2017

DEDICATED TO

MY PARENTS

for their unconditional love, support, and guidance throughout my life. They have always been and always will be my heroes. Thank you for the family that means more to me than anything else in this world.

CERTIFICATE

This thesis entitled "Effect of Micro Teaching Method on Pedagogical Design Capacity of Prospective Teachers at Elementary Level" presented by Allah Nawaz Reg. No. 78-FSS/PHDEDU/F11 in partial fulfillment for the requirements of Doctor of Philosophy in Education, has been completed under my guidance and supervision. I am satisfied with the quality of student's research work and allow him to submit his thesis for further process as per IIUI rules and regulation.

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ABSTRACT

Teacher education is a purposeful program that grooms the teachers to improve the proficiency and competence in their profession. It eventually enables them to meet the ground requirements and to face the new challenges of the future. Novice teachers encounter various types of problems regarding teaching. Especially in Social Sciences, they face several difficulties in arranging curriculum material and their personal resources to enhance the teaching learning process. The main objective of this investigation was to find out the effectiveness of microteaching method on pedagogical design capacity of the prospective teachers. A randomly drawn sample of 46 prospective teachers enrolled in B.Ed program at Government College for Elementary teachers, formed the subjects of the study. As an experimental study, they were randomly divided into two groups; experimental and control. Through a review of the related literature, six core skills: set induction, explaining, reinforcement, questioning, gesturing and closure were identified, as a composite set of microteaching, and they were practiced in the experiment. The experimental group was provided an eight-week pedagogical skill development program on microteaching method; while the control group was trained and taught by using the already practiced traditional method. Following the eight week Pedagogical skill development program, the researcher and two other supervisors observed the performance of both the groups in the classroom. Two appraisal sheets General Teaching Competence Scale and Microteaching Competence Observational Sheet were used to evaluate the performance of both groups. Also, an attitude scale was given to the experimental group to know about the attitude of the prospective teachers towards microteaching skill development program. A set of statistical techniques; t – test, Chi-Square and Analysis of Covariance were used to analyze the data. 16 null hypotheses were tested to measure the effectiveness of micro teaching. Eight hypotheses were rejected while eight were accepted. Results of the study showed that micro teaching method was significantly better as compared to the traditional method of teaching, the attitude of the prospective teachers was very positive towards microteaching. While observing and training the teachers, gender variations male teachers were found to be significantly positive towards microteaching, compared to their female counterparts. Major recommendations included, revisiting teacher training curriculum; developing an exemplary manual and bringing out a regular journal in microteaching; setting up micro clinics in training institutions; engaging teacher associations in action research and developing a linkage system with the pioneering international institutions in microteaching. Key areas to be focused on for undertaking future research in microteaching could include replication of similar experimentations; effectiveness of microteaching for student learning compared to e-learning methods, cost effective analysis of microteaching and other strategies, in-depth attitudinal assessment of the educators and the trainees and a creating criterion-based student assessment.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Teacher education is a purposeful program that grooms teachers to improve their proficiency and competence in their profession. It eventually enables them to meet the ground requirements and to address the forthcoming challenges. Knowledge-based training is the basic objective of teacher education program which students undertake before entering a formally into the profession. During the intensive pre-service program the prospective teachers learn to acquire knowledge and skills to formulate, deliver and assess the lessons to be taught their students. It is recognized that motivation, compassion and competition of the teachers are the basic requirements/criteria to judge the worth and scope of learners (Sisman & Acat, 2003). Educational institutions play an important role in the provision of learning to direct the learners' ideas and experiences from a period of immense ignorance towards a world of awareness. The quality of the institution plays a paramount role in achieving the transformation. This reflects upon the training of the teachers in the basic teaching skills embodied in one educational design.

Specific expertise, skills and comprehension are the pre-requisites for a successful teaching career and the prospective teachers must acquire such skills to perform their duty. Prospective teachers must get training to learn these skills and art to educate the learners usefully before going in to the fieldwork (Sisman & Acat, 2003). Teachers, themselves are as integral part of the program, as are the curriculum,

textbooks, periodical units and newsletters etc. However, it is expected that schools are those training centers where learners build up their perception about life experiences through immense and concentrated interaction with their classmates and teachers (Beydogan, 2002). Commonly teaching is looked as merely the transmitters of knowledge and skills. But they are in fact facilitators in the learning process and creators of a favorable learning environment. Recently, teachers have moved away from the theoretical approach focused on the teacher towards the student-oriented practice. To provide an effective education and self-regulation, teachers must be trained in teaching skills and strategies to provide effective education and self-regulation in a full academic culture (Oddens, 2004).

Micro Teaching is a technique used in the training of the teachers where the candidate teaches a small lesson 5 to 7 minutes in front of a small number of participants and classmates where situations and environment is fully structured and controlled. This technique of teaching a small lesson in front of small a class before teaching the whole class in real is quite effective in improving the training of the teachers. Moreover, in teacher education, it is a useful choice to teach a lesson (Akalin, 2003). Microteaching is a method that strengthens the teachers to acquire new skills in the light of the received feedback. In the development of teaching the skills, microteaching is a useful method and we can avoid many mistakes in one teaching by using it. It is also useful in getting the awareness of the necessary behaviors of teaching and it increases the confidence of the teacher candidates (Baytekin, 2004).

Pedagogical design capacity means tutors' proficiencies and capability to identify and motivate educators' self-assets. It combines various teaching skills to provide the training and practice that help the teachers in the planning and implementation of the lessons providing feedback and evaluating the students effectively by using a number of approaches. It also helps the teachers to promote their skill of communication, management and to prepare and utilize the materials of curriculum and personal teacher resources to achieve the teaching objectives. Teachers use curriculum material in classroom to support their teaching learning process and strengthen the behavioral change in their students. The term 'curriculum materials' refers to the various curricular resources that used by teachers to achieve the specific goals in the classroom.

As Shulman (1986) wrote that since more than two decades' curriculum materials and curricula had a great impact on the structure of teaching in the classroom. Teachers in their daily work, on the basis of personal characteristics of the contextual curriculum resources are involved in curriculum design process. Strengths and weaknesses make adjustments evaluation as a part of the analysis of teachers' curriculum materials. Although the approach is one of the fundamental aspects of teaching practice, novice teachers face many difficulties in their early professional life (Davis, 2006). Trainers who don't have the knowledge to examine the course material may create changes to overturn or even stop doing very necessary amendments to the categories. To prepare the new teachers to become effective professionals ready to implement the new curriculum materials and to analyze the changing role of teachers for catering the diversified learners of today, microteaching

plays a vital job to assist the beginners in utilizing the course material to better enhance the students' wisdom and comprehension. Participation of the teachers in curriculum planning, teaching and practice thinking in the process makes them successful teachers of the future. In each of these stages of education and becoming teachers, they make alterations in curriculum materials on a small and large scale (Drake, 2006). Teachers create new lessons, and develop corrections in the lessons e.g. adapting the sequence of activities and materials used and the structures of the participants (Forbes, 2007).

In Pakistan, elementary colleges are providing pre-service teachers, training under their B. Ed. Program. Following the training and after entering the profession, novice teachers encounter various types of problems regarding teaching. Especially in Social Sciences, they face several difficulties in arranging curriculum material and their personal resources to enhance the teaching learning process. Microteaching is a technique to develop their teaching skills. In this study, the effectiveness of micro teaching method was assessed against the development of pedagogical design capacity of the prospective teachers. To learn how to best support pre-service elementary teachers, an investigation was undertaken to comprehend how the prospective teachers are trained about the planning to remain busy in all these activities and how their teaching strategies would be reflected by the syllabi or curriculum material. This research study aimed especially on how the prospective teachers got the training regarding the use of syllabi.

Pedagogical design capacity and microteaching are two different concepts. Pedagogical design capacity deals with teachers' abilities, skills and knowledge to

cope with the real classroom situation. Microteaching is a unique method used for skill development especially in teachers. Prospective teachers are the educators who have to transmit knowledge, values and skills to upcoming generation. In current study the concepts of pedagogical design capacity and microteaching have been synthesized to find the effect of microteaching on pedagogical design capacity of prospective teachers at elementary level. It was a unique study in Pakistani perspective as first time these two different concepts were synthesized and its practical aspects were evaluated. This study opens new horizon related to competency enhancement of prospective teachers and contributes in generation of knowledge.

1.2 Statement of the Problem

This research was conducted to discover the effect of micro teaching method on the development of the pedagogical design capacity of prospective teachers in B. Ed program at elementary level. All students enrolled in GCET under B. Ed program were the population of the study. All 46 male and female prospective teachers were taken as sample of the study by using universal sampling technique. An experimental study was conducted in Government College for elementary Teachers.

1.3 Objectives of the Study

Following were the objectives of this study:

1. To investigate the effect of microteaching method on developing skills under pedagogical design capacity of the prospective teachers.
2. To find out the effect of instructions based on Micro Teaching method and traditional method on prospective teachers' skills development.

3. To compare the effect of micro teaching method and traditional method for developing pedagogical design capacities among the prospective teachers.
4. To find out the gender wise differences on developing pedagogical design capacity using the microteaching method and traditional method.
5. To find out the prospective teacher s' attitudes towards micro teaching skills development program.
6. To suggest the recommendations for stake holders regarding implementation of Microteaching skill development program.

1.4 Research Hypotheses

Following null hypotheses were formulated to study the effectiveness of microteaching method in developing a pedagogical design capacity of the prospective teachers viz-a-viz teaching with pedagogical design capacity and teaching traditionally.

$H_0$1: There is no significant difference between the mean scores of the experimental and control groups on developing the skills of pedagogical design capacity of prospective teachers when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$2: There is no significant difference between the experimental and control groups on the mean scores on the teaching skill "Set Induction" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$3: There is no significant difference between the experimental and control groups on the mean scores on the teaching skill "Reinforcement" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$4: There is no significant difference between the experimental and control groups on the mean scores on the teaching skill "Explaining" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$5: There is no significant difference between the experimental and control groups on the mean scores on the teaching skill "Questioning" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$6: There is no significant difference between the experimental and control groups on the mean scores on the teaching skill "Gesturing (Silence and Non Verbal Cues)" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$7: There is no significant difference between the experimental and control groups on the mean scores on the teaching skill "Closure" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$8: There is no significant difference in the mean scores of the male and female prospective teachers of experimental and control groups with respect to developing pedagogical skills when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$9: There is no significant difference between the experimental and control groups on the mean scores of the male and female prospective teachers on the

teaching skill "Set Induction" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$10: There is no significant difference between the experimental and control groups on the mean scores of the male and female prospective teachers on the teaching skill "Reinforcement" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$11: There is no significant difference between the experimental and control groups on the mean scores of the male and female prospective teachers on the teaching skill "Explaining" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$12: There is no significant difference between the experimental and control groups on the mean scores of the male and female prospective teachers on the teaching skill "Questioning" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$13: There is no significant difference between the experimental and control groups on the mean scores of the male and female prospective teachers on the teaching skill "Gesturing (Silence and Non Verbal Cues)" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$14: There is no significant difference between the experimental and control groups on the mean scores of the male and female prospective teachers on the teaching skill "Closure" when General Teaching Competence Scale (GTCS) was controlled as a covariate.

$H_0$15: There is no significance difference in the mean scores of the male and female prospective teachers of the experimental group with respect to developing pedagogical skills.

$H_0$16: There is no significance difference in the mean scores of the male and female prospective teachers' attitude towards microteaching skill development program.

1.5 Significance of the Study

This study may be significant for the following reasons:

Microteaching is a capacity building concept. It is applied in pre-service teacher s' capacity building programs for professional development of the teachers. The present study examines this microteaching technique. As a knowledge-based technique, prospective teachers should be acquainted about how to apply the pedagogical design capacity required for a useful field experience. This research might offer authentic results for promoting an effective pre-service teaching structure.

The quality of student learning depends largely upon a proper academic education and professional preparation of the prospective teachers to be able to apply their learnt knowledge in the classroom effectively. Therefore, reforming and revitalizing the teachers through capacity building programs would be a positive step in this direction.

The emerging standards and criteria developed to build the capacity of educational design for teaching skills of the pre-service teachers provide an opportunity for the policy makers to create a suitable standard to measure the

effectiveness of a capacity-building program for teachers. The consequences of this research would be a good foundation for all beneficiaries to improve the construction of the future programs to teach the skills needed to plan and conduct intensive research in this important but neglected area.

Teaching combines several techniques. The way of knowledge transformation is the science of teaching. Science observes things in parts and looks for the whole. Whenever, there is a process of teaching, there is a microteaching. Every teacher exploits microteaching during his/her teaching process consciously or unconsciously. Consequently, the results of this study would generally be beneficial for all the in-service teachers to provide them basic guide-lines to improve their instructions through microteaching.

There are a number of capacity building programs, but these are built up on theoretical bases for the prospective teachers. They do not have practical aspects. But this research has a combination of both the knowledge-based (theoretical) and skill-based (practical) characteristics for the prospective teachers. Therefore, the conclusions of this study would be applicable to all the training and capacity building programs for the prospective teachers and in policy makers for designing practiced-oriented programs.

This is a digital era; every field of life takes advantage of digital instruments. Digital instruments also affect teaching and are being utilized since long, in capacity building programs of the prospective teachers in several developed countries. Incidentally, the use of digital instruments was un-noticed in capacity building programs for teachers in Pakistan. But the findings of this investigation would be

helpful for the application of the digital instruments in building the capacity of the prospective teachers.

1.6 Delimitation of the Study

Keeping in view the financial resources and time constraints, this study was delimited to the following;

1. Prospective teachers of the semester Spring 2014.
2. Social Science subjects (Pakistan Studies, Social Studies and Islamic Studies)
3. This study was further delimited to six core teaching skills only.

1.7 Assumptions of the Study

It was assumed that after studying the microteaching booklet all the prospective elementary school teachers knew the concept of microteaching.

1.8 Limitations of the Study

This research had the following limitations:

1. Due to the time constraint, only six core teaching skills were incorporated in this experiment.
2. There was no appropriate instrument available in Pakistan to measure general teaching competence of the prospective teachers. Accordingly, the Baroda General Teaching Competence Scale was adopted, in its original form. It was used as covariate in the present study.

1.9 Methodology

The following research methodology was applied to complete this experimental study.

1.9.1 Research Design

This study was conducted through an experiment. The prime objective of this research was to measure the effectiveness of Microteaching Techniques on the development of pedagogical design capacity of the prospective teachers. The selection of the most appropriate design for this experiment was an essential necessity. Experimental design formed the design of the research where treatment or intervention strategy is given to the subjects or participants to measure whether the intervention produced a change in their behavior (Goldring & Berends 2008). The essential ingredient of the true design was that the subjects in the treatment group were assigned randomly. Pre-test, post-test control group, a true experimental design, was used to conduct the study. Schematic description of this experimental design is given below:

R O_1 T O_2

R O_1 _ O_2 (Creswell, 2009; Gay, 2009)

Here

R stands for "the random assignment of subjects to groups",

O_1 stands for "the Pre-test".

O_2 stands for "the Post-test".

T stands for "the treatment".

1.9.2 Target Population

There are 35 elementary teachers' training colleges situated in the Punjab province. All the students male and female enrolled in the B. Ed program of Government College for Elementary Colleges in Punjab formed the target population of this study.

1.9.3 Accessible Population

All the male and female B. Ed students (46) of the Government College for Elementary Teachers, Saidpur Road Rawalpindi, enrolled in the semester Spring 2014 constituted the accessible population of this study.

1.9.4 Sample of the Study

All the B.Ed male and female students enrolled in the Government College for Elementary Teachers, Saidpur Road Rawalpindi, were included in the sample of this study. The sample was taken using universal sampling technique. So, the sample consisted of all 46 regular B. Ed students.

1.9.5 Research Instruments

The following research instruments were administered during the study;

- GTCS (General Teaching Competence Scale) was used as a covariate
- Microteaching Competence Observation Sheet (MCOS) was used as pre and post-tests
- A Questionnaire for the prospective teachers to measure their attitudes towards the Microteaching program

1.9.6 Procedure of the Study

In the present study, micro teaching was used to develop the pedagogical design capacity among the prospective teachers and six core skills were selected through the review of the related literature. For this purpose both male and female students of the B. Ed. Class were selected from the Government College for Elementary Teachers, Saidpur Road Rawalpindi. The researcher conducted an experiment by dividing the prospective teachers into two groups randomly. One selected group was trained in the traditional way and the second group was instructed through the selected pedagogical design skills using micro teaching method for the same duration of 8 weeks. True experimental design was used and pretest post-test control group design was used in this research study. For the assessment of the general skills of the prospective teachers, a general teaching competence scale (GTCS) was administered as a covariate. This test was used as covariate in the present study. Microteaching Competence Observation Sheet (MCOS) observational check list was administered as pre-test to assess the previous knowledge of the participants about the pedagogical design capacity and these tests were administered 2 weeks before the experiment was conducted. Following the experiment, Microteaching Competence Observation Sheet (MCOS) as post-test was given to both the groups to check the progress/development of the pedagogical design capacity in group A (the treatment group) through micro teaching.

1.9.7 Data Collection

Through micro teaching skills inhibiting pedagogical design capacity were developed among the prospective teachers. The General Teaching Competence Scale

(GTCS) was administered as a covariate in the first phase of the study. This covariate helped the researcher to ensure the similarity of the level of the respondents in both the experimental and control groups of the prospective teachers. A Microteaching Competence Observation Sheet (MCOS) observational check list with the selected skills form pedagogical design capacity was administered as a pre– test. The same Microteaching Competence Observation Sheet (MCOS) was administered after the completion of the 8 week microteaching session to find out the variance in the result between the experimental and the control group. After the completion of 8 week session of microteaching to the prospective teachers a questionnaire was administered to the treated group to find out their attitude towards the microteaching program.

1.9.8 Data Analysis

To analyze the raw data obtained in this study, both descriptive and inferential statistics were applied through Statistical Package for Social Science (SPSS). Analysis of Covariance (ANCOVA) was applied to measure the effect of the microteaching method and teaching with the traditional method where the General Teaching Competence Scale (GTCS) was administered as covariate. Chi-Square test was applied to find out the attitude of the prospective teachers towards microteaching program. t test, Mean, percentage, tables of frequency were used for the data gained from the subjects of the study.

1.10 Definitions of Key Terms

1.10.1 Microteaching Method

Microteaching is a short and meaningful teaching method in which many teaching skills are separately practiced.

1.10.2 Pedagogical Design Capacity

The educators' competence and abilities to identify and motivate equally the educator s' resources and course material are named as Pedagogical Design Capacity. It includes all the teaching skills that a teacher need in the classroom.

1.10.3 Traditional Method of Teaching

Traditional method of teaching is based on the knowledge transmission, demonstrations of A. V Aids and using organized lectures, with the use of curriculum-based textbooks. This method was employed on the Control Group.

1.11 Conceptual Framework

The conceptual framework of the study is described in the following figure. This is an experimental study and in this experiment, the effect of micro teaching method on pedagogical design capacity of prospective teachers was investigated. For this purpose micro teaching method was used as an independent variable and pedagogical design capacity of the prospective teachers acted as the dependent variable. The MCOS, as a pre-test was administered. The General teaching competence scale (GTCS) was administered as a covariate, to assure the equal level of the prospective teachers' knowledge and general teaching skills. It was administered 2 weeks before the experiment was conducted.

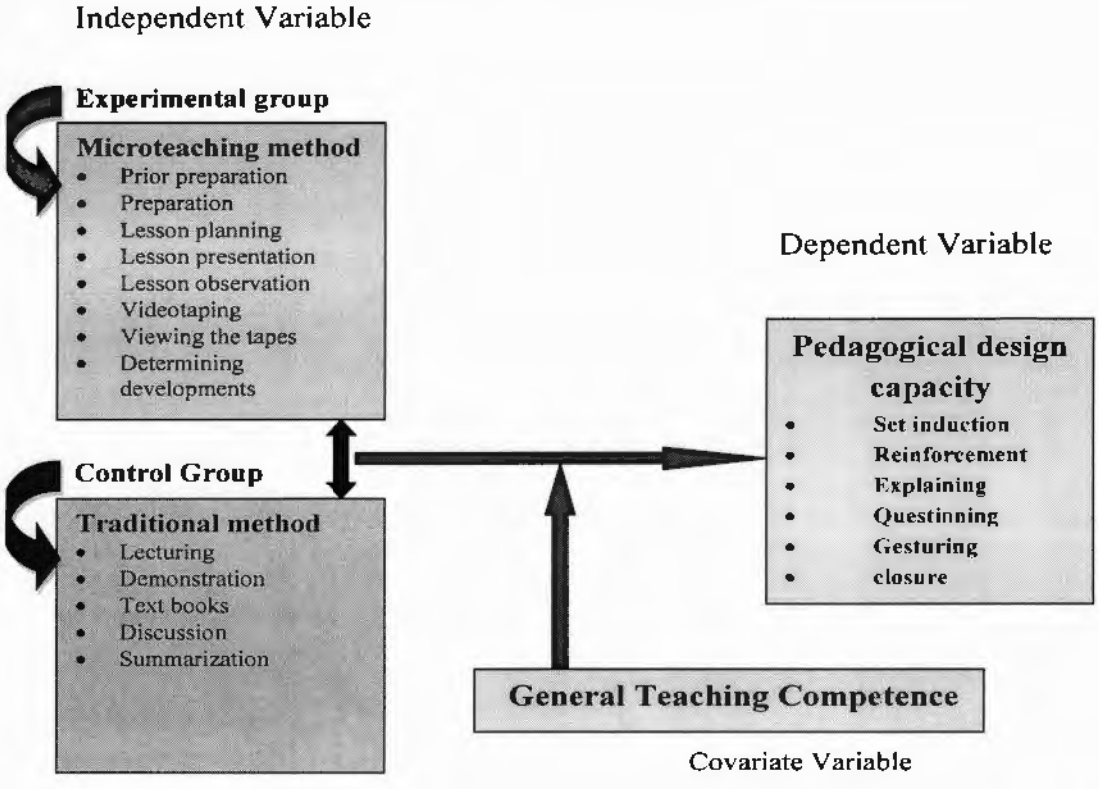


Fig. 1.1: Conceptual Framework of the study

CHAPTER 2

REVIEW OF RELATED LITERATURE

Teaching, now a days has grooming as technology. The teachers of tomorrow have to be equipped with both professional and technological aspects. So, it is important to train them in pedagogical and technological skills which are necessary and inevitable in their professional teaching field. The present study focused on the development of skills under pedagogical design capacity of prospective teachers through the micro teaching as a condensed form of learning. It investigated how these capacities can affect students' learning. This part of write-up deals with review of related researches to support the present study.

2.1 Microteaching

Microteaching is a scaled-down teaching. It is an important program for making the efforts of teacher training program more scientific, effective and meaningful. It is now considered not only for the training of teachers for technical building but it is also a useful research instrument. It simplifies the usefulness of a particular investigation of teaching skills and learning variables.

Dwight Allen and Robert Bush of the Stanford University first coined the term microteaching in 1963. A number of experiments have been conducted in USA, UK and Netherlands. The Lever Halme Trust gave five-year grant to the Stirling University in the UK for doing work on microteaching. Wragg works at the Exeter University on microteaching. Shively, Adereben Wan Mondtrans and Read have done

a lot of work on microteaching at Purdue University. A comprehensive bibliography on microteaching has been prepared by Raymond McAleese of the University of Aberdeen and Derick Unwin of the University of Ulster. PerlbergAyre and David Oberiant of the Department of General Engineering, University of Illinois, have used microteaching technique to improve engineering instruction (Sharma & Chandra 2003).

A survey was conducted in the US recently, on teacher training programs using the microteaching method. Result declared that microteaching can be used in secondary education, and about 150 universities and colleges were using this method of microteaching in teaching programs and 50 institutions were using microteaching for the training of in-service teachers (Aggarwal, 2004). Results of the various studies are indicating the importance and effectiveness of the microteaching method in the skill development of teachers at universities and colleges level. This study motivates the teacher educators and teacher training institutions to practice microteaching method for the development of teaching skills in teachers.

Khalid (1982) did his research work on microteaching in Pakistan at the Institute of Education & Research, Punjab University Lahore. With the passage of time this task opened new horizons in both in-service and in pre-service teacher education institutions in Pakistan. Today, in teaching field microteaching has become an important and innovative development in Pakistani context. Universities like Institute of Education & Research, Punjab University Lahore, Education University of Lahore, Allama Iqbal Open University (AIOU) Islamabad have included these techniques in their degree programs in the teacher training programs and besides

Provincial Institute of Teacher Education (PITE) and Directorate of staff development (DSD), have also a systematized chain of trainings in the technology of microteaching.

In Pakistan Dr. Khalid Ibrahim first time did his work on microteaching at Punjab University. He found microteaching method a unique and useful method for the training of teachers for both in-service and pre-service. Institutions like Punjab University, Provincial Institute of Teacher Education (PITE) and Directorate of staff development (DSD) adopted microteaching method for skills development programs for teachers but it was limited in nature. This program was not followed by all institutions providing professional training to teachers like government teachers at elementary level.

In Trakya University an experiment was conducted by Ogeyik (2009) to investigate the behavior of trainees regarding merits and demerits of microteaching. Finding was interesting and in favor of microteaching. It was concluded the microteaching program can promote the effective teaching.

Microteaching is a method in which a complete and systematic procedure is adopted in which pedagogical context is simplified and structuralized where teacher trainees focus on particular aspect of a lesson to attain specific goals with efficiency. Microteaching has its own steps to follow from beginning to its end. While a teaching technique is sub part of method which facilitates a teacher while adopting a specific method like reward, motivation, physical exercise etc. Although some educationist has used Micro teaching as technique but basically they associate it with different methods of teaching (Morrison, 2017).

Taskaya Serdarhan Musa 2014 also used microteaching as a method in his study titled, "The evaluation of micro teaching method used in the training of primary school teachers in turkey". In this study, microteaching was considered as a complete method of teaching.

2.1.1 Microteaching as an Innovation

Singh (2007) described that microteaching is an innovation in the field of teacher training. As a mini-fad in the training of teachers, in fact, aspects of the microteaching are being used from a long time in the institutions of teacher training. The microteaching concept is derived from the mini learning theory which endorses the concept of programmed learning and computer based teaching. The assumption behind this is breaking of different skills in small components and the learning as a whole. Other concept of this theory holds the reactions and reinforcements in the process of teaching. Credit should go to microteaching developers, conversely, for the implementation of all principles and educational theories in a dynamic structure of teacher training. The most important ingredients are the people involved in asking probing questions. the microteaching essentially focuses on teaching behavior.

2.1.2 Micro Teaching and Mini Teaching

Rahman (2005) and Qureshi (2005) portrayed that microteaching simplifies the complexities of teaching in the regular classroom by creating classroom environment enthusiastic in the laboratory settings to the training of teachers. The situation is created for exemplary state of education in terms of reduced size, and the student teacher teaches a small group of 4-6 students. Duration of lesson is condensed to 5 or 10 minutes by following the training tasks. It consists of teaching practice and

exact teaching skills e.g. questioning, mastery of teaching strategies, management of classroom, uses of curriculum in education, decision making in education, flexibility and strategies of teaching. Short lesson delivered by prospective teacher is recorded by audio or video recorder. It is replayed and the student him/herself, the peers and the supervisor gives feedback on it soon at the end of the lesson. Participants, who attended the short lesson, answer the questions about the lesson and about the skill presented by the trainee teachers. Trainee teachers receive quick feedback based on real feedback from the tape, the peer analysis and suggestions by the supervisor help the learner in the restructuring of the lesson. He/she then immediately re-teaches the lesson to new students.

Process of microteaching is simple and attractive in its nature. Activities involve in microteaching provide motivation to the participants like videotaping is a unique activity in which teacher can see him/herself again and again till the required perfection of a specific skill. Lesson of microteaching is short and 5 to 10 mints are required to practice one skill, that is time saving.

Mini teaching can be defined as a short lesson delivered to a class providing instructions with narrow focus on a concept or skill for propose of relating to a larger lesson. It can be used to introduce social science subjects, math and science lessons. Mini teaching usually focuses on a specific topic including writing, reading, problem solving or a skill. In mini teaching, teacher conveys a smaller concept with using a mini lesson plan. The students after involving this mini teaching can be able to relate this with larger concept.

Microteaching has re teach session, 5 to 10 minutes session, involves a supervisor 3 to 4 students and peers and only few teaching skills are focused. In mini teaching no re teach session, 5 to 40 minutes session; involve either a small group or whole class and gradual integration of teaching skills.

2.1.3 Definitions of microteaching

Some of the definitions of microteaching offered by famous educationists are as follow:

> "Microteaching is a teaching technique used to scale down the lesson and number of students" (Allen, 1996, p. 47).

> "Microteaching includes a practice of some specific skills and behaviors of teaching under controlled situation for improvement based on constructive feedback" (Allen, 1996, p. 48).

> "Microteaching is a technique used in education for the teachers training which allows the prospective or pre-service teachers to prepare a short lesson of 10 minutes duration maximum by covering a specific teaching skill. Trainee teacher presents the lesson in front of class that is recorded and replayed carefully" (Bubb, 2007, p. 190).

> "The term microteaching is not new, it is applied by using TV for recording and showing the responses of trainee teachers to themselves, which are executed in a simplified and relaxed but artificial environment" (Al-Afendi, 1980, p. 165).

> "Microteaching includes a specific training way in which a trainee teacher practices a teaching skill in the form of a small lesson with duration of 5-10 minutes in the classroom in front of a limited number of people by using the videotape recording and various sources of feedback. Microteaching is a way of training that is used in the institutions of teacher training through reducing the teaching situation to minimum level, thus letting trainee teacher focus on specific skills in less time by teaching a small concept or lesson" (Singh, 2007,p. 87).

Singh (2007, p. 88) defined microteaching as:

> "Microteaching, a specific technique in which lesson is cut down small pieces with respect to specific skills like explaining, set induction, questioning etc. A trainee teacher presents this lesson in front of peers with a small period of time five to twenty minutes. It helps the trainee or student teachers to gain a novel experience of developing important teaching skills and it may help them to improve their practices".

> jangira & Ajit (1982) defines microteaching in terms of reduced class size and lesson duration as a scale down activity and called it a miniature classroom".

Khalid (1997p. 279) after his distinguished research on prospective teaching in 1982 describes microteaching comprehensively as:

"Microteaching is a short and meaningful teaching model in which many teaching skills are separately practiced unless the teacher grip over skills. All this happen under a controlled situation. It is analyzed and the process of treatment is ongoing on this basis till proficiency in particular teaching skill is gained. "

Recently some distinguished educationists defined it as:

"Microteaching is an activity that can be used as a tool for the development of skills". It also suggests that teaching is a mini-event, which consists in the performance of micro-ring skills (which are social or psychological aspects, and ask questions such as skill) videotaped. This recording is shown to the small group, and then the individual himself and group do performance evaluation. It allows a person to repeat that performance during the evaluation of the proposed changes through integration into the new lesson" (Quinn 2000, p. 388).

"Miniature often focuses on the exercise of certain teaching skill such as, asking probing questions, using the time and provide clear and unambiguous instructions and typically includes the education of a simplified three ways: the size of the class, and the length of the lesson and the complexity of the task" (Cruickshank & Metcalf, 1990, Grossman, 2005).

Thus, microteaching technique holds that a teacher takes an exercise of one specific teaching skill under the guidance of supervisor, peers and (or) videotape which observe trainee's performance in a laboratory classroom and then he himself observes performance on TV screen, gets feedback from his colleagues/peers and supervisors who suggest recommendations about his presentation of the teaching skill. The procedure lasts till the perfection in this skill is attained.

All these teaching skills which contribute to make good teaching can be defined, observed, controlled and measured by means of practice. Microteaching is specifically used to concentrate on a particular skill of teaching and it gives the practice of those teaching skills in structured environmental conditions.

2.1.4 Objectives of Microteaching

Rao & Sreedhar (2006) further illustrated some major objectives of microteaching. The technique of microteaching can be used to achieve the specific objectives:

• For trainee teachers microteaching is a way to gain expertise in newly introduced teaching methods.

•To give the opportunity for trainee teacher by giving him the confidence through the mastery of skills.

•For the promotion of teaching potential to utilize the strengths of teachers in actual classroom situations.

•To get the most benefits with available materials, money and time.

Tara & Manoj (2003) formulated some genuine objectives of Microteaching:

a) To give practical training to the teachers under the teacher training program by lessoning the complexities of real classroom.

b) To identify drawbacks of teachers and give immediate feedback for modifying their behavior.

c) To improve teaching through more control of instructional process and supervision.

The important aim is to provide training of microteaching technique developing self-confidence in teaching, awareness of troubles of teaching and alteration of behavior among the teachers. Above mentioned points clearly indicating that main objective of microteaching is development of teaching skills by following a controlled process.

2.1.5 Nature of Microteaching

Singh (2007) describes the nature of microteaching as:

- Microteaching is now become an innovation in teacher training and teacher education institutions.
- It is a teacher training technique.
- Micro means small but here it is in the sense that it can minimize the complexities in actual classroom teaching.
- Time of each micro lesson ranges between 5 to 10 minutes.
- It is highly individualized training device.
- Class size is 5 to 10 participants by reducing the class size.

- The use of video tape and CCTV makes the observation very objective.
- After the completion of the small lesson immediately feedback is provided to the trainee.

Microteaching has become a structured and to the point skill development method in teacher training programs. It is an innovation that may be implemented in all teachers training institution for betterment of teacher training programs in Pakistan.

2.1.6 Assumptions of Microteaching

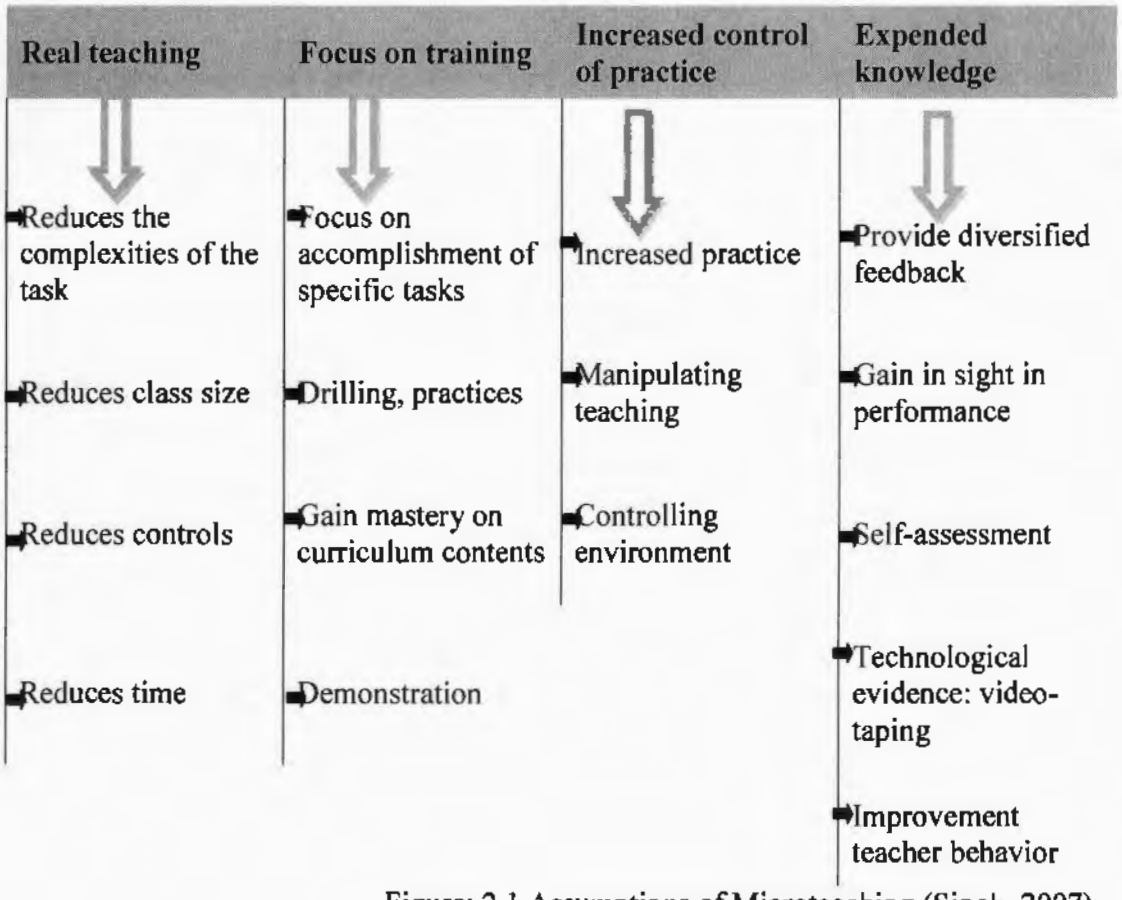


Figure: 2.1 Assumptions of Microteaching (Singh, 2007)

Microteaching reduces the complexities of normal classroom teaching, class size, scope of content and time are all reduced. It focuses on training for the accomplishment of specific tasks, including the practices of teaching curricular materials and the demonstration of teaching methods. It also allows for increasing control of practice. The rituals of time and students are manipulated.

In the practice setting of microteaching a high degree of control may be manufactured in the capacity building program. It expanded the normal knowledge of results of feedback dimension in teaching. The trainee engages in a critique of his maximum insight into his/her performance several sources of feedback are put at his/her disposal. He/she analyzes the aspect of his/her own performance in the light of his/her goals with the guidance of a supervisor or colleague. The trainee and the supervisor go over students' respond forms that are designed to elicit students' reactions about specific aspects of his teaching. If the supervision has video-tape available, he may use videotape playback to show the teacher how he performs and how he may improve. All his feedback can be immediately translated into practice when the trainee reteaches shortly after the critique conference.

2.1.7 Features of Microteaching

Sharma & Chandra (2003) describe that microteaching has following significant features:

2.1.7.1 Micro Element

Microelement methodology simplifies the complexities of teaching. It focuses on the complex task for teaching effectively and for performance; one must first

control the important components. By focusing the objectives of the lesson and specific assignment, reduction of teaching events and reduction of students and time of the lesson, possibility can be made to focus on the training process and to ensure greater efficiency.

2.1.7.2 Technical Skills of Teaching and Teaching Strategies

It is the main feature of microteaching; it provides the chance of discussion about a specific skill and leads to the expertise of teaching strategies in selection of teaching skills in seminars and conferences. Available literature and books on methods of teaching consists of teaching skills and strategies required for effective teaching. But there was no discussion to analyze the classroom for training and research for the improvement of teaching situations.

These skills can be categories into three sections:

2.1.7.3 Pre-Instructional Skills

Neerja (2003) summarized three levels of skills; formulating objectives, sequence and organization of knowledge. These are integrated to achieve specific objectives, present appropriate content, their regulation, and selection of the appropriate teaching aids.

2.1.7.4 Instructional Skills

Instructional skills include that utilize during the lesson, the skills to explain, discuss the issues and promote the student participation. These are connected with diagnostic difficulties of student teaching in a proper classroom conditions.

2.1.7.5 Post-Instructional Skills

Post-Instructional Skills provide evidence of students' performance, interpretation of test planning for taking corrective measures. Microteaching allows students to develop these skills and perfecting a way to control the teaching strategies.

2.1.7.6 Feedback Element

In microteaching necessary feedback is provided to the trainee teachers by using many consistent and accurate ways after the end of a lesson. Experienced verbal reactions from the supervisor, monitored, filled up forms of the peer group and observed recording and audio & video lesson of the presentation.

2.1.7.7 Safe Practice Grounds

Microteaching laboratory has all the inherent properties of actual class. The classes are taught under simulated conditions with small groups, and students learn in safe practice ground.

2.1.7.8 Research Laboratory

Microteaching is the practice of a specific skill under controlled situation in which computer technology is used for the recording of short lesson given by trainee teacher for the purpose of feedback. The classroom in the school or college where this practice is going on is said to be a microteaching laboratory. This microteaching laboratory is available in training institutions of pre-service and in-service institutions. Function of microteaching laboratory is to simplify the teaching practice

and it gives the chance to control the situations in such a way, not possible before. Research yields some areas for investigation effectively: (Neerja 2003).

- For the improvement of sequence and procedures of the microteaching situation in-house
- Researches for the improvement of effective supervision techniques
- Effective analysis of a specific task and training procedures of individual diversified qualities.

2.1.8 Microteaching Models

In 1960s originally microteaching was introduced and the basis of this was Stanford University model (Allen, 1966). Microteaching practices was attached with behaviorist frame, but with the passage of time influence of cognitive models and theoretical positions was also there (McIntyre, McKnight & White, 1977).These changes have emerged as a general shift in the nature of educational research (1996). MacLeod (1988) outlined four distinct models of microteaching:

2.1.8.1 Pragmatism

It emerged as a collection of teaching concepts from the field of psychology like reinforcement and modeling. Purpose of this is to give focus on unit success. Here unit success means command on a specific skill. Selection of skills in microteaching is main task.

2.1.8.2 Behavior Modification

This model of microteaching views teaching skills as a combination of behavior that can be developed by using the classical behavior techniques.

2.1.8.3 Social Skills

In microteaching social skills of teaching are viewed similar to motor and perceptual skills.

2.1.8.4 Cognitive Model

Cognitive model as its name is indicating, focuses upon ways of thinking instead of ways of behaving during the practice of teaching skills. This model focuses on thinking about someone's teaching and suggests a long-term perspective instead of a short-term perspective of teaching behavior.

Microteaching models in conclusion, earns flexibility to utilize requirements of the capacity building programs. Consequently, in-service teachers can improve their teaching skills with respect to behaviorally and cognitively.

2.1.9 Various Elements of Microteaching

A microteaching program consists of various elements which lead to achieve the certain determined objectives. Singh (2007), Khalid (1982) and Pelberg (1988) have identified elements essential to microteaching programs.

1) The Supervisor.
2) Microteaching Students.
3) Videotape/ Audiotape Recording in Microteaching.
4) Feedback in Microteaching.
5) Teaching Skills.
6) Laboratory for Microteaching Training.
7) Samples of Microteaching Lessons.

The prominent elements and their role in microteaching are outlined below:

2.1.9.1 The Supervisor

Microteaching supervisor is essentially a teacher. He/she monitors and refines performance of the skills that serve as the objectives. Fry et al (2003, p. 138) coined the supervisor as mentor. Brown (1975) describes the role of the supervisor to help students to improve their teaching. The responsibility of the supervisor in microteaching is as follows:

Developing ability to perform a skill: The supervisor should help the trainee to develop an ability to perform a skill. He/she discharges the following functions in this role:

- Helps the trainee in discrimination of the skill and reinforces his/her performance.
- He/she tries to understand the behaviors that constitute the skill and to become sensitive to the cues that signal when the skill is demonstrating.
- Reinforces his/her behavior when the trainee performs the skill, or begins to approximate the performance.

Khalid (1992) further mentions that microteaching provides a very relaxed environment for instructional help to the trainee by the supervisor. Suggestions of the supervisor are immediately tried out in reteach cycle to confirm or disprove through this approach.

To understand the application of skill: The supervisor helps the trainee to understand to what extent the skill should be applied. Having a repertory of reinforcement skill does not ensure good classroom applications are used. His/her

essential role is to help the trainee in making the professional decisions. This role of the supervisor relates to the application of skills.

Working with trainee: Each supervisor is assigned between 6 to 10 teacher trainees at the start of the session in microteaching and he/she works with the group.

Visiting school: The supervisor visits his/her trainee in the school and prepares schedule on microteaching lesson in the practicing school. This requires special arrangements. The period is only between 5 to 10 minutes. The pupils discuss with the supervisor after the lesson.

Supervising the lesson: The supervisor supervises the lesson. He/she notes improvements that are to be made by the pupil-teacher in the presentation of the lesson as he/she was recording points of appreciation.

Evaluate the lesson: The supervisor evaluates the lesson, gives feedback according to the observations (Singh, 2007).

Pankajam (2005) says that the role of supervisor is inevitable. Supervisor gives feedback in the form of suggestions and analysis. The feedback from supervisor and other sources guide the student teacher to revisit and improve his or her lesson. Therefore, the role of the supervisor is very crucial and important in the microteaching. He/she should be well educated and well qualified so that all the participants pay respect to him/her otherwise the character of the supervisor may face problems particularly in the in-service microteaching capacity building programs because some participants have already practicing teaching skills in school environment and some show less interest.

2.1.9.2 Videotape Recording in Microteaching

Videotape recording is not essential part of the microteaching process. But, if used, it strengthens the microteaching process in two ways: first, it is excellent for both the development and display of models of various teaching skills. Second, the videotape recorder is a powerful feedback source in microteaching process. It helps the trainee to understand his/her own performance. It is generally agreed, that the availability of video recording enhances the effectiveness and flexibility of microteaching.

Ajayi-Dopemu (1986) conducted an experimental research for the purpose of investigating the effectiveness of video recording in teacher training programs and in teaching practices. For this investigative study researcher made two separate groups of individual students and treated them differently. One of these group practiced teaching skills by using microteaching method and the lesson was recorded. The other group was also went for the practice of teaching skills but they were not video recorded. After the completion of this experimental study, results revealed that overall progress of gaining mastery in selected teaching skills was significant better for the group that practice teaching skills by using microteaching with videotape recording.

Ethell & McMeniman (2000) summarized their conclusions by giving the views about the effectiveness of videotaping that in classroom practices it is necessary to use videotape recording for the encouragement of critical reflection. Louden, Rohl (2005) concluded their results of the studies for the prospective teachers and in-service teachers, it would be necessary to carefully observe the

practices of effective teachers and observe the quality of teaching. This opportunity should be given to beginning teachers because it would be helpful for them in the actual situation of the class. Seeing and analyzing the video recordings of effective teachers by discussing their practices and reflecting on teaching skills in the classroom would be very effective mean of developing teaching skills. It can be done by recording model lessons. Yusuf (2006) also provided evidence based on his experimental research that it should be necessary in microteaching for the provision of feedback to use audiotape or videotape of lesson. Paul, Jenny& Brown (2007) presented some major advantages of using the videotape recording in the classroom. They declared that so many advantages are there to record the lesson. In real life and in case studies for enhancing effectiveness, it is a natural process to videotape the events. Videotape can record the complex situations of classroom activities and give chance to student teachers to view the escaped events in the first attempt of viewing. Videotape recording gives chance to see exemplary teaching practices by using pictures and sounds to improve student teachers' own teaching experiences.

Impact of videotaping is very significant and strong on student teachers in skill development program. It is useful instrument for quick and useful feedback that is an essential ingredient of microteaching.

2.1.9.3 Feedback in Microteaching

The best way to develop a skill in student teacher is to get feedback from other teachers. Proper feedback helps in-service and pre-service teacher to identify their strength and weaknesses and to help them by identifying improvement areas. Microteaching is said to be a laboratory of teaching practice in which small groups of

instructors observe each other and then discuss with one another. Edwards, Friedland & Bing-You (2002) observed that microteaching exercise allowed teaching skill to be practiced in a brief period; followed by feedback. Fenner & Newby (2007) described that after each microteaching phase, the group gave feedback which was used to improve the lesson plan. The lesson plans were collected, copied and handed out to each group member.

Success of microteaching method totally depends upon healthy and on time formative feedback and it is very important ingredient of microteaching. Feedback means healthy communication between student and supervisor after the end of a short lesson. Feedback highlights the strengths and weakness of microteaching. As a result, prospective teachers by assessing themselves can derive the standard of expected performance. By using videotape recording or audiotape recording supervisor is able to give more objective feedback for the evaluation of his/her performance instead of subjective feedback because recording gives the chance to watch students' lesson repeatedly without any biases. Sources of feedback are different and many ways are there to provide feedback like peer observation, audiotape, direct from supervisor and videotape. Above mentioned means of feedback are used in microteaching but videotape is considered most effective mean of feedback and considered necessary part of microteaching because of its objective approach.

Wilkison (1996) conducted a longitudinal study providing feedback to his students about the microteaching techniques. He asserted that from different sources of feedback student teachers can learn more about teaching skills. Positive feedback

from the supervisor side motivates the student teachers and helps them to avoid common mistakes during the practice of a specific skill.

Rosenstein (2002) observed that for the assessment of performance and interactional feedback, and for the assessment of situational feedback videotape can be used. For the assessment of performance feedback, it is used to evaluate the performance of trainee teachers' behavior related to that specific desired skill that to what extent desired skill is achieved. Main purpose of the feedback is to give awareness about weaknesses and strengths of performers. Secondly, assessment of interaction feedback gives attention to the interaction between colleagues, trainees and supervisors focusing attention upon performance of the trainees. This type of feedback is given by all people around the student teacher for the purpose of quality improvement and makes the specific skill more perfect that is under practice in the classroom through microteaching. Communication used in microteaching can also be non-verbal, verbal or it can be both. Thirdly, for the assessment of situational feedback, videotape is used. This type of assessment is used to understand and to plan the situation in which discussion is going on. Holistic approach is emphasized for this purpose (Yusuf 2006). Consequently, the nature of the feedback may depend on the many sources but it aims to provide improvement in teaching skills and techniques to teachers for effective teaching.

2.1.9.4 Sources of Feedback

After the presentation of a small lesson in the classroom for the purpose of betterment in teaching, different comments and suggestions are given to the trainees

are called feedback. Rahman (2005), Qureshi (2005) and Bukahri (2006) describe that the availability of feedback from different sources, such as:

- Feedback by the supervising educators.
- Feedback by the peer group.
- Feedback through audio and video tape recording.

Sharma & Chandra (2003) expended the feedback tools, such as:

- **Laboratory supervisor's oral feedback:** Environment of the laboratory plays an important role in teaching learning and for practicing a skill. Communication can be more effective in laboratory by providing the trainees a non-threatening environment. It is necessary to maintain healthy communication between supervisor and trainee. Accuracy of feedback is necessary from the supervisor side and laboratory's micro elements can help the supervisors by giving the chance of focusing on observations.
- **Pupils learning questionnaires during the lesson:** This type of questionnaires administered to the class for the purpose of feedback. These questionnaires consisted of structured questions and observations that boost the skill that is under practice. After getting the feedback from the peers and supervisors now it is necessary to use this feedback for the betterment of trainee. A discussion session takes place between supervisor, peers and trainees. Role of supervisor is dominant here as he/she explains the feedback to the class and discussed its main points with suggestions by using his expertise.

- **Audio recording:** According to Veer (2004) immense development of technology, has made many technological equipments low-priced. Because of this development small size equipment, portable devices, mini tap-recorders, chargeable batteries etc. are available at low cost. As a result it is easy to use technology in schools and laboratories for microteaching. Whole context is difficult to understand because of verbal interaction only. Feedback of supervisor considered one sided because this is based on audio taping. Sometimes, people cannot even recognize their own voice due to noise pollution and disturbance in audio taped voice.
- **Video recording:** Modern era is the era of video recording that consists of a camera and a television, small in size and easy to move. Now it is easy to record all the procedures and activities in the classroom without any disturbance inside or outside. Now because the use of new technology it is easy to give more accurate and quick feedback to trainees verbal and non-verbal. It gives better chance of consistent analysis. It is conformed from a number of researches that videotaping and modern techniques are more effective as compare to audio taping in teacher training programs as well as In other areas also like, psychotherapy, counselor training and in human relations. According to Fry et al (2003) videotaping is more effective for giving feedback. It has many benefits for effective training specially to modify the behavior of students. Now students and supervisors can see and evaluate more specifically by giving more focus on individual behavior.

It can be elicited from the above discussion that all these feedback tool and modes are significant and imperative in microteaching.

2.1.10 Steps in Microteaching Procedure

Reddy (2004) presented specific steps: figure below explains that steps of microteaching as in the figure below:

Defining the skill	Demonstrating the skill	Planning the lesson	Teaching the lesson	Discussion	Replaining	Reteaching	Rediscussion	Repeating the cycle
Provide knowledge and awareness of the skill to the teachers	Shown need the skill	A short or micro plan	Teach the small group	Considered feedback	Replain the lesson	Reteach another small group	Another peer group provide feedback	Achieve desired level of skill
Determine teaching behavior	Through video tape or film	Practice the skill	Observed by peer group of monitors by the supervisor	Observes film or video tap				
		Seek supervisory input	Video or audio taped in a close circuit	Reinforce his/her teaching				

Figure: 2.2 Steps involved in Microteaching

2.1.11 Phases of Microteaching

Research quoins up four phases for the procedure of Microteaching (Singh 2007).

i. **Knowledge acquisition**

Observation derived from analysis and discussion of the demonstrated skill.

ii. **Skill acquisition**

Preparing and practicing the skill in the process of teaching.

iii. **Transfer**

Transfer of skill to actual class or similar situations.

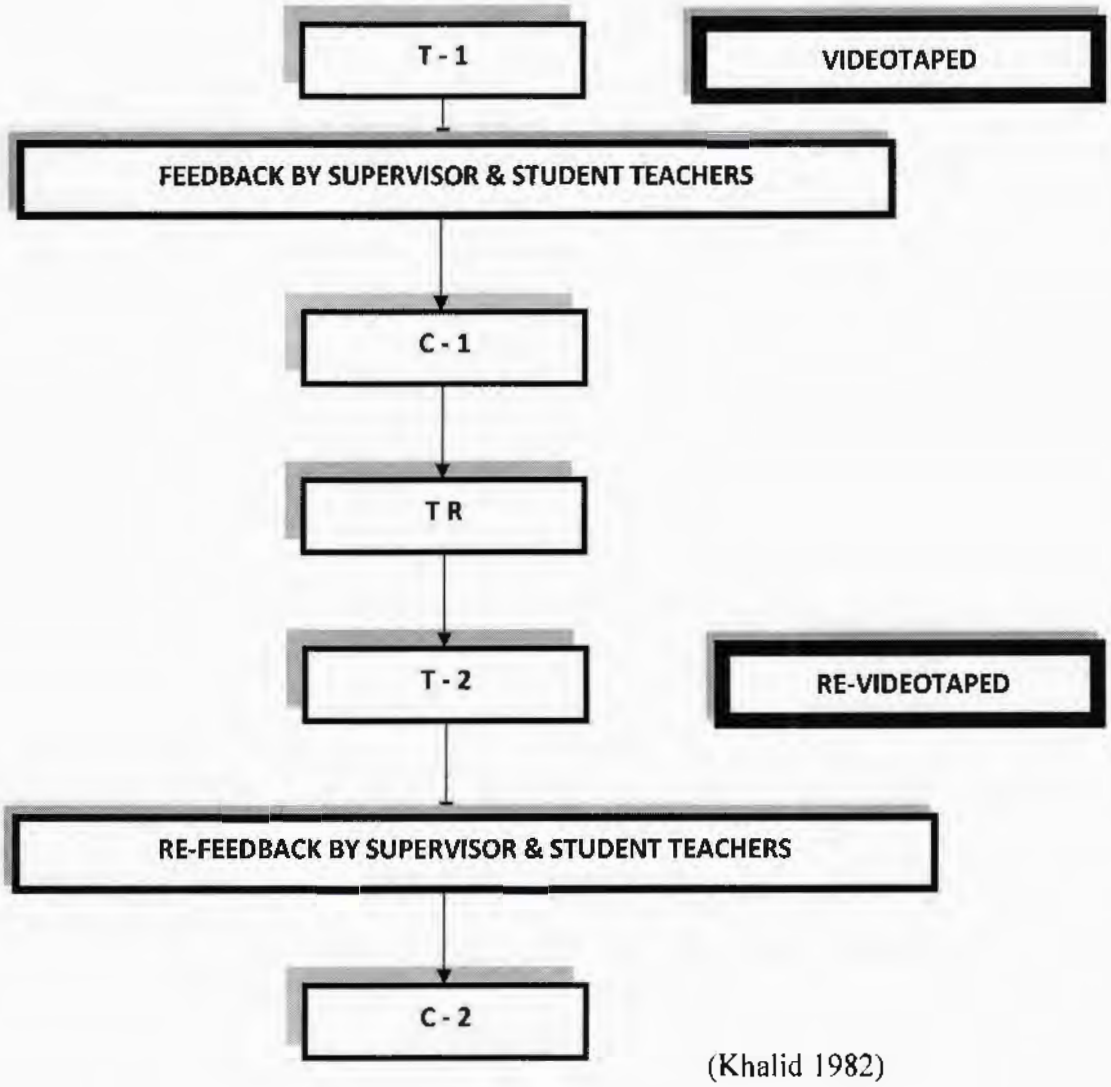
iv. **Conclusion**

Thus, Microteaching involves five R's:

Recording, Reviewing, Responding, Refining and Redoing.

2.1.12 How Microteaching Works?

Khalid (1982) illustrated microteaching procedure to improve teacher's competence in the use of a particular skill. This is graphed below:



(Khalid 1982)

Figure 2.3 Khalid's Microteaching Model (1982)

T-1 stands for teaching skill 1

C-1 stands for first critique

TR stands for training repeat

T-2 stands for teaching skill practice again

C-2 stands for second critique from observers' side

The teacher takes some students small in numbers, teaches them a comprehensive lesson and tries to highlight a relevant teaching skill (T-1). The

teacher or student teacher with some kind of supervision, views the videotape of his/her performance and then he receives feedback on how successfully he/she performed the teaching skill (C-1). The teacher has a block of time to plan his/her next lesson, incorporates the feedback from his previous teaching lesson, or receives training (TR). He/she then takes another students' group and teaches them a lesson again to improve his previous use of the skill (T-2). Again he receives feedback by watching the videotape of his second teaching performance, again with some kind of supervision (C-2). The sequence of teaching, critique and training can be repeated as many times as necessary to bring the teacher up to the standard of performance of the skill being measured.

Thus, microteaching consisted of sequence plan-teach-observe including Critique----------Replan----------Reteach----------Reobserve.

Each cycle put to the practice of one component skill. Lectures and skill demonstration are given to the student teachers prior to the practice of skill. There have many variations on the original Stanford Model. The model used at the New University Ulster is Plan-----Teach-----Observe. How does this approach functions? In microteaching, the prospective teacher in the classroom teaches short lesson, duration of this lesson is 6-10 minutes. The size of class is 5 to 10 person. This lesson is very specific and to the point focuses only one specific teaching skill. Teaching is not a very simple thing; it is considered a complex phenomenon. Teaching is a combination of more than one teaching skills and each teaching skill has its own specific behavior for facilitation of student learning. We can define, observe, control, practice and evaluate these teaching skills. The teacher (trainee) delivers a short

lesson with the help of a single teaching skill. The lesson is videotaped, observed and followed by immediate feedback by the observers (self-observing on videotape recorder, colleagues and the supervisor). In view of comments/ criticism received, the trainee re-plans the lesson and reteaches in the same setting or to another set of pupils. It is followed again by criticism/ feedback in the same manner as done previously. If needed, this circle continues till the perfection in the specific skill. There can be many variations in using this techniques; time from three to twenty minutes can be taken, three to twelve students can be taken, pupils may be either real or peers acting as pupils; source of feedback can be self, pupils, peers as pupils, teacher-educators, videotape recording (or all).

Pringle, Dawson & Adams (2003) and Amobi (2005) made a difference between conventional and new models of microteaching in teacher education. New model of microteaching is the progressive and extended form of traditionally used version of microteaching.

2.1.13 New Microteaching Model: Simplified

In Africa and after that in china a totally upgraded format of microteaching was developed and introduced in 1980 and 1990. In developing countries the issue of unavailability of necessary technology used in microteaching format was high and for the purpose of making microteaching useful they need to depend on available technology and resources. In the beginning, for this purpose in Malawi, necessary changes were made, but microteaching was fully transformed in china and Namibia. Micro teaching method becomes an effective method to increase teaching skills in scale down teaching environment in twenty-first-century. It was Namibia where

microteaching format was reconsidered firstly for just in – service teachers because teachers were less qualified, mostly were uncertified and there were no available resources to train the teachers. It became nationally modern practice of teaching in china. Following 3 significant thoughts were emerged:

In University of Stanford, Allen (1966) was considered as one of the originator of traditional microteaching in sixties. He introduced a new model of microteaching with the addition of 2+2 formula feedback. The procedure of this formula is that trainee presents a short lesson (five minute) in front of the class to a small group of peers - numbers of participants can vary from five to twenty etc. by concentrating on specific and particular skills e. g. skill of explaining or skill of probing questions. A supervisor is also there who should have expertise in the field of teaching and microteaching specially. All procedure of microteaching is carried out like recording of small lesson by using camera, one camera is enough but we can use more than one camera preferably to view different angles of classroom and to capture action of teacher and students. After the session of trail teaches, student was asked for self-analysis and self-critique by the supervisor. Now it is the time to apply 2+2 formula. Each peer student present in the classroom gives feedback by using this formula. Each participant for the purpose of improvement in lesson gives 2 positive comments observed during lesson and 2 suggestions. During this procedure, all these events are videotaped for the purpose of maintaining of record. After necessary feedback now it is the time for reteach the same lesson of a specific teaching skill. It would also be recorded and after that again same feedback session would take place.

Role of supervisor is important here who control the discipline and other matters of the class.

The major features of this new model are as under:

Self-study groups: Role of teacher is dual in the classroom while supervising the session of microteaching, some time he or she is playing the role of teacher but sometime role of student.

The 2 + 2 evaluation protocol: In micro teaching method new skills are practiced with the help of multimedia, TV, combined training sessions, presentations etc. by the trainee teachers. The purpose of training material is to watch carefully and comment at the end of the lesson. At the end of a micro teaching short lesson taught by the trainee participants play an important role and give peer evaluation by using 2+2 protocol. It means two suggestions and two compliments. Main purpose is to motivate trainee not find his or her mistakes. The 2+2 formula is applied upon specific skills that are being practiced by the trainees in the classroom.

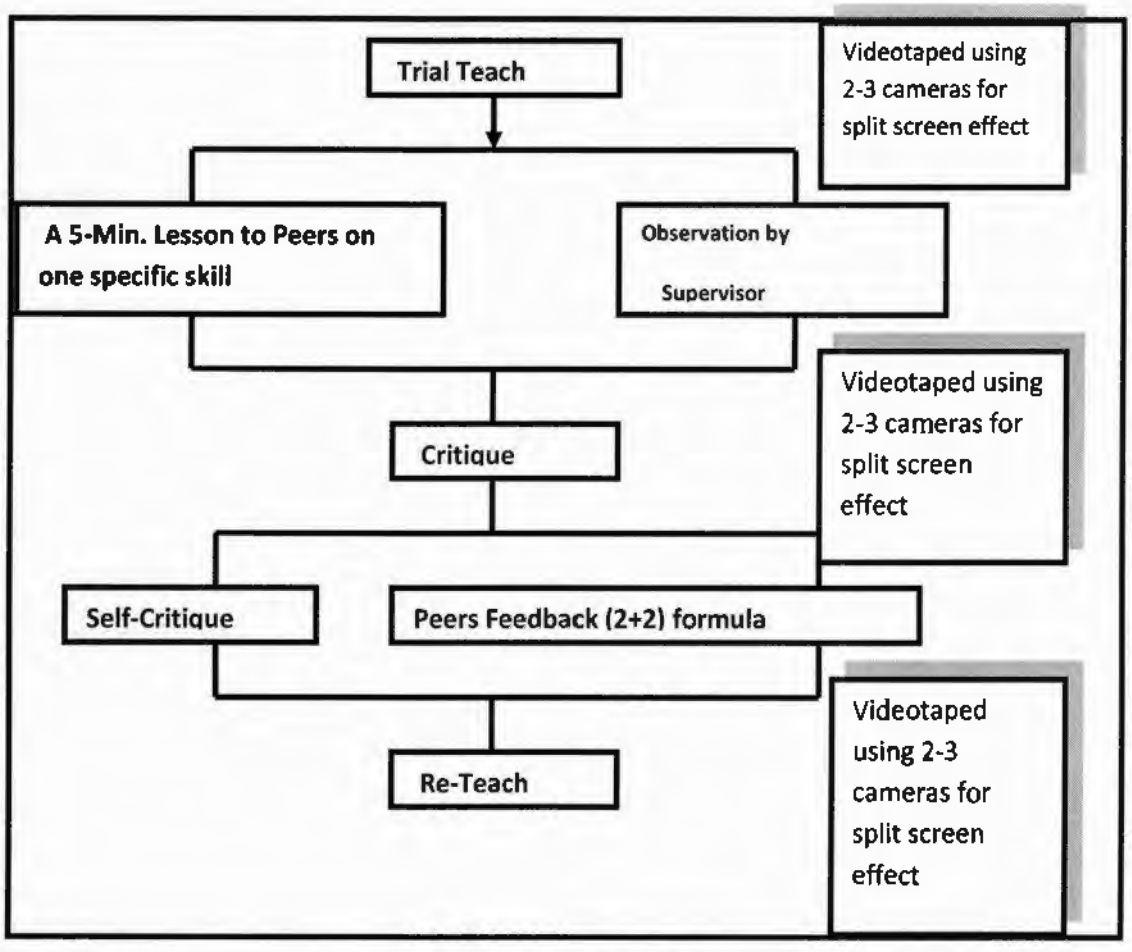
Peer supervision: Presence of a well-trained and qualified supervisor is the necessity of classroom for every lesson in this microteaching protocol. Participants of each session in microteaching give quick feedback to the trainees. And trainees accept all suggestions and compliments and feel encouragement to receive them given by the peers and supervisors. Trainees are fully allowed to reject and accept these suggestions. Lu (2010) reported in his study about the importance of peer coaching in microteaching skill development program.

In the beginning of twenty first century a simplified and new format of teaching and re-teaching protocol was adopted in abroad and all over the United

States of America. This protocol was recommended by the experts for each lesson in the classroom. The experiences of microteaching are more beneficial and more realistic as compared to formal teacher training programs. Most of the in-service and pre-service periodic teacher training programs of microteaching receive popularity. Microteaching is a program that allows flexibility for students in several ways like location, specific parts of the training and feedback procedures.

(http//education state university. com/pages/2227/Microteaching).

This new model is illustrated as in figure below:



(Allen, Dwight& Wang 1996) **Figure 2.4: New Model of Microteaching (1996)**

2.1.14 Evaluative Instruments

Satiga (2003) and Mahndiratta (2002) described that teaching skills developed through microteaching lessons could be evaluated or observed by the peers or supervisors. The rating schedule is used as criterion measure. Stanford Competence Appraisal Guide (STCAG) is the most popular evaluative instrument for assessing the effectiveness of microteaching. Allen and Ryan (1969) have given the following evaluation sheet for assessing the skill of reinforcement. This consists of four dimension of the reinforcement skill:

Rewarding correct responses: The correct responses of the students should be praised or rewarded by saying "fine, good, excellent etc.

Using nonverbal cues: To encourage his/her students the teacher should use non-verbal cues such as smile and body language.

Giving credit: The teacher should give credit to students answering a question partly correct.

Refer to positive aspects: The teacher should refer to positive aspects of student's previous responses. The observer records these four dimensions in terms of frequency if the teacher has used the category a number of times. The categories are assessed on scale ranging from three to seven points. The STCAG consists of a number of scales rating the broad aspects of a teacher's performance.

2.1.15 Aids and Apparatuses in Microteaching Procedure

Sharma & Chandra (2003) stated some more important instruments that could be used during microteaching capacity building program. They included:

- The observation schedule may be used in form of checklist questionnaire, ensuring all items to be observed.
- A cassette tape recorder used for recording the entire conversation in the classroom. It is used for appraising by supervisor.
- Use of video tape recorder having advantages of sight and sound. Fry et al. (2003) supported the practice of videotaping.
- The entire classroom program could be seen in another room and shown to the other group through Closed Circuit Television while it was taking place. Thus all the staff members and pupil teachers could see the lesson without disturbing the class with the help of Close Circuit Television.
- The entire program could be recorded with the help of a movie film that might be seen again and again.

2.1.16 Advantages of Microteaching

Studies identified microteaching diversified strategy with vast potentials. It is feasible effective and promising technique in training of teachers. Some chief benefits of microteaching technique mentioned below:

- Microteaching is a powerful device earning change of teacher behavior.
- It builds up knowledge and practice of teaching skill.
- It creates skills such as reinforcement, explanation, using board, AV aids class room management and many others are significantly treated in the lesson delivering.
- Microteaching is found useful for developing teaching efficiency in pre-service and in-service teacher education program.

- As a training devise, it improves practice, prepares better and effective teachers.
- It is individualized, each trainee uses according to his/her own pace and ability.
- It permits increase, control and regulates teaching practice.

Qureshi (2005) lists the auxiliary benefits in favor of microteaching technique as:

- Student teachers have been trained in microteaching clinics by the Stanford university team in such numbers as 150 colleges' students in eight weeks. They feel that microteaching training, required less than 10 hours per week, is likely to produce performance that is superior to college students who take more traditional course of study required more than twenty hours per week. They have discovered that about 15 to 20 minutes are required before the reteach performance after the criticism of the first teaching. Thus, the teacher trainee has time to plan meaningful changes.
- In microteaching method situations are created in a way that both supervisors and students work collectively in a practice situation. Atmosphere of the classroom may be easy, esthetic and critique may be provided on the basis of positive change to practice teaching skills.
- Microteaching is specifically designed to attain specific goals of training. These goals can be development of some specific and selected skills; development of some specific teaching techniques, to create expertise in

different materials of curriculum and to demonstrate some teaching methods.

- Micro teaching is a unique method that permits the teachers and student teachers to control over practice. In the setting of microteaching practice we can manipulate its factors like lesson plans, feedback, time constraints, supervisions and feedback methods. That's why in microteaching training programs great control over practice can be observed.
- It is stated by Peterson (2000) that microteaching offers straight and fruitful feedback for prospective teachers. Very quickly after the session of microteaching a student teacher can get immediate feedback about his or her performance. With the guidance of the supervisor, he/she analyze the aspects of his/her own performance in the light of his/her goals. The trainee and the supervisor go over student response. Efforts are made to elicit student reactions to specific aspects of his teaching. When the supervisor has audiotape available he can use audio or video play back to help the teacher about his/her performance. Immediate feedback is very necessary and put into exercise when the session of critique was held during the microteaching session.
- As microteaching focuses upon specific teaching skills it enables the supervisor and the student to approach the job in the support of mastering the teaching model, rather than trying to initiate the practiced performance of a master teacher. The appraisal of the student teaching becomes more

objective because he/she himself is involved in the appraisal of his micro-lesson.

- Microteaching is fairly effective in changing teacher behavior in the classroom. It helps in decreasing the amount of times. The teacher uses redirection, increasing the number of times the teacher uses prompting and increasing the percentage of total questions that call for higher order cognitive responses.
- Microteaching is effective in developing skill of questioning, reinforcement, silence and non-verbal cues, illustration and use of examples. It permits the command over specific skills to be demonstrated. All observable, demonsratable and quantifiable skills are within the scope of microteaching (Kumari 2005).
- Studies have conclusively proved that microteaching technique is a more active strategy to create and develop a specific and selected teaching skill among prospective teachers.
- It helps build up confidence step by step, produces continuous reinforcement to the teachers' performance and improves teaching behavior.
- Oral feedback by the supervising teacher, observation schedules filled by the peer group, audio and video tape recording provide accurate and powerful feedback.
- A microteaching laboratory appears to possess all the inherent features of the real classroom. As teaching is performed under simulated conditions

with a small peer group, the teacher trainee does not have any inhibitions (Satiga 2003).

- The trainees get many opportunities to study the desired patterns of behavior through a tape or film of teaching models or a demonstration given by the supervisor. Using these models as guides, the trainee does not have any inhibitions.
- The technique can enable each trainee to make progress in developing teaching skills at his own rate depending on his ability.
- The mechanism of feedback device can be combined with other devices such as simulated social skill training and interaction analysis that provide continuous reinforcement to the trainee's performance (Shamsi 2005).

2.1.17 Comparison with Traditional Teaching

Microteaching is a significant effort to make teacher education/ training programs more effective and meaningful than the traditional training programs by making it more scientific (Rahman, 2005). Some educators believe that the microteaching training is based on the shortcomings of the traditional teacher education program. (Klinzing & Folden 1991) and Chauhan (1995) portray a comparison between microteaching and traditional models. They described their core differences as:

Simple versus complex teaching: While microteaching is simple in context of developing the teaching skills by practicing required skill again and again. Because of technology involved in this method, it provides the teachers with a chance to be motivated. Traditional teaching is relatively complex and demanding because of one

sided and theoretical perspective (Chauhan 1995). Below mentioned points clearly endorsed the above statements about traditional teaching and microteaching;

Provide feedback: In microteaching, important feedback is provided, but in traditional teaching feedback is assumed.

Specification of objective: In microteaching the objectives are specified in behavioral terms.

Size of class: In microteaching the class is divided into small groups of five to ten pupils-teaches, in traditional teaching the class consists of fifty to hundred pupil-teachers.

Duration: In microteaching the lesson duration is five to ten minutes, but in traditional teaching the duration is forty to sixty minutes.

Pattern of classroom interaction: In microteaching patterns of classroom interaction may be objectively studies, but in traditional teaching the pattern of classroom interaction are subjectively viewed. For example in microteaching video tapping is involved and the observer and the teacher itself see his/her practice him/herself, that's why the feedback is objective and to the point in microteaching. But on the other hand in traditional teaching less opportunity of objective feedback is observed.

Practicing skill: In microteaching the pupil-teacher practices only one skill selected for practice, but in traditional teaching the pupil-teacher practices more complex teaching behavior.

Role of supervisor: In microteaching the role of supervisor is specific and well defined to improve teaching, but in traditional teaching the role of supervisor is at variance.

Awareness: In comparison to traditional teaching microteaching develops more awareness among student teacher with respect to professional training.

Score: In university examination microteaching results gain better scores than their counterparts in conventional teaching (Rahman 2004).

2.1.18 Principles Underlying Microteaching

Sharma & Chandra (2003) asserted the following principles underlying microteaching:

Principle of practice: Practice makes a man perfect is an often-quoted proverb. If activity is repeated, it is learnt effectively. Microteaching provides practice in each small task of skill for the pupil teacher.

Principle of reinforcement: Reinforcement is the hub of learning process. It involves encouraging pupils' responses and verbal praise. Accepting their reinforcement, encouragement is given to the pupil-teacher from time to time for his/her better performance with feedback for attaining the satisfaction and improvement. Reinforcement and feedback stimulate the student teacher for better teaching and learning.

Principle of experimentation: Microteaching was born in an experiment. Under the controlled situation different purposeful actions were performed in this experiment. Controlled conditions are necessary in microteaching. The prospective teachers with the help of supervisors under the controlled situations try to conduct an experiment.

Different variables like content, time, student and teaching techniques could be manipulated or controlled. Since the beginning of years the microteaching was used an authentic way of research.

Principle of evaluation: A proper evaluation of pupil-teacher's work may become an effective motivation for better learning and better teaching. The supervisor evaluates each micro lesson. In microteaching, self-evaluation is also allowed. With the help of videotape recorder the teacher trainee may evaluate his/her performance. Improvement can be made on the basis of self-evaluation.

Principle of precise supervision: The supervisor accompanying that microteaching is highly specific and precise. The supervisor pays full attention to one point at a time. Both the supervisor and teacher are clear about the aim of the micro-lesson. The supervisor possesses an observation schedule that he/she fills it while supervising. He/she marks on an assessment rating scale. Rating is a method in which the expression or opinion concerning a particular trait is systematized.

Principle of continuity: Microteaching requires continuity. The teacher learns and relearns the skills of teaching. Its unique features are: discussing- planning- teaching- feedback- replanning- reteaching till mastery is attained.

Principle of experiential learning, appreciating trainee's endeavors, self-evaluation and supervisor's observation and repetitively learns the microteaching technique make an in-service teacher effective and proficient in teaching skills.

2.1.19 Limitations of Microteaching

Intensive researches identified some limitations in Microteaching as listed below;

Cost effective: An effective microteaching system requires tape-recorder, video tapes and close circuits television application in teaching. These characteristics lead microteaching as cost-effective.

Narrow scope: As the term implies it addresses skills.

Disturb existing time-table: Microteaching disturbs the existing time - table of practicing schools by calling small groups for a few minutes.

Presentation in parts: A very small content is presented. Their integration into whole lesson becomes a complex problem.

Difficulty in actual practice: Microteaching is practiced in a class of 5 to 10 pupils. Its extension to larger classes may pose problems in reality (Chandra & Rajendra, 2004).

Veer (2004) added some more limitations about the microteaching.

- No school will readily allow having only 5 to 10 pupils for a small skill treatment.
- Lack of material resources and trained supervisors.
- Cannot be a substitute for real classroom lesson.
- Sufficient literature on microteaching is not yet available.
- Microteaching under simulated conditions does not affect the development of general teaching competence.
- Teaching cannot be broken down into subcomponents as they lose meaning in isolation and teaching is not a combination of these isolated bits.
- Teaching task is not to produce skills as an end in themselves but as means to end.

- Teaching is beyond a summation of teaching skills.
- By itself, microteaching is not a substitute for any other method, but it is just a supplement to other methods.
- In five or ten minutes a small content is presented in one microteaching session.
- It is a costly exercise beyond the affordability of common schools.

2.2 Critiques on Microteaching

Microteaching faced many critiques. Cochran-Smith & Zeichner (2005) criticized. Firstly, the research on microteaching was largely a theoretical. Some early authors of microteaching rejected the idea of a unified theory, preferring an eclectic stance and focusing on what works rather than trying to explain why. Secondly, although numerous studies of microteaching were conducted, only a small percentage found their way into peer reviewed journals. The vast majority of the researches consist of doctoral dissertations, book chapters, papers presented at conferences and technical reports. As a result, relatively little of this research went through a rigorous process of review and revision. Finally, despite the numerous studies in this area, few definitive claims can be made about the value of microteaching. Bull (2004) mentioned its drawbacks that microteaching in contrast emerged less favorable from a review of forty nine studies of different forms of teacher training. Conversely, practice with feedback combined with practice, praise or goal setting sometimes had an even stronger effect. However, an odd feature of this review is that practice with feedback is considered independently from

microteaching. This concept is showing independent position of feedback in microteaching and it has no positive link with microteaching procedure.

2.3 Pedagogical Design Capacity

Pedagogical design capacity means tutors' proficiencies and capability to identify and motivate educators' self-assets; comprehension, values, uniqueness, orientations, exterior resources of curriculum to give directions and coaching material according to teaching aims and objectives. It is linked with the procedure that educators make them busy in field experience by discussing their orientation and thinking, the teaching tools, classroom characteristics and school environment. To remain busy in useful teaching practice, various educators may need different kinds of sources and classroom situation set their comprehension, way of life and uniqueness. On the other hand, given educators orientation regarding field experience, together with their comprehension and values, they will motivate, create and utilize different resources in various ways. The pedagogical design capacity is very effective by giving a self-assessment procedure to the educators (Putnam & Borko, 2000).

The creation of instructional expertise, art and skills of practice are basically linked with the context of teaching. To increase pedagogical design capacity or teaching capability, educators need to be active and useful persons for the development of cheap and economical personal assets/resources. There are number of characteristics and necessary features of Pedagogical design capacity which are associated with activity based learning. Firstly, instructional capacity is not only linked with individual educators but a wide and broad activity system with many

other human beings, instruments and teaching apparatus. Capacity does not only mean teachers tendency to work in field experience with given suitable or adverse environment but also the whole education system of that society of which the educator is the key element (Remillard, 2005).

Use of AV aids is an important skill in effective teaching learning process. Through microteaching, skill of effective and efficient use of AV aids can be developed along with other teaching skills. It is important to give the concept of curriculum material to the prospective teachers so they can easily judge the material necessary for a specific lesson. Curriculum material is discussed below:

2.4 Curriculum Materials

Curriculum material is supportive teaching aid which is used for dealing with the content of syllabus. Course books, notebooks, charts, chalk, blackboard are the conventional syllabus material. The phrase curriculum material means a variety of syllabus resources employed by the educators to make the learners busy in classroom activities to achieve the desired curriculum goals. Classroom coaching is affected primarily by syllabus and curriculum material. The syllabus and its allied equipment are the stuff of teaching method, a detailed list of teaching aids from which the trainer picked teaching tools that is helpful for presentation and demonstration of content and evaluate the students' achievements. The general use of the phrase curriculum material is orientation of those teaching aids which are clearly made to help, train and direct the trainers and learners in classroom to comprehend different concepts. All these teaching materials are very significant in field teaching practices and planning of syllabus material used by educators. Research materials and equipments are the

supplementary resources of syllabus material. Curriculum material plays a key role to assist educators and learners in mutual tasks towards achieving of academic targets, as the course books were used in past for this purpose. The phrase curriculum material may be interchanged mostly with all other resources which are used in classroom action research. Researchers take it to submit clearly for the representation of academic resources such as teachers' diary, workbooks and course books designed for the educators and learners to achieve specific academic aims and objectives.

2.5 Research on Teachers' Use of Curriculum Materials

The link between educators and curriculum material is dynamic in which educators assess, criticize positively, adjust and endorse curriculum material according to their exceptional requirements of the learners by employing in specific context. Educators may discover to employ in curriculum materials and field teaching experience effectively through interactive circles of curriculum design. Educators' awareness and viewpoint about learners, the climate of education system, teaching material and teaching methods and techniques including their recognition and introduction of curriculum material affect the way the teachers motivate themselves and employ curriculum materials in their classrooms. These all ideas and abilities are collectively defined as teacher resources (Brown, 2002, Brown & Edelson, 2003).

Research on curriculum has been paying attention to different teachers according to their subjects (Collopy, 2003). Researcher on academic material show that eight grade educators take mathematics academic material, tenth grade educators employ science subjects' material and so on (Enyedy & Goldberg, 2004). Moreover

literature of researches suggested the structure for educator-syllabus connection (Remillard, 2005) and highlighted that the key part of academic syllabus materials or curriculum materials are helping educators' understanding and comprehension (Davis & Krajcik, 2005). While a large number of researches have brought attention to regular educators' use of English and geography curriculum materials, but a limited researches focused on prospective teachers learning through curriculum material, these researches indicates how these learning materials motivate prospective teachers (Davis, 2006).

2.6 Teachers and Curriculum Materials

Curriculum material is the fundamental element of educators' proficient practice. A continuous idea is that educators' ideas, viewpoint, comprehension, recognition and general introduction inspire the educators that how they motivate themselves, assess and adjust curriculum material to make them busy in field experience.

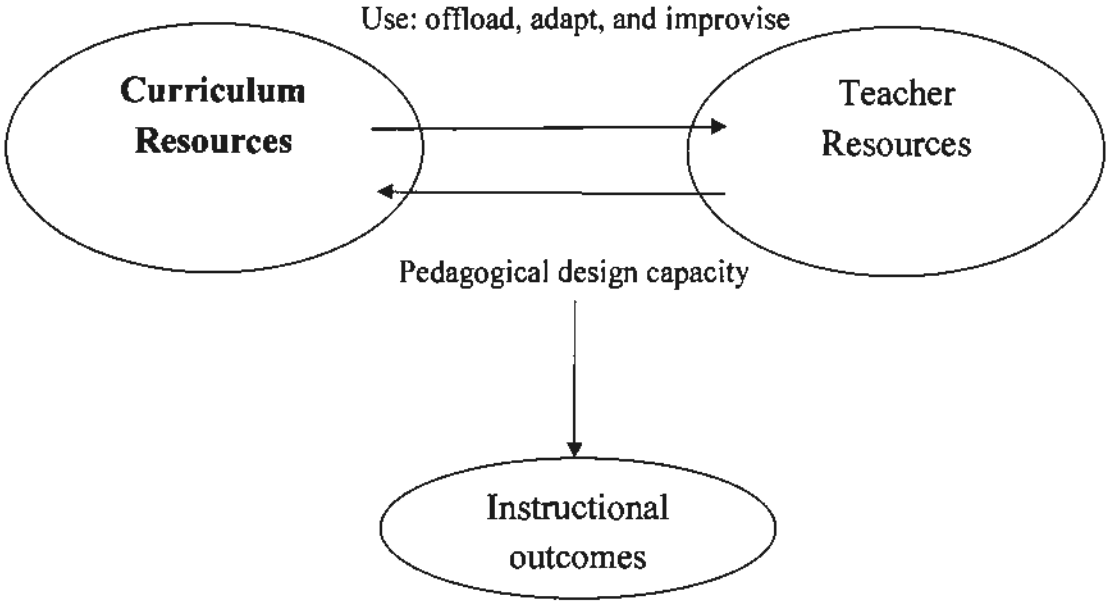


Figure 2.5: Teacher Use of curriculum material (Brown, 2009)

The link of educators and curriculum material is dynamic in which educators assess, criticize positively, adjust and endorse curriculum material according to their exceptional requirements of the learners, they employ in specific context. Educators may discover to employ curriculum materials and field teaching experience effectively through interactive circles of curriculum design. Educators awareness and viewpoint about learners, the climate of education system, teaching material, teaching methods and techniques including their recognition and introduction of curriculum material straightly affect the way, teachers' motivate themselves and employ curriculum materials in their classrooms.

While prospective teachers mostly depend on course materials they possess, it may take a lot of time and force to develop motivating supplementary academic materials (Southerland, 1999). Characteristics of academic materials may successfully help educators to design curriculum material. On the other hand academic materials separately are not sufficient (Davis & Krajcik, 2005). Collective work with other colleagues is very significant. Consequently many academic reforms contain some kind of professional development for educators for the use of innovative academic material. Field teaching experience is clearly linked and based upon different experiences.

2.7 Curriculum Materials Analysis

Educators make themselves busy in curriculum development for arrangement, instruction and in reflective practices. Educators develop both large and small range adjustments to academic material in different cycles of instruction (Drake & Sherin, 2006; Sherin & Drake, 2009). Educators develop innovative ideas, alternate lesson

plans or delete some concepts overall in the unit level. They adapt activities, teaching aids, textbooks, teaching framework and time management to make amendments in lesson plans to make them effective.

Educators remain busy in the designing of curriculum, especially for the analysis of curriculum. Firstly materials of curriculum commonly developed for broad perspective. So educators develop adjustment on the basis of targets and standards, learner's specific requirements and appropriate situations regarding education system (Brown, 2009; Pintó, 2004; Squire, MaKinster, Barnett, Luehmann, & Barab, 2003). Secondly, in science materials of curriculum consistently differ from reform based experiences (Beyer& Davis 2009; Kesidou & Roseman, 2002; Stern & Roseman, 2004). Materials of curriculum are updated by researches to help increase pupils understanding and to offer improved educational help and aid. This kind of learning and modification is the key point of the researches.

2.8 Teacher–Curriculum Materials Participatory Relationship

Educators and materials of curriculum contribute collectively in the enacted and designed curriculum (Brown, 2009; Remillard, 2005). On the other hand material of curriculum consists of subject matter for pupils to understand and activity based learning regarding different concepts. These fundamental components also consist of materials of curriculum such as historical, societal and cultural standards which specify contents and its teaching method (Wertsch, 1991). Materials, resources of syllabus manipulate how educators recite and explain content of lesson and simultaneously how they employ this in field experiences. Secondly, educators pass on their collection of experiences, dispositions, values, comprehension, learning and

capabilities (Pintó, 2004; Remillard, 1999; Squire et al., 2003). These resources support educators to bring their academic knowledge regarding material of curriculum into practice.

Educators and materials of curriculum have lively and forceful interaction with school environment and classroom in participatory affiliation (Remillard, 2005). Learners have distinctive set of thoughts, practices and possessions, developing educators' decisions regarding teaching methods and techniques (Sherin& Drake, 2009). Structure of syllabus, guidelines of education policy, and thoughts of stakeholders and expectations of education department also influence thinking of educators regarding the flexibility level for designing and setting their mind for work (Pintó, 2004; Remillard, 1999; Squire et al., 2003).

The pedagogical design capacity of educators creates educators capability to categorize and create specific resources in accumulation with the materials of curriculum in developing forceful educational practices for learners (Brown, 2009).

Educators proceed upon these educational assets by discussing the pros and cons of specific characteristics of curricular activities while getting into preferences of comprehension level, aims, objectives and classroom requirements. Educators' capabilities for teaching methods and techniques create the ways and directions to infer and appraise the materials of curriculum and eventually how the educators employ and adjust them in practical life.

2.9 Challenges to Developing Teachers' Pedagogical Design Capacity

Although pedagogical design capacity of educators plays significant part in mediating their connections with the materials of curriculum and various prospective

educators cope problems with mounting this capability. Few beginners are positive users of materials of curriculum depending a lot upon them to decide the methods and techniques of teaching (Grossman 2008 & Schwarz, 2008). Some prospective teachers have no comprehension level and skills to devise different tasks. Others look towards syllabus developers as educative as themselves directing to analyze the design of curriculum.

Few develop adaptations are partial in capacity, basically paying attention to the realistic and sentimental coaching aspect (Schwarz et al., 2008). Others teachers unintentionally alter the purpose of the innovative resources like deleting or varying fragments of content necessary for the learning leads to surface learning of pupil (Pintó, 2004; Squire et al., 2003). Because of different reasons educators require to support prospective teachers widen the capacity of pedagogical design and making them ready to be organized and systematic employers of materials.

2.10 Pedagogical Skills

Effective teaching really depends on the mastery of teaching skills. Teachers provide various lists of teaching skills based on the results of their research. Sharma (2005) portrayed that a learning skill can be defined as behavior which can be observed or the main activity that the teacher must be employ in teaching in order to effectively push the child to the point, an idea or thought. The use of the skill range both narrow as is the case when talking about the interrogation capacity, demonstration of skill, etc., and in a broader sense, when, for example, talks about the lesson plan, and organize content more meaningfully to the learner.

Passi (1976) described several important teaching skills. These are explained in the following diagram:

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Figure 2.6 Bassi'steaching skills (Kumari 2005)

Stanford University gave the list of 14 teaching skills, these are mentioned in below figure:

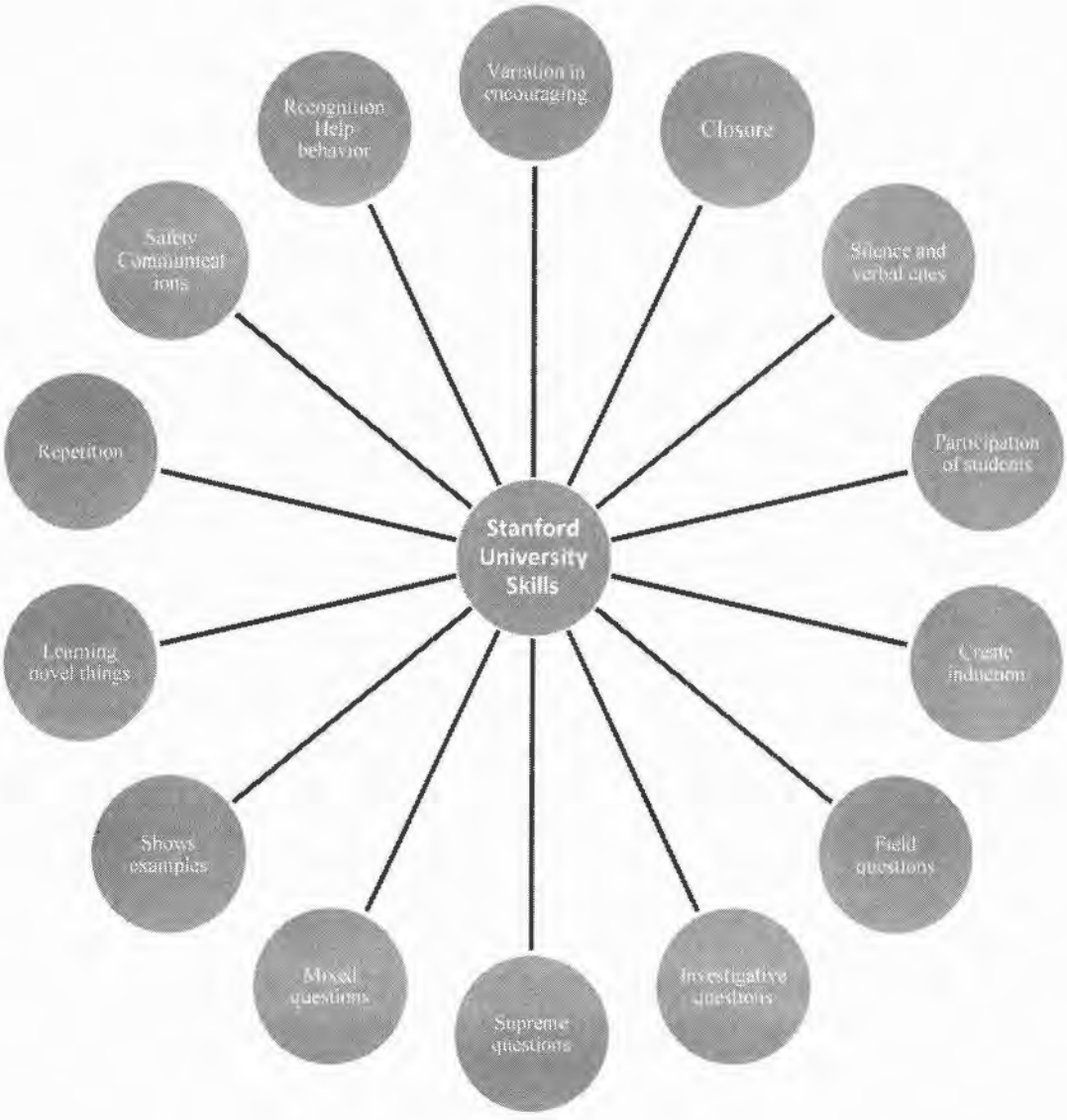


Figure 2.7Stanford University Skills (Kumari, 2005)

Another list of essential skills include:

(A) **Motivational skills**, including the promotion of student behavior stimulation, and

encouraging the establishment of values, and encouraging student participation, acceptance and support for the feelings of the students, showing warmth and enthusiasm, and the recognition of and satisfaction with the needs of students.

(B) **The presentation and communication skills**, including interpretation, drama, reading, the use of audio-visual media, encouraging students and clarity of expression.

(C) **The skills of questioning**, including the Forward and backward questions, investigation, and high-level convergent different questions, and encouraging student initiative.

(D) **The skills of a small group and individual learning,** including organizing of small workgroups, and developing independent learning, guidance and promotion of cooperative activity and interaction between the students.

(E) To **develop students 'thinking,** such as the promotion of learning consulting, and directing the discovery and development of concepts, using the stimulus, to stimulate thinking, and develop students' skill of solving their problems, motivate students to make correct judgment and for the development of critical thinking.

(F) **Evaluative skills,** this skill involves evaluation of students' achievement, difficulties in learning process, provision of solution of problems and motivates students for self-evaluation.

(G) Classroom management and discipline, which includes the recognition of the presence of non-attendance and behavior, control group performed in the classroom, and promote the mission-oriented, giving instructions, and face many problems behavior (Duncan, 1987).

2.10.1 The Meaning of Different Teaching Methods

Teaching is a complex activity. Many terms explain different facts and connotations. Some include:

Induction: This implies the introduction of the lesson and, linking the prior knowledge of learners with existing knowledge. It is known as the ability to enter the students' minds in the beginning of the lesson and this skill helps the teachers to start the lesson with more interest and passion. This is the gateway to learning. **Contrast stimulus:** It refers to change the attitudes and gestures. It initiates learning by using of body-language, posture and gestures that play a vital role in teaching learning process.

Investigation questions: It deals with the questions to be asked about any further content. This stimulates the cognitive development of students. **Clarifications:** It combines lecturing and demonstration methods. The teacher student explains concepts through examples and photos and graphics. It develops analytic abilities.

Closure: Means to finish the job. Student and teacher summarize the lesson correctly and in a manner appealing. It is called as the ability to close. In the absence of proper closure, the lesson remains ineffective and inconclusive.

Lecture: Lecture refers to covering effective width of the content by explaining it to the learners. The teachers usually use this in their classrooms combined other techniques and tactics. Sometimes, it is known as "communication skills".

Skill of Explaining: It means use of explaining to the pupils about 'What' 'Why' and 'How' regarding some facts, principles and concepts, which constitutes the skill of explaining (Veer 2004).

Use of writing board: Use of board is very essential in the class. Effective use of writing board moves the mind of learner towards effective and deep learning. Its use also needs special training. The necessary components of the board work are clarity of handwriting, legibility and rationale of the board work. It provides visual equity in learning.

Use of audio-visual aids: The use of audio-visual aids is essential to make teaching task more attractive and effective. Its use also needs a skill. Hence, the training of using audio-visual aids to the teacher is equally desirable.

Skill for class management: Various activities are performed for creating learning environment in the classroom. These combine social and educational activities. The performance of these activities needs special skill. These are characterized as management activities.

Increasing pupil participation: The teacher must encourage increasing pupil participation. Pupil participation means – pupil's direct behavior that is observable. It includes both responses and reaction of the pupils along with their own new activities.

Recognizing attending behavior: On the basis of pupil's behavior, the teacher selects his/her own activities. The teacher also decides the interesting and boring activities (Brown 1975).

Microteaching skills are essential and foundational to teaching. Some skills are commonly used and few are seldom needed. They enhance the quality of teacher's instruction. They can be learnt through studying theory and literature, practically by providing training under the guidance of expert supervisors and video tape recording. It is acknowledged that all skills are significantly effective to improve the competencies of pre-service and in-service teachers.

Following is the explanation of the foundational six skills and their essential components.

2.11 Skill of Set Induction

It implies brief and brisk introduction of the lesson. This skill links previous knowledge with the present knowledge. It is known as the skill of set induction.

2.11.1 Components of Skill

Previous Knowledge: Before starting the teaching of new content, awareness of previous knowledge of the pupil is must. Previous knowledge should concentrate on the same topic that is to be started for teaching.

Proper Sequence: While starting the lesson, coordination is must among ideas, questions and statements to be used.

Objectives and Aids: Keeping in mind the objectives of the lesson, various aids are used. Monotonous type of teaching bore the pupils. So, this boring tendency can be controlled in the pupils by selecting properly and attractive use of audio-visual aids.

Relationship between Content, Objectives and Statements: While teaching the lesson, the statement to be used must have some relationship with the new content to be taught and the content must be selected to the pre-determined objectives.

Duration of Introduction: Introduction should be neither lengthy nor too short. Its duration should restrict to the creation of interest and motivation of pupils.

2.12 Skill of Reinforcement

Learners are eager for social approval of their behavior. The teacher's expression (great, excellent, good, close to the point etc.) encourages students' participation. Also, certain non-verbal expressions, as smiling, nodding the head; and by paying attention to the responding pupil, the pupil participation in the class is maximized. The main theme of the skill is that encouraging remarks of the teacher increases and discouraging remarks decreases the pupil-participation and the development of the learning process.

2.12.1 Components of Skill

Positive -Verbal Reinforcement: These are the positive comments given by the teacher on the correct response of the pupil. These are:

(i) Using words and phrases like, "good", "very good" and excellent.

(ii) Repeating and rephrasing pupil's response.

(iii) Using pupil's idea in the development of the lesson.

(iv) Using extra-verbal cues, like "um" and "aha" to encourage pupils.

(v) Using prompts like carry on, think again etc. to help pupil give correct response.

Positive Non -Verbal Reinforcement: The teacher gives comments to pupils on their correct response without using words: This he does by nodding the head, smiling, patting, looking attentively at the responding pupil, and writing pupil's answer on the black boards. The teacher encourages pupils to participate maximally in the development of the lesson.

Negative Verbal Reinforcement: The teacher gives comments on the incorrect or partially incorrect response by telling that pupil's response is incorrect or making sarcastic remarks like "idiots", "stupid" etc. Such behavior of the teacher discourages pupil-participation and should not be used.

Negative Non -Verbal Reinforcement: The teacher shows his/her disapproval without using words. This involves, frowning, staring, and looking angrily at the responding pupil, when he gives wrong response. This type of teacher behavior creates fear in the minds of pupil and decreases pupil-participation.

Wrong use of Reinforcement: This is the situation, where the teacher does not give reinforcement when the situation is demanding encouragement.

Inappropriate use of Reinforcement: This is the situation when the teacher does not encourage the pupil with respect to quality of his response. He/she uses same type of comment for every response.

2.13 Skill of Explaining

It refers to the use of explaining or connecting learning. It connects what, why, when and how of learning new knowledge. It connects facts, principles and concepts explaining the behavioral domain of it. The ingredients are brought the understandable level of the students. It is the duty of a good teacher to explain the lesson in such a way that all things and points are clear and unambiguous in the lesson.

2.13.1 Components of the Skill

1. Beginning statement;
2. Explaining links;
3. Concluding statement;
4. Questions to test pupils' understanding;

Don'ts

5. Irrelevant statement,
6. Lacking in continuity,
7. Vague words and phrases.

Beginning Statement: In the beginning of the session of explaining this type of statement is used to create a strong sense of readiness between students that they pay full attention to the lesson to be explained. This statement include introduction of the explanation.

Concluding Statement: At the end of the session of explaining this type of statement is made. It is the summary of all the explaining content.

2.14 Skill of Probing Questions

It is both science and art. These are short questions put to pupils. It is science for evolving a system, knowledge beyond. It is art how to do it, an action oriented. The questions need to be idea based, imaginative, bother them and information seeking. Question must reach the answer level of learners. They must contribute to understanding rather create confusion in the mind of students. There are stages and phases of questions and they need continuity. It is concerned with questions to be asked about the content in more depth. This stimulates cognitive development of the pupils. It is Socratic Method as well to stimulate students' thinking and curiosity with questioning. When any teacher poses questions in the class the students may have different responses to it. Such as:

- The student is not giving any response.
- The answer may be wrong based on misconception.
- The answer they give may be partially right and partially wrong.
- The response may be correct.

Dealing with these different situations is tricky and is the essence of teaching skill regarding dealing with questions. If the students are not giving the response to the question or their response is not correct, it means they do not have the concept of the thing being discussed. Then the teacher asks further questions to check the previous knowledge so that new knowledge may be linked with it. When teacher see

the responses of students, he or she may mold the questions for creation of deep thinking skills like why questions, how questions and what question. Question skill contains not some single questions but a series of in depth question to touch creativity into students mind.

The question should be well structured, simple, concise, and grammatically correct. It should be addressed not only the one pupil but it should be addressed to all students in the class. The main objective of this skill is to develop thinking capacity among the whole class about the question that is going to be discussed. The pupils should be given some time to think and then teacher should point towards one pupil to respond.

2.14.1 Components of Skill

Prompting Technique: This technique means to go deep into pupil's response when it is incorrect or no response. Then a series of hints or prompts are given to pupil through step by step questioning in order to lead pupil to the desired correct response.

Seeking Further Information: This technique is used when response of a pupil is incomplete or partially correct. The teacher helps pupil to clarify or elaborate or explain his/her initial response by asking more small questions or creating situation in which pupil is made to think and respond.

Redirection: This technique involves asking same question from another pupil. The main purpose of this technique is to increase more and more pupil participation. When the situation is of no response or incorrect response prompting should be preferred to redirection for time saving purposes.

Refocusing: It is used when pupil's response is correct. This involves comparing the phenomena in his response with other phenomena either for similarity/difference or relationship between two situations. How one thing in point is different from the other thing? How one response of pupil is related to any other point? How one thing is similar to another thing? Such types of questions are put to the pupil.

Increasing Critical Awareness: This technique is used when the pupil's response is correct. The teacher puts higher order questions to stimulate pupil to think beyond what pupil knows. This involves the 'how' and 'why' and sometimes 'what' type of questions on the point under discussion.

2.15 Skill of Gesturing

It emphasizes body-language. It means use of appropriate gestures and positions by teacher. If a teacher does not change his gesturing and position during teaching process, the students may loss interest. Hence it is necessary to provide training to teacher in skill of changing gestures. Lesson success depends consistence students' attention during the learning process in the classroom. How we can consistently and safely get the attention of students is prime theme of this skill. Foundations of this skill are acknowledged on psychological experiments that attention of the individual tends to shift from one stimulus to other very quickly. It is very difficult for an individual to attend to the same stimulus for more than a few seconds.

2.15.1 Components of Skill

1. Movements.

2. Gestures.

3. Change in Speech Pattern.

4. Change in Interactions Style.

5. Focusing.

6. Pausing.

7. Oral-visual Switching.

Movements: Purposeful movements from the one side of the class to other side of the class, movement from black board to direct students to answer their questions, for the explanation of models, figures and charts, during the experiment for the purpose of explaining things etc. are main steps in the component of movement.

Gestures: During the teaching learning process teacher move his or her body parts specially hand and head to explain different phenomenon and topics. Especially to explain and express emotional things a teacher needs to move around indicate sizes and shapes. These gestures are more worthy and important as compared to just verbal communication.

Change in Speech Pattern: Voice is considered as an asset of teachers. Ups and down of teacher's voice and specially pitch of voice plays very important role in the actual classroom situations. Radical and sudden changes in voice speed and in volume make the teachers' point of view very clear during the presentation in the classroom and it make students attentive and interested in the classroom.

Change in Interaction Style: Two way communication or when interacting with each other by speaking and sharing their views is called that they are interacting with each other.

Focus: Sometimes teacher use the word "listen to me" "look here" "note it carefully etc. actually he or she is focusing students attention to a particular point by using this types of words. He can use verbal or gestures for this purpose. Making the statement as above mentioned is verbal focus and pointing with finger or underlining is referred to as gesturing.

Pause: In the classroom sometimes teacher may become silent for a while which is pausing. It is a tact to gain the attention of the students towards teacher. It helps create a sense of curiosity among students. This is a simple way to get attention of students.

Oral-Visual Switching: Teacher verbally explains something in the classroom and provides some information about something. It refers to oral instruction. Without saying something just showing charts, objects, models and maps from the teacher's side it refers to visual instruction or visual medium of instruction. Use of one medium is harmful for the learning of students because students may lose their attention to see one thing for a long time. Gaining student's attention is important in teaching learning process. It is the duty of teachers to get student's attention by changing the medium with the passage of time. These medium are of three types and described below:

1) Oral - oral –visual: teachers by using different types of models and charts while speaking and explains different parts of different aids actually he or she is shifting himself from oral to oral visual mode of teaching.

2) Oral - visual: with speaking and explaining different things use of globe, maps and showing objects is called shifting oral to visual. In this process he or she is going to visual.

3) Visual - oral - visual: by using the visual aids like diagrams, charts, maps and models a teacher explain and demonstrate the lesson in the classroom silently. It refers to visual oral switching.

2.16 Skill of Closure

It means to finish teaching task. When a pupil-teacher delivers lecture and concludes or ends up in a proper way in an attractive way, the skill is termed as closure skill. In absence of proper closure, the lesson remains ineffective.

2.16.1 Components of Skill

1) Selected an appropriate activity.
2) Summarized main points of the lesson so that students may understand the entire endeavor of the teacher.
3) Linked with content briefly.
4) Used evaluation of content asking some questions etc.
5) Revised the important concepts involving pupils.

(Romesh & Sharma 2005)

2.17 Researches on Microteaching

Microteaching was originally developed in the United States. Its meaningfulness was studied by the British experienced teachers, and supported the

possibility of transfer of teacher training systems (Applebee, 2006). The research and development cycle which was to structure the work, however, was only partially implemented, leaving important questions about the need for such redevelopment work unanswered.

Lederman (2006) carried out research to study the qualitative effects of the alleged mini perceptions of teaching and making educational changes in science teachers. He studied 17 teachers in training. In addition to the perception and self-criticism of the lessons videos, students received both reactions oral and written from peers and teachers. Topics to complete the reaction questionnaire to their beliefs/perceptions before the premiere and after all submissions were also requested. This study is useful for present study in terms of feedback, teachers receive from their colleagues and supervisors. This is the main element of microteaching. Above study indicated that in what ways we can utilize the feedback to improve the teachers' proficiency in a specific skill.

Gelula & Yudkowsky (2003) describe the use of standardized students (SSs) in interdisciplinary faculty development programs to improve clinical teaching skills. Standardized students are actual health professions students who are trained to portray a prototypical teaching challenge consistently across many encounters with different faculty participants. The faculty development programs described focused on the skills of providing feedback and brief clinical teaching. At the beginning of each session, each participant was videotaped in encounters with 2 different SSs. Using microteaching (an instructional method in which learners view short segments

of their own videotaped performance and discuss the tapes with a facilitator, consultant or other workshop participants), each group of participants and instructors reviewed the tapes and reflected on the encounters, providing immediate feedback to participants and modeling different approaches to the same teaching problem. The same process was repeated with more complicated scenarios after 2 weeks and again after 6 months offering reinforcement, further practice and more sophisticated development of the strategies learned. Participants completed post-session evaluations and a follow-up telephone survey. A total of 36 faculty members from the colleges of medicine, dentistry, pharmacy and nursing participated in workshops in 2000–01. The workshops were rated as highly relevant to participants' teaching, and most participants reported that they had learned a great deal. Participants most appreciated reviewing the videotaped interactions, the feedback they received, the interactions with their colleagues, the interdisciplinary nature of the groups and the practical focus of the workshops. Standardized students provide a high fidelity, low risk, simulated environment in which faculty can reflect on and experiment with new teaching behaviors. Such encounters can enhance the effectiveness and impact of faculty development programs to improve clinical teaching skills. This study is showing the importance of microteaching method. Respondents were of the view that they enjoyed videotaped interaction in which they can see their own activities again and again. This practice can help the teachers to make themselves perfect is a specific skill. Although, this study was based on clinical teaching skills but procedure of the study can be applied to in-service and pre-service teachers also.

Kpanja (2002) notices the effect of video tape on microteaching techniques that in a Nigerian setting, whether the use of videotape recordings is an effective method of teacher education prior to full-time teaching. Two groups of students were used for study. The first group was allowed to practice the skills through micro-teaching with the aid of video recording equipment. The second group practiced their own skills through micro-teaching but without the aid of video recording equipment. At the end of the study it was discovered that the group which used the video recording equipment had more significant progress in the mastery of teaching skills. This study also endorses and justifies the present study that videotape recording that is main component of microteaching is useful tool for skill development in teacher training programs. Finding of above mentioned study inspire the researchers to conduct more studies on microteaching to judge its usefulness and effectiveness in Pakistani perspective.

Rich & Hannafin (2009) observe that while video has long been used to capture microteaching episodes, illustrate classroom cases and practices, and to review teaching practices, recent developments in video annotation tools may help to extend and augment teacher self-reflection. Such tools make possible the documentation and support self-analysis using verifiable evidence as well as to examine changes in development over time. Video annotation tools offer the potential to support both the reflection and analysis of one's own teaching with minimal video editing as well as the ability to associate captured video with related student and teaching evidence. In this research paper, author compared and contrasted emerging video annotation tools and described their applications to support and potentially

transform teacher reflection. Above mentioned study was conducted to measure the effectiveness of annotation notes. Author of this paper describes that after videotaping of a small lesson use of proper feedback through annotation tools create positive impact on teacher training programs. This intervention has great impact on skills development programs and it should be included in microteaching method as an intervention.

Santagata (2009) perceives the theoretical framework, research base, structure, and content of a video-based professional development program implemented during 2 consecutive years with sixth-grade mathematics teachers from five low-performing schools. First, difficulties that teachers encountered in responding to video-based prompts during the 1st year are summarized. Problematic questions deal with teachers' (a) basic understanding of target mathematics topics, (b) knowledge of their students' understanding, and(c) ability to analyze students' work and reasoning beyond classification into right and wrong answers. Changes that were made to the program to address teachers' needs in the 2nd year are then described. These are structured around three principles for designing video-based professional development: (a) attending to content-specific understanding, (b) scaffolding analysis of student thinking, and (c) modeling a discourse of inquiry and reflection on the teaching and learning process. Findings of this study indicated that although, video tapping has its own benefits in teacher training programs but supervisor may face several difficulties in this process. These difficulties are mentioned above like; problematic questionings, understanding of math topic etc. In present study it is tried

to avoid these type of difficulties by focusing on objectives of microteaching skill development program.

Tsang (2004) makes out this case study aims to investigate the role of teachers' personal practical knowledge in interactive decision making for three pre-service non-native ESL teachers. The research question was: What role does pre-service ESL teachers' personal practical knowledge (operationalized as teaching maxims in this study) play in their interactive decisions (decisions made during teaching)? Content analysis on language learning-teaching autobiographies was carried out to map out teachers' personal practical knowledge. Interviews, observation over time, and a video-based method of eliciting introspective data were employed. The teachers' lesson plans and journals were triangulated with the other data. Findings of this study indicated that some parts of a teacher's personal practical knowledge might be competitive or conditional while being applied in particular instructional contexts and that while some new maxims start shaping during classroom teaching, some old ones are seen in a new light. Results also show that during classroom teaching, the participants have limited access to their personal practical knowledge (only about half of the interactive decisions made were guided by their personal practical knowledge). However, this played a part in informing post-active decisions (decisions made after teaching), and delayed accessibility to such knowledge nonetheless helped evaluate new maxims of teaching. Lesson planning and video tapping in involved and techniques were discussed for batter results of video tapping, that's why this study is helpful for present study.

Grossman & McDonald (2008) examined two distinct but closely related fields, research on teaching and research on teacher education. Despite its roots in research on teaching, research in teacher education has developed in isolation both from mainstream research on teaching and from research on higher education and professional education. A stronger connection to research on teaching could inform the content of teacher education, while a stronger relationship to research on organizations and policy implementation could focus attention on the organizational contexts in which the work takes shape. The authors argue that for research in teacher education to move forward, it must reconnect with these fields to address the complexity of both teaching as a practice and the preparation of teachers.

Schmidt (2004) states that yearlong qualitative study is an examination of 10 undergraduate pre-service teachers' lesson planning for the classes and/or individual lessons they taught in a university string project. Data analysis revealed that these pre-service teachers held differing views of lesson planning from each other and from their supervisor. Five themes emerged: (a) concerns about knowing how to begin to plan, (b) difficulty identifying what the children needed to learn, (c) the prominence of decisions made on the fly, (d) comparisons of thinking about teaching and planning with actual written plans, and (e) limited transfer of in-class experiences to teaching in the project. Suggestions for teacher educators include acknowledging the complex nonlinear relationship between planning skills, teaching experience, and professional knowledge; structuring guided experiences with a variety of lesson planning formats (e.g., written, mental, verbal); and maximizing opportunities for pre-service teachers to reflect on connections between their experiences as students and as teachers.

Madsen &.Cassidy (2005) mention that the purpose of this study was to examine pre-service and experienced teachers' ratings and comments on teacher effectiveness and student learning after observing videotaped music classes. Comparisons were made among experience levels of observers and between focus of attention of observation. Subjects for the study included college junior and senior music education majors who either had no practicum teaching experience (n= 26) or who had practicum teaching experiences but had not student-taught (n= 26). A third group included subjects with full-time music teaching experience (n= 26). Subjects watched two videotapes, one of an elementary music lesson with the camera focused on the teacher and one with the camera focused on the students. Subjects were asked to rate the effectiveness of teaching and student learning of both videotapes and provide a written rationale for assigning the ratings. Ratings were analyzed statistically and indicated a significant difference among groups ($p < .001$), with experienced teachers rating teachers and students lower than undergraduate subjects. Comments were categorized as relating to teacher behavior, student behavior, or other. Analyses indicated that all groups made more comments about the teacher regardless of whether they watched the teacher tape or watched the student tape. Experienced teachers were more critical in their evaluations and made more judgment statements than the undergraduate subjects did. To talratings of the teacher were significantly higher than those of the students. No differences were found due to focus of attention of observation. This study indicates about the lesson observation of teachers from students' side. When we observe a teacher in a classroom we are critically analyzing him/her. In microteaching method 2+2 formula is used for

feedback. Finding of study indicates that observers' feedback must be considered and valued by the supervisor in microteaching skill development program.

Zeichne (2007) found that examining the issue of strengthening self-study research in teacher education by consciously situating individual studies within coherent research programs on particular substantive issues. Although acknowledging the positive professional development impact of self-study on teacher educators, this article calls for more closely connecting the self-studies of teacher educators to the mainstream of teacher education research so that the voices of practicing teacher educators are incorporated into syntheses of research on particular aspects of teacher education. The article rejects the dualism of research either contributing to greater theoretical understanding or to the improvement of practice and argues that self-study research should attempt to work on both goals simultaneously.

Hussein (2006) portrays that in Africa, administrators have inadequate scholarly debates on the type of teacher education required to bring about educational and social transformation. Most of the methodologies we use to train our teachers come from abroad and are ill suited to address the continent's problems. This reflective article describes the experiences of the author and other teacher educators with Critical Practitioner Inquiry (CPI), a teacher education program born in the south of Africa to liberate teachers and teacher educators from authoritarian views of knowledge construction.CPI makes possible what Mezirow calls perspective transformation. Experience shows that CPI promotes education as a practice of freedom. This article argues that CPI encourages practitioners to sense and transform

factors that perpetuate injustice and inequality in schools, classrooms, and wider society.

Lamie (2004) describes that the literature surrounding the process of curriculum innovation and change abounds with the assumption that change is a difficult, often painful and hugely complex process. It involves educational, political, national, institutional and personal issues. It challenges the very fabric of our society, and our roles not only as professionals, but as people. This article introduces a model of change developed during a research study of Japanese teachers of English taking part in an overseas teacher-training program designed to support a major curriculum innovation. The research investigated the influence of the program, and examined a group of teachers, analyzing their changes in attitude, perceived methodology and practice before and after the in-service period. The findings demonstrated that in all cases changes towards the aims of the innovation had taken place. In the wider context, an analysis of the process of change indicated that there may be a number of interconnected areas that affect individual actions. This resulted in the development of a model of change.

Anson et.al (2003) describe that a range of strategies that can be used to promote reflection. We focus on microteaching as a vehicle for enabling students to become aware of their values, attitudes and assumptions about learning as these are enacted within microteaching. The subsequent feedback becomes a dialogue between student, peer, teacher fellow and tutor that provides different refractions of this practice and contributes to the development of reflection which we characterize in

terms of pre-critical, internalized and hypothetical thresholds. At the pre-critical threshold a practitioner concentrates on their technical competence, using trial and error or survival strategies to manage time, resources and pupils. Practitioners apply more mentally rehearsed operations to address new situations within the internalized threshold. A practitioner operating on hypothetical issues works within the hypothetical threshold and may not have experiences of events to inform hypothetical situations, but is in a position to manage uncertainty.

Schwartz, C. (2012) is of the view that use of technology in modern era cannot be avoided and it should be incorporated in modern classrooms.

Moss (1997) describes the training model employed to train trainers program. A questionnaire evaluation of the course reveals the effectiveness of the training model when compared to other training provision in postgraduate medical education. The course is seen to be very effective in raising the confidence of instructors who have little previous training in instructional methods. Identifies and discusses the successful characteristics of the course which include a high tutor: student ratio, extensive use of interactive learning strategies, continuous assessment, a focus on problem-based learning and the use of self and peer group critiquing strategies.

Wilkinson (1996) mentioned that two university professors integrate their courses to allow students to collaborate with each other in practicing new skills. The pre-service administrators provide additional feedback to the pre-service teachers on their microteaching while practicing their supervision skills. The data collected over 3 years from the pre-service teachers enrolled in their first teaching methods course

demonstrate that the pre-service teachers were assisted with their transition into teaching. From the Feedback they learned about their teaching skills, they found experienced teachers and the process of supervision as valuable to their professional growth, and shifted their perceptions of teaching. Endorsement of microteaching is reflecting in this study by using feedback in training programs. Teachers learned from the feedback given by the peer evaluators and supervisors. In the present study importance of feedback was main objective and more stress was provided to positive feedback at the end of each microteaching lesson.

Jacques (2000) suggests that video recording and play back of skills has benefits in teaching. These include alerting everyone in the group to behaviors and events that they may have failed to notice at the time of the recording. Play back, he suggests, can also prompt questions and discussion among the participants about the interactions recorded.

Minton (1997) outlines other benefits of microteaching and views the strategy as useful for allowing learners to rehearse teaching techniques on a small scale without the fear of the consequence of failure. In addition, if done in the context of small group teaching, the student can benefit from peer review and feedback.

Minardi (1999) offers a cautionary note about microteaching and video recording, when he indicates that microteaching, although potentially valuable as an educational tool must be handled sensitively and requires further research to evaluate its effectiveness.

Heaney (1991) mentions that consider some of the issues involved in staff and curriculum development with respect to science and technology. Some consideration is given to elements of in-service training that could give teachers the necessary support to carry through new knowledge and skills to the classroom. Making a start in science and technology, aspects of classroom management and the organization and provision of resources are considered within the context of teachers' personal and professional development.

Ovando (1991) portrayed that a presentation is given of the design, implementation, evaluation and follow-up of a successful faculty development program that is effectively and efficiently meeting the needs of both part-time and full-time professors at a private university in Mexico. It illustrates some features of effective programs such as presentation the theory of skills, use of variety of delivery strategies, use of variety of delivery strategies, practice in simulated and actual settings, teaching performance feedback, coaching for application, individualization, incentives for participation, and administrative support. Some advantages and disadvantages are also identified.

Above mentioned studies are describing issues related to the teacher training programs and significance for present study. Some studies are discussing about the benefits of videotaping in microteaching skill development programs, some indicating the problems faced by supervisors during feedback process and other are providing the merits and importance of feedback. But main focus of these studies was to develop teaching skills in teachers by utilizing technology and interventions that

make training programs more effective. During the experiment of present study, findings of earlier studies conducted on microteaching were critically studied and tried to avoid those factors that can be harmful for the research.

The microteaching was an effective approach of teaching offering valuable opportunities to the development of learn teaching in prospective teachers (Fernandez, 2010).

2.18 Summary and Generalizations about Microteaching from Researches

Microteaching is an effective tool of teachers' training program that can improve teaching skills of pre & in- service teachers. Microteaching may covers a range of almost all the necessary teaching skills that are used in a typical setting.

The most commonly practiced form of microteaching in teacher training is based on the Stanford model. Microteaching is a training concept that develops and accelerates the teaching skills of pre & in- service teachers. There are 21 teaching skills yet discovered. Some are considered key skills that are used in the classroom teaching. Thus, they are called core teaching skills. They are six in number that are frequently used in teaching. Microteaching technique is that a teacher takes an exercise of one specific teaching skill under the guidance of supervisor, peers and (or) videotape his performance in a laboratory classroom and then observe performance on TV screen, gets feedback from his colleagues/peers and supervisor who mentions his two good aspects and two recommendations about his performing this teaching skill. This procedure is known 2x2. This procedure lasts till the perfection in the skill is gained.

The prime objective of microteaching method is to make teacher proficient in teaching skills. It has many elements, which can be used according to the context of the training program. It necessary ingredients are pupil teachers, supervisor, peers, video tape recording camera, TV, model lessons on a particular teaching skill and laboratory classroom. Many models are used to provide training to teachers but the process is similar. This process can be classified into three stages. First stage comprises the selection of specific teaching skill, lesson planning and demonstration of skill. Second stage consists of the steps of observing the skill on TV screen, feedback by peers and supervisor. Third stage involves re-planning, re-demonstration, and re-discussion.

This is continued till the proficiency is gained. Teacher's performance is evaluated through observation scale and a close circuit television. Microteaching modifies the teacher's behavior and improves teaching practices. It is based on the drawbacks of traditional teacher education programs. It provides quick feedback and perfection in teaching skills and practical approach to learning instead of learning theories of memorization in educational training program.

A number of researches have been launched to study the effectiveness of microteaching techniques. Some distinctive and significant generalizations have been inferred from the review of the related literature and research findings, elaborated in the previous chapter. Some include:

- Pre & In-service teachers can get practical training to acquire new skills and develop professional knowledge instead of memorizing the theories. Therefore, the nature of microteaching approach is based on training

activities. Bagulia (2005) stated that it is training concept that can be applied at in-service stage for professional development of teachers.

- In-service teachers can get proficiency in several teaching skills through microteaching method. Edwards, Friedland, & Bing-You (2002) state it as learning one specific skill that microteaching is useful for practicing specific skills in a safe environment. It allows the residents to try out a number of different techniques that could be used in a single teaching context.

- Video tape recording is main element of microteaching. Fry et al (2003) stated that usually the practice is videotaped. The use of video tape recording make the observation very objective because video/audio tape recording is powerful feedback tool in microteaching process. It has significant effect on trainees. Yusuf (2006) also gave evidence based on his experimental research that it was recommended that video or audiotape techniques should be used to provide needed feedback in microteaching.

- Microteaching promotes self-evaluation among in-service teachers because the teacher himself observes his performance on the TV screen and corrects his errors. This is the basic idea of microteaching-learning by observing effective practices remained popular through the 1980s and 1990s and is still used today (Vrasidas & Glass 2002).

- Supervisor plays a crucial role in microteaching program. His main responsibility is to provide expert opinions to trainees. Pankajam (2005)

illustrated that the analysis and suggestions of a supervisor and other sources of feedback assist the trainee in restructuring the lesson.

- Microteaching approach builds up close affiliation with all the members of this program like trainees, supervisors, students, and video tape operators. This atmosphere creates several attributes as socialization, cooperation, integration, self-esteem, self-confidence, democratic ways, and mutual respect among the participants.

- Microteaching is very flexible depending upon the context. Microteaching technique can be used with or without operating video/audio tape recording, teach-re-teach cycle till perfection, use of self-observation and its absence and real students or pupil's teachers. Microteaching can construct positive attitude among teachers. (Khalid 1982)

- Microteaching can be used integrated in a subject and it can also use in many subjects like Math, Science, Social Studies and Language learning. It can also be used in many other teaching professions of Engineering, Medical and Nursing. Cochran-Smith, Feiman-Nemser, & John McIntyre (2008) describe that along with its version and variants, the teacher education technique of microteaching may well have the distinction of being the most "studied' teacher training strategy of all times.

- It is used by many teaching institutions of Pakistan as a result of findings of research. More researchers are needed in this area. It is also used for teachers training purposes in Pakistan.

Allama Iqbal Open University (AIOU) had launched a program PTOC project to provide training to a large number of teachers of microteaching techniques. The project also effectively made use of the video recording system and microteaching techniques (Duggal 2005).

In analysis of the aforesaid remarks it would be advantageous for teachers' trainees, educational planners, research scholars, and administration to familiarize them with the specific of microteaching and set up microteaching clinics for trying out new findings and results concerning effective teaching.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Design

This was an experimental study. The prime objective was to see the effect of Microteaching Method on the development of pedagogical design capacity of prospective teachers. The selection of an appropriate design for this experiment was essential. By concept, in experimental design of research, an intervention, a treatment or a strategy provided to the participants to find out the behavioral change in subjects of an experiment (Golding & Berends 2008). 'True-experiment', is a type of experimental design where the researcher has a great leverage and control over the study, mainly in the form of selecting the participants and randomly assigning participants into two or more study groups. Such randomization is monumental in reducing threats to internal validity by attempting to isolate any variations between the groups that are due to chance and not due to any given treatment performed (Leedy & Ormrod, 2010). In the present study, researcher divided both experimental and control groups randomly that's why researcher found true experimental design most suitable and utilized for this study. The essential ingredient of a true design is that the subjects are randomly assigned to treatment groups. Pre-test post-test control group design which is a type of the true experimental designs was used to conduct the study. Schematically description of this experimental design is as under:

R O_1 T O_2

R O_1 _ O_2 (Creswell, 2009; Gay, 2009)

Here,

R stands for "random assignment of subjects to groups",

O_1 stands for "Pre-test".

O_2 stands for "Post-test".

T stands for "treatment".

3.2 Target Population

The group of people that the researcher would like to generalize the results of the study is referred to population of the study. Target population referred to the population that the researcher would like to generalize (Gay, 2009). In this study, 35 elementary colleges situated in the Punjab province formed the institutional population. Thus, all the students male and female enrolled in B. Ed program was the target population of this study.

3.3 Accessible Population

Available population or accessible population is referred to the population that is realistically selected from the target population by the researcher (Gay, 2009). All the male and female B. Ed students (46) enrolled in Government College for Elementary Teachers, Saidpur Road Rawalpindi, in semester spring 2014 were the accessible population of this study.

Type of Respondents	Population
Male	19
Female	27
Total	46

Table 3.1 Summary of accessible population

3.4 Sample of the Study

Sampling is an important step in scientific method to investigate a problem and in experimental study a sample should be at least 15 participants are enough for an experimental study (Gay, 2009). All B.ED male and female students enrolled in Government College for Elementary Teachers, Saidpur Road Rawalpindi were taken as the sample of this study using universal sampling technique. In control group, 09 male and 14 female prospective teachers making a number of 23 participated. In experimental group 10 male and 13 female teachers making a number of 23 participated. So, the sample consisted of 46 regular B. Ed students. Summary of sample is as under;

Type of Respondents	Control Group	Experimental Group	Total
Male B.Ed students	09	10	19
Female B.Ed students	14	13	27
Total	23	23	46

Table 3.2 Summary of sample

3.5 Research Instruments

Following three instruments were administered;

i. General Teaching Competence Scale (GTCS) used as covariate;

ii. Microteaching Competence Observation Sheet (MCOS) used as pre and post-tests, and

iii. Questionnaire for prospective teachers to measure their attitude towards Microteaching program

A brief description of each instrument is outlined below:

3.5.1 General Teaching Competence Scale (GTCS)

General Teaching Competence Scale was administered for this study. This instrument was taken with the permission of the Tariq, 2005. It consisted very poor to excellent ranging scale that was given 1 to 7 points respectively. The General Teaching Competence Scale (GTCS) consists of five broad sections that covered all the general teaching skills. It comprised:

- **Planning** (objectives of the lesson, content selection, content organization and appropriate selection of audiovisual aids)
- **Presentation** (lesson introduction, questions, critical awareness by questions, concepts explaining, pupil's attention, cues, pupil's participation and encouragement, speed of presentation, blackboard use.)
- **Closing** (appropriate closure, linked with applying knowledge and home assignments)

- **Evaluation** (objectives achieved. Students' understanding about difficult concepts by asking step by step questioning)
- **Managerial** (Students' behavior awareness, classroom discipline)

This test was administered with the pretest to ensure the equality of respondents according to their general teaching competence.

3.5.2 Microteaching Competence Observation Sheet (MCOS)

Microteaching Competence Observation Sheet was adopted for pre and post-tests with the permission of the concerned researcher. This observation scale contained selected six teaching skills Set Induction, Reinforcement, Explaining, Questioning, Gesturing and Closure. It is spread over 1-5 scale.

3.5.3 Questionnaire for Prospective Teachers

Observation schedules and rating scales help in the critical analysis of behaviors components and training effects (Bull 2004). For analyzing the attitude of prospective teachers towards microteaching capacity building program, a questionnaire was used as research tool. The researcher utilized the Guttmann Scale. Gay (2009) describes the property of this scale that it asks respondents to agree or disagree with number of statements. It comprised on 25 statements about the microteaching capacity building program on the scale of agree or disagree.

3.6 Validity of Instruments

The constructs were gathered from the review of related literature. The validity and suitability of the instrument was approved by expert opinion. Thus,

different components of validity (face, content and concurrent) were determined collectively in terms of the objectives of the study, based on literature review followed by expert opinion.

3.7 Reliability of Instruments

Reliability of two instruments (General Teaching Competence Scale and Microteaching Competence Observation Sheet) was measured by using Cronbach's Alpha. According to Gay (2009), if items are scored in such a way e.g., 0, 1, 2, or 3, the cronbach's alpha also referred to as coefficient alpha and cronbach's coefficient alpha, can be used. Value of reliability was determined, as shown below;

Sr. No.	Instruments	Cronbach's Alpha
1	GTCS	.96
2	MCOS	.72

Table: 3.3Reliability of instruments

Reliability of third instrument (Attitude Questionnaire towards Microteaching Capacity Building) was measured by Kuder Richardson formula. The value of reliability was .74.

3.8 Procedure of the Study

The following procedure of the study was adopted;

3.8.1 Micro Teaching

Microteaching is an organized, purposeful and disciplined exercise in teaching. It provides confidence to the instructors, feedback from friends, peers and

colleagues by practicing a planned lesson and it also provides support by practicing among friend and peers. It is suggested by the researchers that microteaching lesson ideally should be conducted before the actual class to familiar the students with the procedure of videotaping and peer feedback. Microteaching is a fun way and efficient teaching method for teachers to improve the required teaching skills in a very efficient way (Arrighi, & Young, 2005).

In the present study, micro teaching was used to develop the pedagogical design capacity in prospective teachers and six core skills were selected from review of related literature. For this purpose both male and female students of B. Ed. Class were selected from Government College for Elementary Teachers. Experimental study was conducted by dividing the prospective teachers into two groups randomly. One group was taught or instructed by traditional method and other was provided laboratory treatment that was selected pedagogical design skills using micro teaching method. A common time scale of eight weeks was adapted for both groups. True experimental design was used and pretest post-test control group design was applied in the present study. For assessing the general skills of prospective teachers' a General Teaching Competence Scale (GTCS) was administered to ensure the same level of participant. But after the analysis of the scores obtained from this test, the experimental group was better than control group. So, this test was used as covariate in the present study. Microteaching Competence Observation Sheet (MCOS) observational check list was administered as pre-test to ensure the previous knowledge of participants about the pedagogical design capacity. These tests were administered 2 weeks before the experiment. Researcher conducted 2 cycles of

microteaching for acquiring the required skills in this study. After the experiment Microteaching Competence Observation Sheet (MCOS) as post-test was administered to both groups to measure the development of pedagogical design capacity in group A (Treated group) through micro teaching. Table given below gives the picture of both groups, following pre, post-test treatment.

Groups	Number of participant	Pre-test	Treatment	Post-test
Treated group	23 (Randomly selected)	MCOS / GTCS	Treatment with micro teaching	MCOS
Control group	23 (Randomly selected)	MCOS / GTCS	Traditional teaching	MCOS

Table 3.4: Pretest Post-Test Control Group Design

3.8.2 Procedure of Microteaching

Following was the step wise procedure of microteaching method involved in the present study;

- Defining the skill

  The subjects were provided the knowledge and awareness of teaching, a particular skill in terms of teaching behavior.

- Demonstrating the skill

The researcher demonstrated the specific skill and showed through video-tape. The trainees observed application of the skill in real world of teaching.

- Planning the lesson

It was formed a teaching plan of a short (micro) lesson with the time duration of 5-6 minute. It was practiced with the help of the supervisors. It started with the preparation of a teaching lesson from the participant side. Then the participant who is presenting the lesson gave the objectives of his presentation. Other participations of the class were given the specific points to be focused during the lesson.

- Teaching the lesson

The prospective teachers taught the lesson to a small group of pupils. The teaching was observed by the supervisors and peers. Videotape was televised at close circuit television.

- Discussion

Teaching the lesson was followed by discussion. It provided feedback to the trainee. The videotape or audiotape was played so that the trainee could observe his/her own teaching strategy. The awareness of prospective teachers' own teaching performance provided the reinforcement to the pupil teaching.

- Re-planning

The prospective teacher re-planned the lesson in order to practice the small skill effectively in the light of discussions and suggestions.

- Re-teaching

This re-planned lesson was re-taught to a group of students of same class for the same duration to practice the same skill.

- Re discussion

The teaching was now followed by subsequent discussion for formulating suggestions and encouragement to the teaching performance. The feedback was again provided to the trainee.

- Repeating the cycle

After the end of re-discussion phase, the cycle was repeated twice or thrice till the achievement of the desired level of skill.

3.8.3 Microteaching Model

Selection of a model was a tough task. But according to the local requirement, the following model was developed for microteaching capacity building program in consultation of the supervisor of the study. It comprised the following steps:

1. Every trainee teacher prepared a lesson plan of five minutes of one teaching skill which was selected from the manual book.
2. The trainee teacher performed this prepared skill in front of the small class of students and digital camera telecasted the session.
3. Supervisors and teachers were watching this trainee's performance.
4. When the first circle was over, the trainee teacher was provided feedback about his presentation by the following as:

- Firstly, the segment displayed in the TV screen. The trainee teachers himself observed his demonstration and observed the deficiencies. Self- analytical approach was also adopted through this process among teachers.

- Secondly, his colleagues also observed his demonstration and pointed out about his performance by using the 2+2 protocol formula (it included two compliments and two suggestions about his presentation, as concluded by Allen, Dwight & Wang (1996).

- Thirdly, observers articulated his comments about trainee's performance.

5. After this segment of discussion, re-planning and re-teaching of the lesson proceeded to re-discussion. The practice lasted twice or thrice till the attainment of the teacher's perfection in one specific skill.

This microteaching model is graphically sketched out as below:

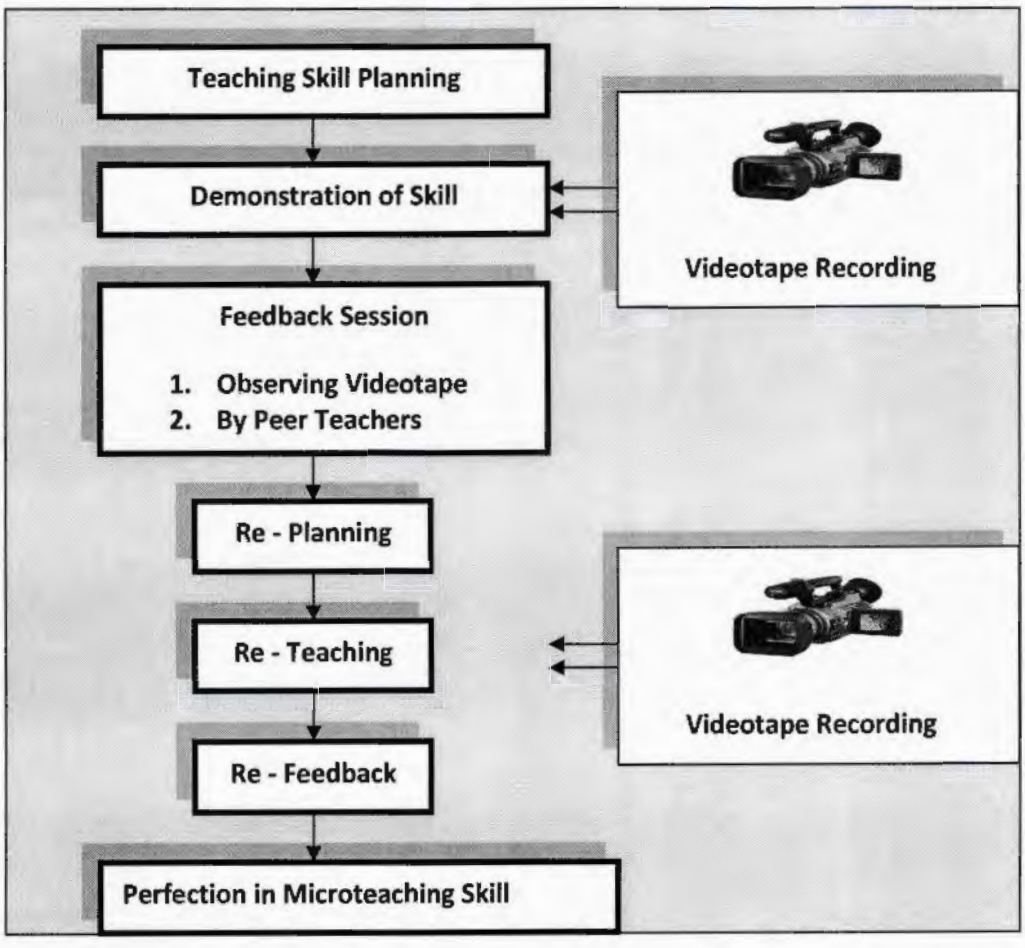


Figure 3.1: Model of Microteaching

(http//education state university. com/pages/2227/Microteaching)

The above diagram is showing the procedure of micro teaching that is new, simplified format, widely being used in the United States and elsewhere. In the beginning of 21st century, it became easier for each student to teach and reteach each lesson in the classroom with recommended and with full protocol. Microteaching was found an effective and its experiences were more effective as compare to other modes of training. Microteaching offers a sense of flexibility for students to follow their own schedule. Above mentioned model provides us a chance to take a microteaching

laboratory of our own interest, feedback procedure and organization of training. In fact, process is an integral part of training experiences.

3.8.4 Selection of Core Teaching Skills

List of teaching skills required for effective classroom teaching was identified through review of researchers and studies. Due to time constraint, only six teaching skills were selected under Pedagogical Design Capacity for the experiment. They included:

1. Set Induction
2. Reinforcement
3. Explaining
4. Questioning
5. Gesturing (Silence and Non Verbal Cues)
6. Closure

3.8.5 Preparation of Guidebook

The researcher prepared a manual book (English and Urdu) for prospective teachers (See Appendix "A"). An expert group approved it. This booklet encompassed concept of microteaching, the six core teaching skills, components of the skills and six model lessons (Social Studies text books of Classes 4^{th} to 8^{th}, Punjab Text Book Board Lahore) for practicing the microteaching lessons in the classroom. It was distributed among the prospective teachers on the orientation day.

3.8.6 Training of Observers

Two external observers were selected for observing both the groups. They were well qualified, well-educated and experienced teachers. Gay (2005) describes that observer need to be trained in order to have some assurance that all observers are observing and recording the same behavior in the same way. Therefore, supervisory personnel were trained before the commencement of the experiment. The components included: microteaching techniques, components of core skills, general competence scale, observation sheet, feedback procedure and their responsibilities in the experiment.

3.8.7 Threats to Internal & External Validity

Mortality is the crucial issue in internal validity. Mortality means loss of some subjects during the treatment (Creswell, 2009; Fraenkel & Wallen, 2006). In this study, it was ensured that no subject should miss the pre-test and post-test and all the subjects must answer all items. To do this, the researcher took the commitment of the participants. So the threat of mortality was catered in the study.

Location forms another ingredient. It means that location of students can affect the procedure of data collection or during the carrying out treatment in experiment (Fraenkel & Wallen, 2006). As the students had received the treatment at their parent institutes so location threat was automatically controlled during the experiment.

Instrumentation composes another threat. It means instruments of the study can cause threat and may changes the results of the study. It includes reliability and

validity of the instruments (Fraenkel & Wallen, 2006). In the present study reliability and validity of the instruments were managed before the experiment conducted. So this threat was controlled.

Testing procedure forms another threat. It means performance of students in post-test due to the scores of pre-test (Fraenkel & Wallen, 2006). In the present empirical study, time of pre-test and post-test was eight weeks and this was sufficient to control this threat.

History causes another threat. It refers to the occurrence of any sudden and unplanned procedure in the treatment that may disturb the students' responses (Gay & Airasian, 2000).Although, time period of the experiment is long and time between pre-test and post-test was eight weeks and it can cause the history threat. But during the whole time span of the experiment it was ensured that during implementation of intervention such type of disturbance could be avoided.

Another threat is maturation. It refers to change in students' behavior because of passage of time not because of treatment (Fraenkel & Wallen, 2006). The experiment of this study was eight weeks and that was not so much long time to expect any changes (physiological or other) in participants. And at the same time and in actual classroom instruments were administered to collect data for experiment and control group.

Last threat was students' attitude towards the investigation. It is also a powerful threat (Fraenkel & Wallen, 2006). To control these threat students of both groups were agreed that both treatments were equal and offered equity.

Thus, all these graded measures attempted to address the implementation threat and maintain the possibility of a fair controlled environment.

External validity threats are also kept in mind during study to ensure the control of internal validity threats. One purpose of the use of covariate in this study was to cover external validity threats.

Artificiality, reactivity and hawthorn effect was also control in this study by giving actual classroom and friendly environment in the classroom.

3.9 Data Collection

Through micro teaching skills, pedagogical design capacity was developed in prospective teachers. General Teaching Competence Scale (GTCS) was administered as covariate in the first phase of the study. This covariate helped the researcher to ensure the same attainment level of respondents in both experimental and control groups of prospective teachers. MCOS observational check list within the selected skills form pedagogical design capacity was administered as pre – test. The same MCOS was administered after the completion of eight week microteaching session to find out the variance in the results between experimental and control group. After the completion of eight week session of microteaching, a questionnaire was administered to treated group to find out their attitude towards microteaching program.

3.10 Data Analysis

To analyze the raw data obtained from this study, both descriptive and inferential purposes, SPSS 16 version was used. Analysis of covariance (ANCOVA) was used in two major ways, as a technique for controlling extraneous variables and

as a means of increasing power. Covariance is a form of ANOVA and is a statistical, rather than an experimental, method that can be used to equate groups on one or more variables. For a study based on a pre-test-post-test control group design, covariance is a superior method for controlling for pre-test differences. By using covariance, we are attempting to reduce variation in post-test scores which is attributable to another variable. Ideally, we would like all post-test variance to be attributable to the treatment conditions (Gay, 2009). In present study, a covariate GTCS was used. Hence, Analysis of Covariance (ANCOVA) was used to determine the effect of microteaching method and teaching with the traditional method when the GTCS was administered as covariate. Chi-square is a nonparametric test of significance and is appropriate when the data are in the form of frequency count occurring in two or more mutually exclusive categories e. g. tall vs. short. A chi-square test compares proportions actually observed in a study with proportions expected, to see if they are significantly different (Gay, 2009). In this empirical research, Chi-Square test was used to find out the attitude of prospective teachers towards microteaching program. t-test, Mean, percentage, frequency tables and graphs were derived from the data obtained from the sampled groups

CHAPTER 4

DATA ANALYSIS & INTERPRETATION

The main objective of this experimental study was to see the effect of microteaching method on pedagogical design skills of prospective teachers. For this purpose a sample of 46 prospective teachers enrolled in B.Ed program were equally divided into two groups; experimental and control groups on the basis of their performance in the pre-test. Experimental group was trained with pedagogical skill development program through micro-teaching method for eight weeks while the control group was engaged in teaching by using traditional method. After eight weeks of training with Pedagogical skill development program of experimental group the researcher and two other supervisors observed performance of both the groups in the classroom. Two appraisal sheets (GTCS & MCOS) were used to evaluate the performance of both the groups. An attitude scale to measure the attitude of experimental group towards microteaching skill development program was also administered.

Section "A"

For measuring the effectiveness 16 null hypotheses were constructed. Analysis of Covariance and t-test was applied to analyze the data in this section. The analysis of data is presented in the following section:

Table 4.1 (a)

Descriptive statistics on pre-tests of GTCS

Source	Mean	St. Deviation
Experimental	52.39	19.128
Control	38.96	15.248

Table 4.1 (b)

Inferential statistics on pre-tests of GTCS

	Levene's Test for Equality of Variances		Levene's Test for Equality of Variances		
	F	Sig.	*t*	*df*	*P*
Equal variances assumed	1.626	.209	2.634	44	.012
Equal variances not assumed			2.634	41.917	.012

Inferential statistics was used on pretest of GTCS. Table 4.1 shows that there was a significant difference in the mean score of experimental group (Mean = 52.39, standard deviation = 19.128) and control group (Mean = 38.96, Standard deviation = 15.248), t (44) = 2.634, p = .012. Experimental group (Mean = 52.39, standard deviation = 19.128) showed higher results than control group (Mean = 38.96, Standard deviation = 15.248), t (44) = 2.634.Prospective teachers of experimental group had more teaching competence and it is clear from Table 4.1 that experimental group performed better in General Teaching Competence Scale as compared to control group. It showed that participants of both groups were not equal in their

teaching competence that is way to control this variable GTCS was taken as covariate.

Graph 4.1: Pie graph of GTCS

Pie graph 4.1 describes the percentage value of experimental and control group with respect to GTCS test. It shows that experimental group gained higher scores (57.35%) as compared to control group (42.65%).There was a significant difference in the scores of experimental and control group, that's why GTCS was taken as covariate in this study.

Table 4.2 (a)

Descriptive statistics on pre-tests of MCOS

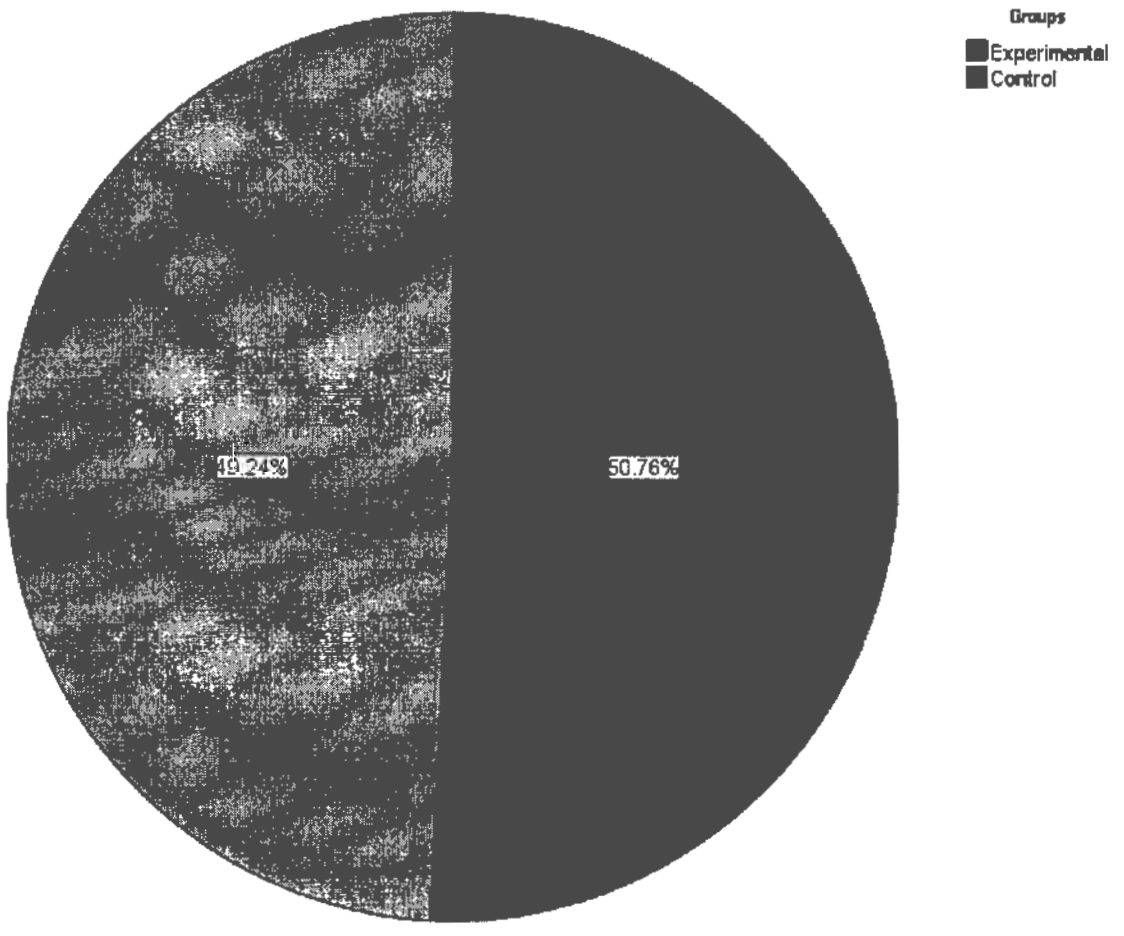
Source	Mean	St. Deviation
Experimental	55.39	7.90
Control	55.74	7.11

Table 4.2 (b)

Inferential statistics on pre-tests of MCOS

	Levene's Test for Equality of Variances		Levene's Test for Equality of Variances		
	F	**Sig.**	***t***	***Df***	***P***
Equal variances assumed	.237	.629	.745	44	.460
Equal variances not assumed			.745	43.528	.460

Inferential statistics was used on pre-test of MCOS. Table 4.2 shows that there was no significant difference in the mean scores of experimental group (Mean = 55.39, standard deviation = 7.90) and control group (Mean = 53.74, Standard deviation = 7.11), t (44) = 7.45, p = .460. Experimental group (Mean = 55.39, standard deviation = 7.90) showed equal results as control group (Mean = 53.74, Standard deviation = 7.11), t (44) = 7.45. So both groups were equal with respect to pretest.



Graph 4.2: Pie graph of MCOS

Pie graph 4.2 shows percentage value of pre-test MCOS administered to experimental and control groups. Percentage value of experimental group (50.76%) and value of control group (49.24%) showed that there was no significance difference in the scores of experimental and control groups. They performed equal in pretest.

$H_0$1: There is no significant difference in the mean scores of experimental and control groups on developing the skills of pedagogical design capacity of prospective teachers when GTCS is controlled as a covariate.

Table 4.3 (a)

Descriptive statistics on post-tests (Group)

Source	Mean	St. Deviation
Experimental	85.25	8.03
Control	66.78	5.64

Table 4.3 (b)

Inferential statistics on post-tests (Group)

	df	*F*	*P*
GTCS	1	2.228	.143
Group	1	82.023	.000
Error	43		

Inferential statistics was used on post-test results. Table 4.3 shows that there was a significant difference in the mean score of experimental group (Mean = 85.25, standard deviation = 8.03) and control group (Mean = 66.78, Standard deviation = 5.64), f (1, 43) = 82.023, p = .000. Mean scores and Standard deviation of experimental group (Mean = 85.25, standard deviation = 8.03) showed higher results than control group (Mean = 66.78, Standard deviation = 5.64). So, experimental group performed better as compared to control group in developing pedagogical skills of prospective teachers. Thus, **$H_0$1:** There is no significant difference in the mean

scores of experimental and control groups on developing the skills of pedagogical design capacity of prospective teachers when GTCS is controlled as a covariate was rejected.

Graph 4.3: Inferential statistics on post-tests (Group)

Pie graph 4.3 shows percentage value of experimental and control groups in post-test. Value of experimental group (56.08%) and value of control group (43.92%) indicates that experimental group was better in developing pedagogical skills as compare to control group.

$H_0$2: There is no significant difference between the experimental and control groups on the mean scores on teaching skill "Set Induction" when GTCS is controlled as a covariate.

Table 4.4 (a)

Descriptive statistics of set induction

Source	Mean	St. Deviation
Experimental	14.04	3.21
Control	10.83	1.58

Table 4.4 (b)

Inferential statistics of set induction

	df	*F*	*p*
Group	1	23.905	.000
GTCS	1	4.097	.049
Error	43		

Inferential statistics was used on set induction.Table 4.4 shows that there was a significant difference in the mean score of experimental group (Mean = 14.04, standard deviation = 3.21) and control group (Mean = 10.83, Standard deviation = 1.58), f (1, 43) = 23.09, p = .000. Experimental group (Mean = 14.04, standard deviation = 3.21) shows better results than control group (Mean = 10.83, Standard deviation = 1.58). So, experimental group performed better as compared to control group in developing the skill of set induction. Thus, **$H_0$2:**There is no significant

difference between the experimental and control groups on the mean scores on teaching skill "Set Induction" when GTCS is controlled as a covariate was rejected.

Graph 4.4: Pie graph of set induction

Pie graph 4.4 shows percentage value of experimental and control groups in post-test. Value of experimental group (56.47%) and value of control group (43.53%) indicates that experimental group was better in developing the skill of set induction as compared to control group.

Discussion and analysis: Above graph is showing the findings in percentage that experimental group performed better results as compared to control group. In the light

of these findings we can say that skill of set induction is developed by using microteaching method more effectively as compared to traditional method of teaching. So, microteaching method found more suitable and result oriented.

$H_0$3: There is no significant difference between the experimental and control groups on the mean scores on teaching skill "Reinforcement" when GTCS is controlled as a covariate.

Table 4.5 (a)

Descriptive statistics of reinforcement

Source	Mean	St. Deviation
Experimental	13.48	2.44
Control	11.43	1.53

Table 4.5 (b)

Inferential statistics of reinforcement

	df	*F*	*P*
Group	1	13.461	.001
GTCS	1	1.745	.193
Error	43		

Inferential statistics was used to measure reinforcement table 4.5 shows that there was a significant difference in the mean score of experimental group (Mean = 13.48, standard deviation = 2.44) and control group (Mean = 11.43, Standard deviation = 1.53), f (1, 43) = 13.46, p = .001. Experimental group (Mean = 13.48, standard deviation = 2.44) showed better results than control group (Mean = 11.43,

Standard deviation = 1.53). So, experimental group performed better as compared to control group in developing the skill of reinforcement. Thus, **$H_0$3:**There is no significant difference between the experimental and control groups on the mean scores on teaching skill "Reinforcement" when GTCS is controlled as a covariate was rejected.

Graph 4.5: Pie graph of reinforcement

Pie graph 4.5 shows percentage value of experimental and control groups in post-test. Value of experimental group (54.10%) and value of control group (45.90%) indicates that experimental group was better in developing the skill of reinforcement as compared to control group.

Discussion and analysis: Graphical view of data is presenting the findings in percentage that experimental group performed better results as compared to control group. In the light of these findings we can say that skill of Reinforcement is developed by using microteaching method more effectively as compared to traditional method of teaching. So, microteaching method found more suitable and result oriented.

$H_0$4: There is no significant difference between the experimental and control groups on the mean scores on teaching skill "Explaining" when GTCS is controlled as a covariate.

Table 4.6 (a)

Descriptive statistics of explaining

Source	Mean	St. Deviation
Experimental	14.17	2.80
Control	11.43	1.90

Table 4.6 (b)

Inferential statistics of explaining

	df	*F*	*P*
Group	1	13.526	.001
GTCS	1	.096	.758
Error	43		

Inferential statistics was used to measure explaining. Table 4.6 shows that there was a significant difference in the mean score of experimental group (Mean =

14.17, standard deviation = 2.80) and control group (Mean = 11.43, Standard deviation = 1.90), f (1, 43) = 13.52, p = .001. Experimental group (Mean = 14.17, standard deviation = 2.80) shows better results than control group (Mean = 11.43, Standard deviation = 1.90). So, experimental group performed better as compared to control group in developing the skill of explaining. Thus, **$H_0$4:** There is no significant difference between the experimental and control groups on the mean scores on teaching skill "Explaining" when GTCS is controlled as a covariate was rejected.

Graph 4.6: Pie graph of explaining

Pie graph 4.6 shows percentage value of experimental and control groups in post-test. Value of experimental group (55.35%) and value of control group (44.65%) indicates that experimental group was better in developing the skill of explaining as compared to control group. So, null hypothesis is not accepted.

Discussion and analysis: Above graph is showing the findings in percentage that experimental group performed better results as compared to control group. In the light of these findings we can say that skill of explaining is developed by using microteaching method more effectively as compared to traditional method of teaching. So, microteaching method found more suitable and result oriented.

$H_0$5: There is no significant difference between the experimental and control groups on the mean scores on teaching skill "Questioning" when GTCS is controlled as a covariate.

Table 4.7 (a)

Descriptive statistics of questioning

Source	Mean	St. Deviation
Experimental	14.78	2.77
Control	11.09	1.56

Table 4.7 (b)

Inferential statistics of questioning

	df	*F*	*p*
Group	1	26.637	.000
GTCS	1	.021	.885
Error	43		

Inferential statistics was used to measure effect of questioning. Table 4.7 shows that there was a significant difference in the mean score of experimental group (Mean = 14.78, standard deviation = 2.77) and control group (Mean = 11.09, Standard deviation = 1.56), $f(1, 43) = 26.63$, $p = .000$. Experimental group (Mean = 14.78, standard deviation = 2.77) showed better results than control group (Mean = 11.09, Standard deviation = 1.56). So, experimental group performed better as compare to control group in developing the skill of questioning. Thus, **$H_0$5:** There is no significant difference between the experimental and control groups on the mean

scores on teaching skill "Questioning" when GTCS is controlled as a covariate was rejected.

Graph 4.7: Pie graph of questioning

Pie graph 4.7 shows percentage value of experimental and control groups in post-test. Value of experimental group (57.14%) and value of control group (42.86%) indicates that experimental group was better in developing the skill of questioning as compared to control group.

Discussion and analysis: Graph is showing the findings in percentage that experimental group performed better results as compared to control group. In the light

of these findings we can say that skill of Questioning is developed by using microteaching method more effectively as compared to traditional method of teaching. So, microteaching method found more suitable and result oriented.

$H_0$6: There is no significant difference between the experimental and control groups on the mean scores on teaching skill "Gesturing (Silence and Non Verbal Cues)" when GTCS is controlled as a covariate.

Table 4.8 (a)

Descriptive statistics of gesturing

Source	Mean	St. Deviation
Experimental	14.35	2.65
Control	11.09	1.99

Table 4.8 (b)

Inferential statistics of gesturing

	Df	*F*	*P*
Group	1	17.779	.000
GTCS	1	.090	.765
Error	43		

Inferential statistics was applied to measure the effect of gesturing. Table 4.8 shows that there was a significant difference in the mean score of experimental group (Mean = 14.35, standard deviation = 2.65) and control group (Mean = 11.09, Standard deviation = 1.99), p = .000. Experimental group (Mean = 14.35, standard deviation = 2.65) showed better results than control group (Mean = 11.09, Standard

deviation = 1.99). So, experimental group performed better as compared to control group in developing the skill of gesturing. Thus, **$H_0$6:** There is no significant difference between the experimental and control groups on the mean scores on teaching skill "Gesturing (Silence and Non Verbal Cues)" when GTCS is controlled as a covariate was rejected.

Graph 4.8: Pie graph of gesturing

Pie graph 4.8 shows percentage value of experimental and control groups in post-test. Value of experimental group (56.41%) and value of control group (43.59%)

indicates that experimental group was better in developing the skill of gesturing as compare to control group.

Discussion and analysis: Above graph is showing the findings in percentage that experimental group performed better results as compared to control group. In the light of these findings we can say that skill of gesturing is developed by using microteaching method more effectively as compared to traditional method of teaching. So, microteaching method found more suitable and result oriented.

$H_0$7: There is no significant difference between the experimental and control groups on the mean scores on teaching skill "Closure" when GTCS is controlled as a covariate.

Table 4.9 (a)

Descriptive statistics of closure

Source	Mean	St. Deviation
Experimental	14.43	2.76
Control	10.91	2.27

Table 4.9 (b)

Inferential statistics of closure

	df	*F*	*P*
Group	1	22.093	.000
GTCS	1	.768	.386
Error	43		

Inferential statistics was used to the closure of the lesson. Table 4.9 shows that there was a significant difference in the mean score of experimental group (Mean = 14.43, standard deviation = 2.76) and control group (Mean = 10.91, Standard deviation = 2.27), f (1, 43) = 22.09, p = .000. Experimental group (Mean = 14.43, standard deviation = 2.76) showed better results than control group (Mean = 10.91, Standard deviation = 2.27). So, experimental group performed better as compared to control group in developing the skill of closure. Thus,**$H_0$7**: There is no significant difference between the experimental and control groups on the mean scores on teaching skill "Closure" when GTCS is controlled as a covariate was rejected.

Graph 4.9: Pie graph of Closure

Pie graph 4.9 shows percentage value of experimental and control groups in post-test. Value of experimental group (56.95%) and value of control group (43.05%) indicates that experimental group was better in developing the skill of closure as compare to control group.

Discussion and analysis: Above graph is showing the findings in percentage that experimental group performed better results as compared to control group. In the light of these findings we can say that skill of closure is developed by using microteaching method more effectively as compared to traditional method of teaching. So, microteaching method found more suitable and result oriented.

$H_0$8: There is no significance difference in the mean scores of male and female prospective teachers with respect to developing pedagogical skills when GTCS is controlled as a covariate.

Table 4.10 (a)

Descriptive statistics on post-tests (Gender)

Source	Mean	St. Deviation
Male	75.95	12.06
Female	76.06	11.47

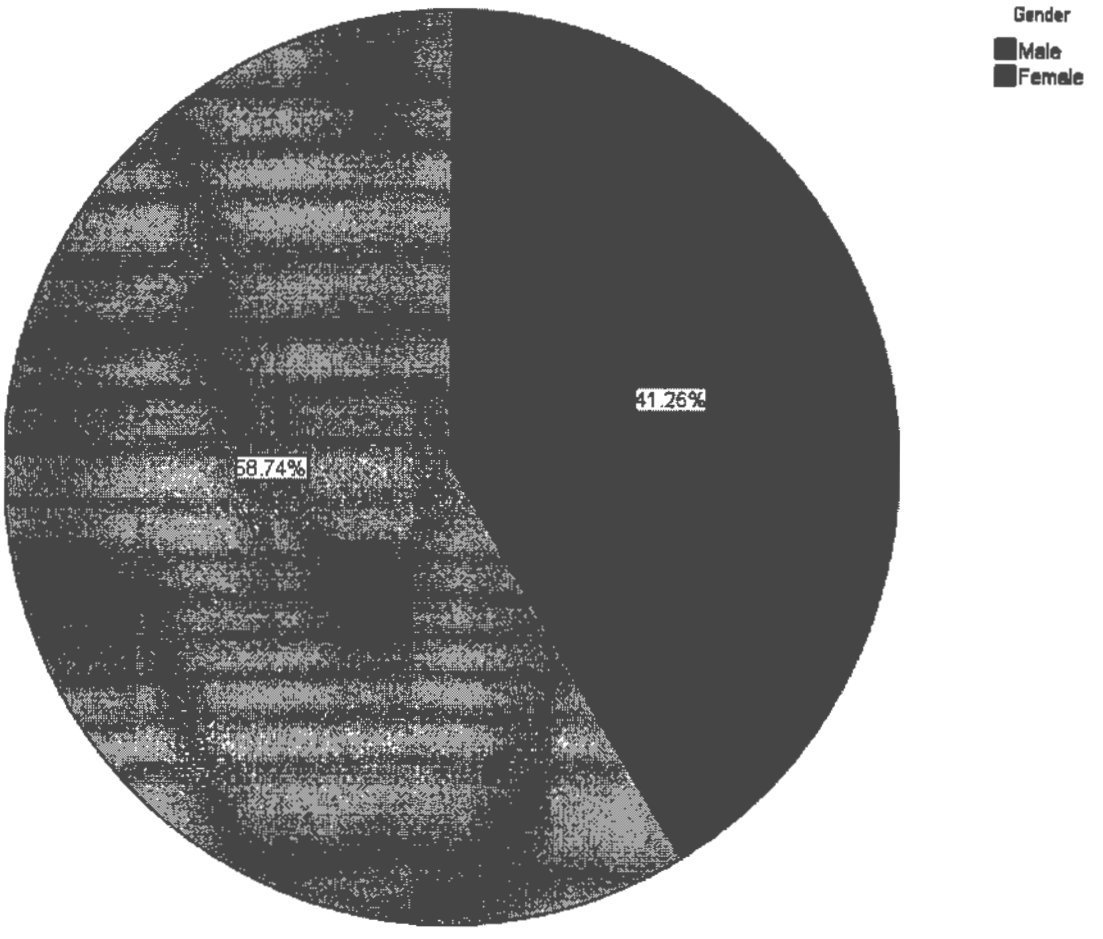
Table 4.10 (b)

Inferential statistics on post-tests (Gender)

	df	*F*	*P*
GTCS	1	1.364	.249
Gender	1	.003	.960
Error	43		

To measure gender difference in post-test, inferential statistics was used.Table 4.10 shows that there was no significant difference in the mean score of male prospective teachers (Mean = 75.95, standard deviation = 12.06) and female prospective teachers (Mean = 76.07, Standard deviation = 11.47), f (1, 43) = .003, p = .249. Male prospective teachers (Mean = 75.95, standard deviation = 12.06) showed equal results than female prospective teachers (Mean = 76.07, Standard deviation = 11.47). So, male and female prospective teachers were equal in developing

pedagogical skills. Thus, **$H_0$8:** There is no significance difference in the mean scores of male and female prospective teachers with respect to developing pedagogical skills when GTCS is controlled as a covariate was accepted.



Graph 4.10: Inferential statistics on post-tests (Gender)

Pie graph 4.10 shows percentage value of male and female prospective teachers in post-test. Value of male prospective teachers (41.26%) and value of female prospective teachers (58.74%) indicating that there was relative difference in male and female prospective teachers but no significance difference in developing the pedagogical skills as compare to control group.

$H_0$9: There is no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Set Induction" when GTCS is controlled as a covariate.

Table 4.11 (a)

Descriptive statistics of set induction

Source	Mean	St. Deviation
Male	12.32	2.81
Female	12.52	3.15

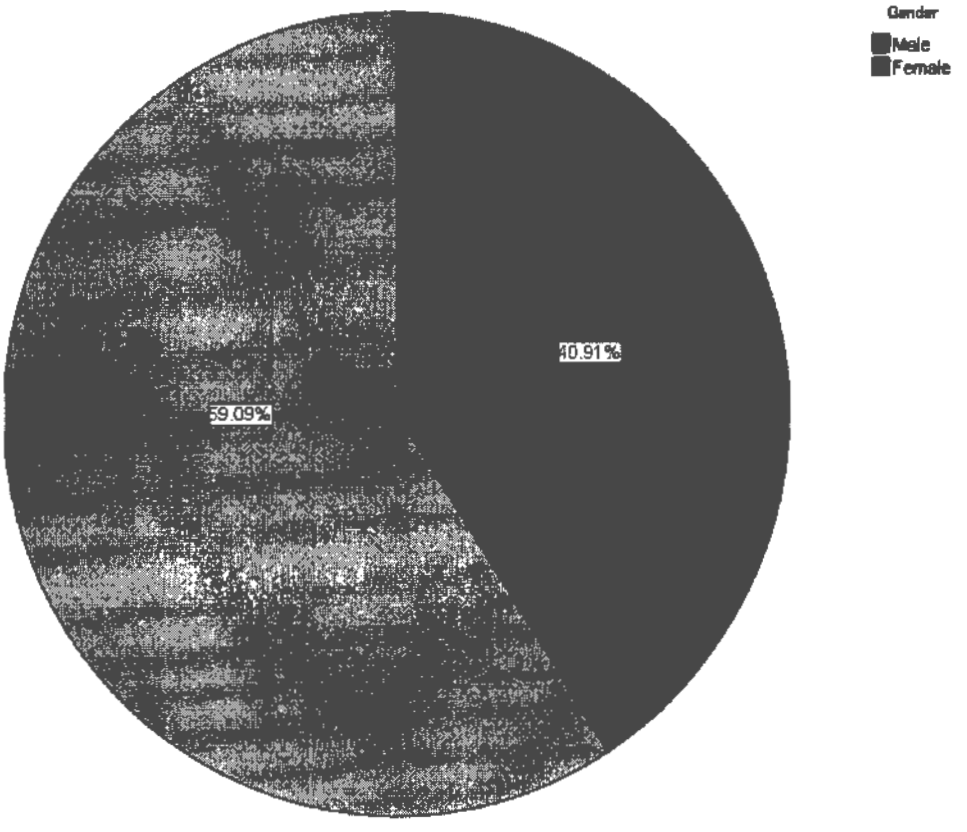
Table 4.11 (b)

Inferential statistics of set induction

	df	*f*	*P*
GTCS	1	.035	.853
Gender	1	.048	.827
Error	43		

Inferential statistics was used to measure the set induction, table 4.11 shows that there was no significant difference in the mean score of male prospective teachers (Mean = 12.32, standard deviation = 2.81) and female prospective teachers (Mean = 12.52, Standard deviation = 3.15), f (1, 43) = .048, p = .853. Male prospective teachers (Mean = 12.32, standard deviation = 2.81) showed equal results compared to female prospective teachers (Mean = 12.52, Standard deviation = 3.15) in developing skill of set induction. So, male and female prospective teachers were equal in developing the skill of set induction while GTCS was taken as covariate.

Thus, **$H_0$9:** There is no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Set Induction" when GTCS is controlled as a covariate was accepted.



Graph 4.11: Pie graph of set induction

Pie graph 4.11 shows percentage value of male and female prospective teachers in post-test. Value of male prospective teachers (40.91%) and value of female prospective teachers (59.09%) indicates that there was relative difference in male and female prospective teachers but no significance difference was observed in developing the skill of set induction as compare to control group.

Discussion and analysis: Above graph is showing little difference in the percentage of male and female participant. In percentage there is relatively some difference but no significance difference was found. So in the light of data we can say that microteaching method is equally suitable for male and female teachers in developing the skill of set induction.

$H_0$10: There is no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Reinforcement" when GTCS is controlled as a covariate.

Table 4.12 (a)

Descriptive statistics of reinforcement

Source	Mean	St. Deviation
Male	12.42	2.16
Female	12.48	2.37

Table 4.12 (b)

Inferential statistics of reinforcement

	Df	*f*	*p*
GTCS	1	.001	.975
Gender	1	.008	.931
Error	43		

Table 4.12 shows that there was no significant difference in the mean score of male prospective teachers (Mean = 12.42, standard deviation = 2.16) and female prospective teachers (Mean = 12.48, Standard deviation = 2.37), f (1, 43) = .008, p =

.975. Male prospective teachers (Mean = 12.42, standard deviation = 2.16) showed equal results with female prospective teachers (Mean = 12.48, Standard deviation = 2.37) in developing the skill of reinforcement. So, male and female prospective teachers were equal in developing the skill of reinforcement while GTCS was taken as covariate. Thus, **$H_0$10:** There is no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Reinforcement" when GTCS is controlled as a covariate was accepted.

Graph 4.12: Pie graph of reinforcement

Pie graph 4.12 shows percentage value of male and female prospective teachers in post-test. Value of male prospective teachers (41.19%) and value of female prospective teachers (58.81%) indicates that there is relative difference in male and female prospective teachers, but no significant difference was observed in developing the skill of reinforcement as compared to control group.

Discussion and analysis: Above graph is showing little difference in the percentage of male and female participant. In percentage there is relatively some difference but no significance difference was found. So in the light of data we can say that microteaching method is equally suitable for male and female teachers in developing the skill of reinforcement.

$H_0$11: There is no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Explaining" when GTCS is controlled as a covariate.

Table 4.13 (a)

Descriptive statistics of explaining

Source	Mean	St. Deviation
Male	12.37	2.71
Female	13.11	2.77

Table 4.13 (b)

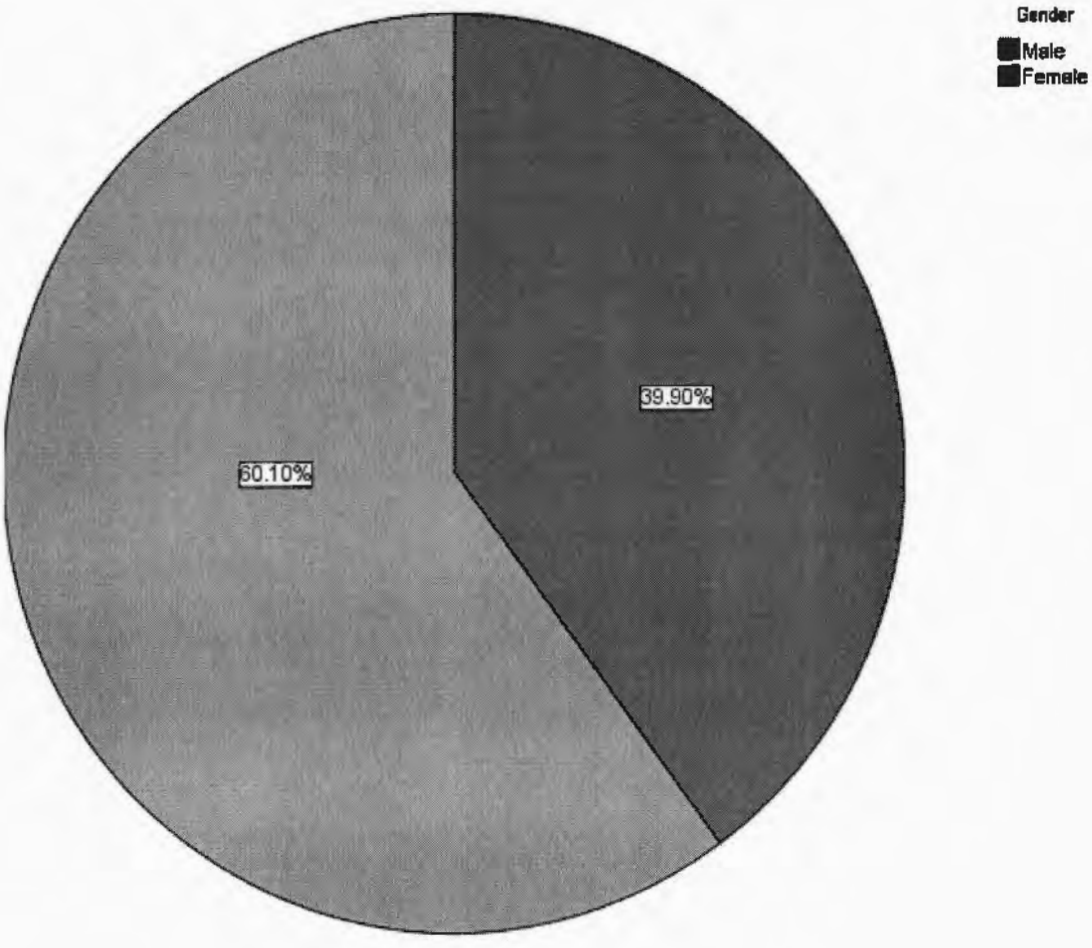
Inferential statistics of explaining

	df	*f*	*P*
GTCS	1	1.008	.321
Gender	1	.836	.366
Error	43		

Table 4.13 shows that there was no significant difference in the mean score of male prospective teachers (Mean = 12.37, standard deviation = 2.71) and female prospective teachers (Mean = 13.11, Standard deviation = 2.77), f (1, 43) = .836, p = .321. Female prospective teachers (Mean = 13.11, Standard deviation = 2.77), showed equal results to male prospective teachers (Mean = 12.37, standard deviation = 2.71) in developing the skill of explaining. So, female and male prospective teachers were equal in developing skill of explaining while GTCS was taken as covariate. Thus,

$H_0$11: There is no significant difference between the experimental and control groups

on the mean scores of male and female prospective teachers on teaching skill "Explaining" when GTCS is controlled as a covariate was accepted.



Graph 4.13: Pie graph of explaining

Pie graph 4.13 shows percentage value of male and female prospective teachers in post-test. Value of male prospective teachers (39.90%) and value of female prospective teachers (60.10%) indicating that there was relative difference in male and female prospective teachers, however no significant difference in developing the skill of explaining as compared to control group were found.

Discussion and analysis: Above graph is showing little difference in the percentage of male and female participant. In percentage there is relatively some difference but no significance difference was found. So in the light of data we can say that microteaching method is equally suitable for male and female teachers in developing the skill of explaining.

$H_0$12: There is no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Questioning" when GTCS is controlled as a covariate.

Table 4.14 (a)

Descriptive statistics of Questioning

Source	Mean	St. Deviation
Male	13.05	2.73
Female	12.85	3.07

Table 4.14 (b)

Inferential statistics of Questioning

	df	*f*	*P*
GTCS	1	2.207	.145
Gender	1	.045	.833
Error	43		

Table 4.14 shows that there was no significance difference in the mean score of male prospective teachers (Mean = 13.05, standard deviation = 2.73) and female prospective teachers (Mean = 12.85, Standard deviation = 3.07), f (1, 43) = .145, p =

.145. Male prospective teachers (Mean = 13.05, standard deviation = 2.73) showed equal results to female prospective teachers (Mean = 12.85, Standard deviation = 3.07), in developing the skill of questioning. So, both male and female prospective teachers were equal in developing the skill of questioning while GTCS was taken as covariate. Thus, **$H_0$12:** There is no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Questioning" when GTCS is controlled as a covariate was accepted.

Graph 4.14: Pie graph of questioning

Pie graph 4.14 shows percentage value of male and female prospective teachers in post-test. Value of male prospective teachers (41.68%) and value of female prospective teachers (58.32%) indicates that there is relative difference in male and female prospective teachers, however, no significant difference in developing the skill of questioning as compared to control group was found.

Discussion and analysis: Above graph is showing little difference in the percentage of male and female participant. In percentage there is relatively some difference but no significance difference was found. So in the light of data we can say that microteaching method is equally suitable for male and female teachers in developing the skill of Questioning.

$H_0$13: There is no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Gesturing (Silence and Non Verbal Cues)" when GTCS is controlled as a covariate.

Table 4.15 (a)

Descriptive statistics of gesturing

Source	Mean	St. Deviation
Male	13.42	3.27
Female	12.22	2.45

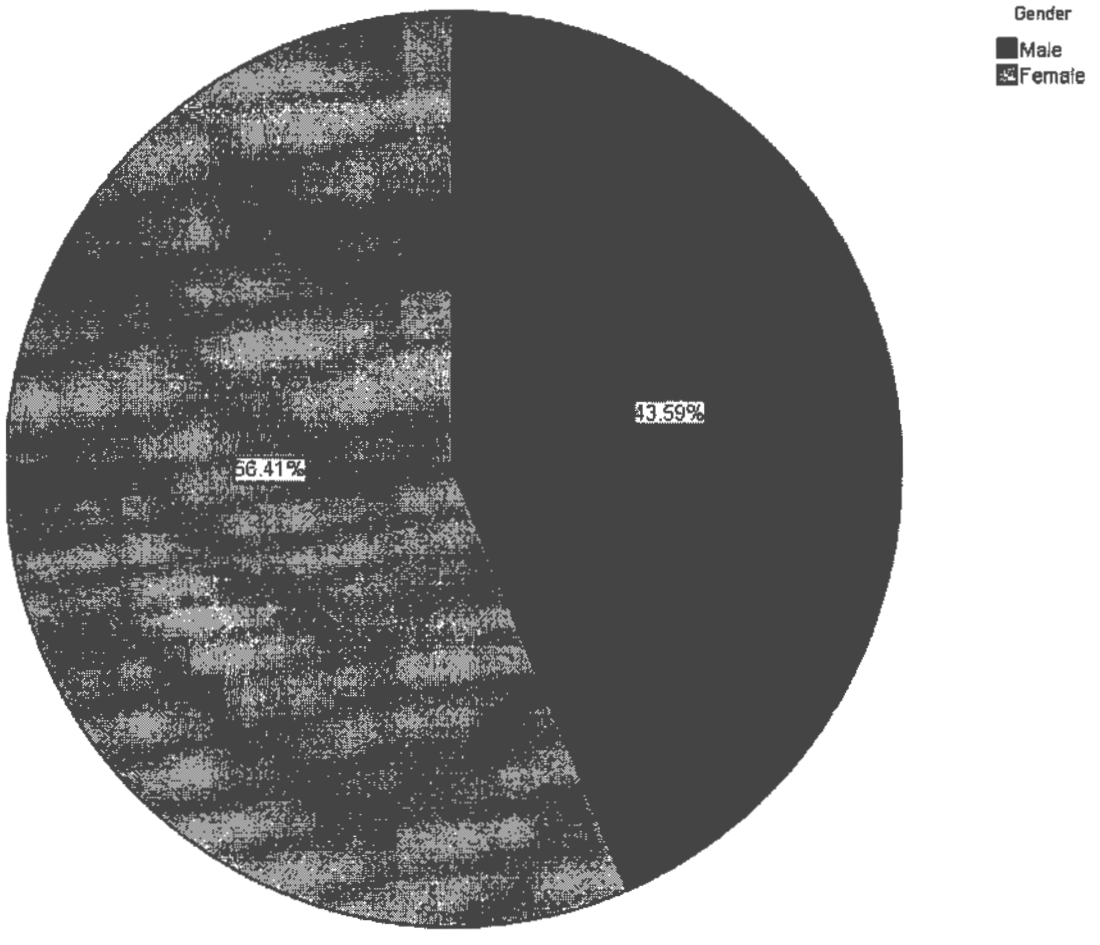
Table 4.15 (b)

Inferential statistics of gesturing

	df	*f*	*P*
GTCS	1	2.896	.096
Gender	1	2.044	.160
Error	43		

Table 4.15 shows that there was no significant difference in the mean score of male prospective teachers (Mean = 13.42, standard deviation = 3.27) and female prospective teachers (Mean = 12.22, Standard deviation = 2.45), f (1, 43) = .160, p = .96. Male prospective teachers (Mean = 13.42, standard deviation = 3.27) were equal with female prospective teachers (Mean = 12.22, Standard deviation = 2.45), in developing the skill of Gesturing. So, male and female prospective teachers were equal in developing the skill of Gesturing, while GTCS was taken as covariate. Thus,

$H_0$13: There is no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Gesturing (Silence and Non Verbal Cues)" when GTCS is controlled as a covariate was accepted.



Graph 4.15: Pie graph of gesturing

Pie graph 4.15 shows percentage value of male and female prospective teachers in post-test. Value of male prospective teachers (43.59%) and value of female prospective teachers (56.41%) indicates that there is relative difference in male and female prospective teachers, however, no significant difference in developing the skill of gesturing as compared to control group was found.

Discussion and analysis: Above graph is showing little difference in the percentage of male and female participant. In percentage there is relatively some difference but no significance difference was found. So in the light of data we can say that microteaching method is equally suitable for male and female teachers in developing the skill of gesturing.

$H_0$14: There is no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Closure" when GTCS is controlled as a covariate.

Table 4.16 (a)

Descriptive statistics of closure

Source	Mean	St. Deviation
Male	12.37	3.27
Female	12.89	2.96

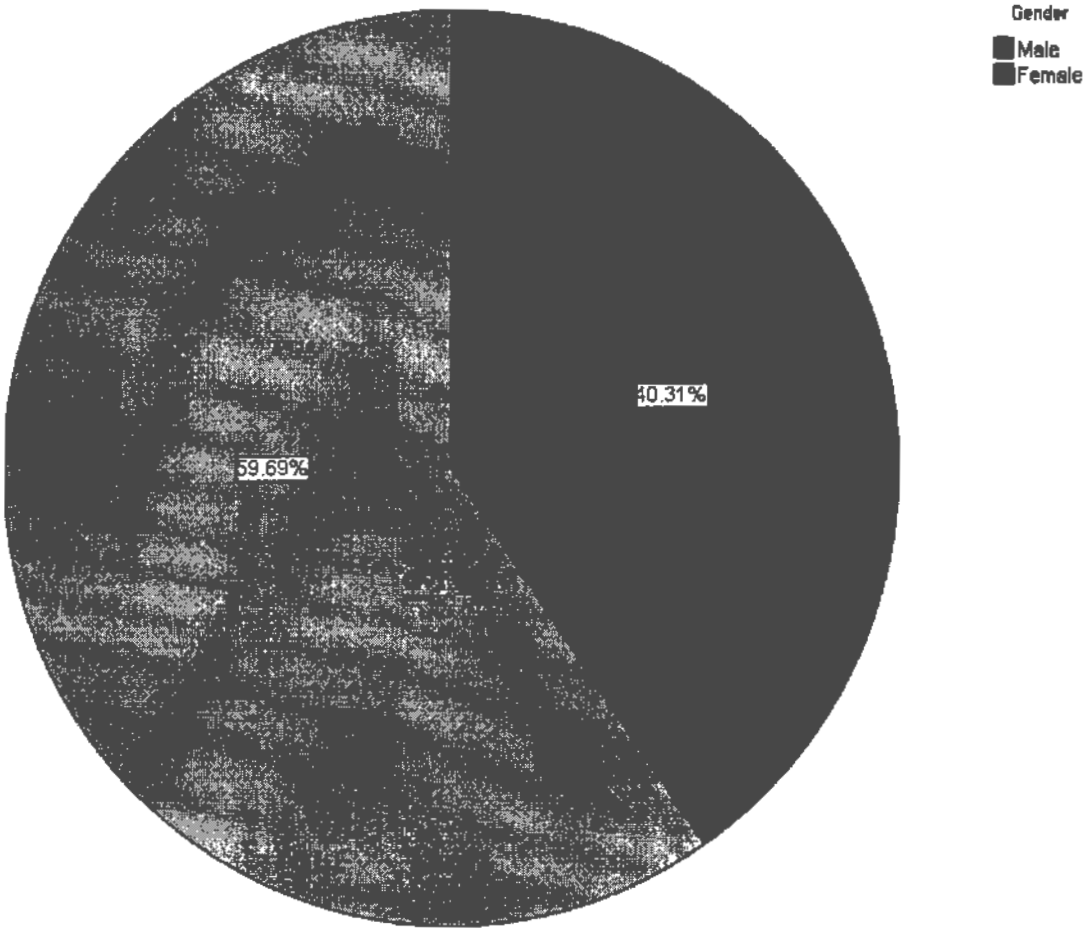
Table 4.16 (b)

Inferential statistics of closure

	df	*f*	*P*
GTCS	1	.578	.451
Gender	1	.323	.573
Error	43		

Table 4.16 shows that there was no significant difference in the mean score of male prospective teachers (Mean = 12.37, standard deviation = 3.27) and female prospective teachers (Mean = 12.89, Standard deviation = 2.96), f (1, 43) = .573, p = .573. Male prospective teachers (Mean = 12.37, standard deviation = 3.27) were equal

with female prospective teachers (Mean = 12.89, Standard deviation = 2.96), f (1, 43) = .573, p = .573 in developing the skill of closure. So, male and female prospective teachers were equal in developing the skill of closure while GTCS was taken as covariate. Thus, **$H_0$14:** There is no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Closure" when GTCS is controlled as a covariate was accepted.



Graph 4.16: Pie graph of closure

Pie graph 4.16 shows percentage value of male and female prospective teachers in post-test. Value of male prospective teachers (40.31%) and value of

female prospective teachers (59.69%) indicates that there is relative difference in male and female prospective teachers, while no significance difference in developing the skill of closure as compared to control group was observed.

Discussion and analysis: Above graph is showing little difference in the percentage of male and female participant. In percentage there is relatively some difference but no significance difference was found. So in the light of data we can say that microteaching method is equally suitable for male and female teachers in developing the skill of closure.

$H_0$15: There is no significance difference in the mean scores of male and female prospective teachers of experimental group with respect to developing pedagogical skills.

Table 4.17 (a)

Descriptive statistics of comparison of gender within the experimental group

Source	Mean	St. Deviation
Male	84.10	10.969
Female	86.15	5.113

Table 4.17 (b)

Inferential statisticsof comparison of gender within the experimental group

	Levene's Test for Equality of Variances		Levene's Test for Equality of Variances		
	F	**Sig.**	***t***	***Df***	***P***
Equal variances assumed	3.947	.060	-.599	21	.556
Equal variances not assumed			-.548	12.008	.594

Inferential statistics was used to compare male and female prospective teachers in experimental group. Table 4.18 shows that there was a no significant difference in the mean score of male (Mean = 84.10, standard deviation = 10.969 and female (Mean = 86.15, Standard deviation = 5.113), t (21) = -.599, p = .556. Male and female prospective teachers were equal in developing pedagogical design capacity and it is clear from Table 4.18. Thus, $H_0$15: There is no significance difference in the

mean scores of male and female prospective teachers of experimental group with respect to developing pedagogical skills, was accepted.

$H_0$16: There is no significance difference in the mean scores of male and female prospective teacher's attitude towards microteaching skill development program.

Table 4.18 (a)

Descriptive statistics of teachers' attitude towards microteaching

Source	Mean	St. Deviation
Male	30.10	2.28
Female	26.46	.776

Table 4.18 (b)

Inferential statistics of teachers' attitude towards microteaching

	Levene's Test for Equality of Variances		Levene's Test for Equality of Variances		
	F	**Sig.**	***T***	***Df***	***P***
Equal variances assumed	3.513	.075	5.388	21	.000
Equal variances not assumed			4.830	10.609	.001

Table 4.18 shows that there was a significant difference in the mean score of male prospective teachers (Mean = 30.10, standard deviation = 2.28) and female prospective teachers (Mean = 26.46, Standard deviation = .776), p = .000. Male prospective teachers (Mean = 30.10, standard deviation = 2.28) showed better results than female prospective teachers (Mean = 26.46, Standard deviation = .776), p = .000. So, male prospective teachers showed better attitude as compared to female

prospective teachers towards microteaching skill development program. Thus, **$H_0$15:** There is no significance difference in the mean scores of male and female prospective teacher's attitude towards microteaching skill development program was rejected.

Section "B"

For measuring the attitude of prospective teachers towards microteaching, Chi-Square statistical technique was used. The analysis of data is presented in the following section:

4.1 MCBP increases the teaching skills

Table No. 4.19

Responses of teachers showing MCBP increases the teaching skills

Option	Fo	Fe	fo – fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP increases the teaching skills.

4.2 MCBP decreases the complexities of the real classroom

Table No. 4.20

Responses of teachers showing MCBP decreases the complexities of the real classroom

Option	Fo	Fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed that MCBP decreases the complexities of the real classroom.

4.3 MCBP provide confidence

Table No. 4.21

Responses of teachers showing MCBP provide confidence to the teachers

Option	Fo	Fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP provided confidence to the teachers.

4.4 MCBP stimulates the teachers to plan the lesson

Table No. 4.22

Responses of teachers showing MCBP stimulates the teachers to plan the lesson

Option	Fo	Fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP stimulates the teachers to plan the lesson.

4.5 MCBP develop the specific skills

Table No. 4.23

Responses of teachers showing MCBP develop the specific skills

Option	Fo	Fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP developed the specific skills.

4.6 MCBP builds up analytical skill

Table No. 4.24

Responses of teachers showing MCBP build up analytical skill

Option	Fo	Fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	22	11.5	10.5	110.25	9.59
Disagree	1	11.5	-10.5	110.25	9.59
Chi-Square					19.2

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 19.2. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP builds up analytical skill.

4.7 MCBP constructs self – evident attributes

Table No. 4.25

Responses of teachers showing MCBP constructs self – evident attributes

Option	fo	Fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP constructs self – evident attributes.

4.8 MCBP presents prompt and constructive feedback

Table No. 4.26

Responses of teachers showing MCBP presents prompt and constructive feedback

Option	fo	Fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP presents prompt and constructive feedback.

4.9 MCBP generates cooperation, democratic attitude and unity

Table No. 4.27

Responses of teachers showing MCBP generates cooperation, democratic attitude and unity

Option	Fo	Fe	fo – fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP generates cooperation, democratic attitude and unity.

4.10 MCBP is an essential mean for improving education

Table No. 4.28

Responses of teachers showing MCBP is an essential mean for improving education

Option	Fo	Fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP is an essential mean for improving education.

4.11 MCBP motivates teachers to self- study and creativity

Table No. 4.29

Responses of teachers showing MCBP motivates teachers to self- study and creativity

Option	Fo	Fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP motivates teachers to self- study and creativity.

4.12 MCBP helps teachers to get acquainted with modern techniques

Table No. 4.30

Responses of teachers showing MCBP helps teachers to get acquainted with modern techniques

Option	Fo	Fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	22	11.5	10.5	110.25	9.59
Disagree	1	11.5	-10.5	110.25	9.59
Chi-Square					19.2

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP helps teachers to get acquainted with modern techniques.

4.13 MCBP and traditional teaching are equal

Table No. 4.31

Responses of teachers showing MCBP and traditional teaching are equal

Option	Fo	Fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	5	11.5	-6.5	42.25	3.6739
Disagree	18	11.5	6.5	42.25	3.6739
Chi-Square					7.34

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 7.34. Since this value was lesser than the tabulated value (9.48) at 0.05 level of significance. So, the statement was not accepted and it implied that the teachers disagreed MCBP and traditional teaching are equal.

4.14 MCBP requires the service of experienced and qualified supervisor

Table No. 4.32

Responses of teachers showing MCBP requires the service of experienced and qualified supervisor

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP requires the service of experienced and qualified supervisor.

4.15 MCBP has a little value to develop the ability of healthy criticism and tolerance

Table No. 4.33

Responses of teachers showing MCBP has a little value to develop the ability of healthy criticism and tolerance

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP has a little value to develop the ability of healthy criticism and tolerance.

4.16 MCBP partly meets the problem of real classroom

Table No. 4.34

Responses of teachers showing MCBP partly meets the problem of real classroom

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP partly meets the problem of real classroom.

4.17 MCBP provides an opportunity how to manage the classroom discipline

Table No. 4.35

Responses of teachers showing MCBP provides an opportunity how to manage the classroom discipline

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP provides an opportunity how to manage the classroom discipline.

4.18 MCBP provides teachers to employ different techniques

Table No. 4.36

Responses of teachers showing MCBP provides teachers to employ different techniques

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	23	11.5	11.5	132.25	11.5
Disagree	0	11.5	-11.5	132.25	11.5
Chi-Square					23

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 23. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP provides teachers to employ different techniques.

4.19 MCBP creates an ability to integrate all the teaching skills in one lesson

Table No. 4.37

Responses of teachers showing MCBP creates an ability to integrate all the teaching skills in one lesson

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	20	11.5	8.5	72.25	6.28
Disagree	3	11.5	-8.5	72.25	6.28
Chi-Square					12.6

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 12.6. Since this value was greater than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers agreed MCBP creates an ability to integrate all the teaching skills in one lesson.

4.20 MCBP is wastage of time

Table No. 4.38

Responses of teachers showing MCBP is wastage of time

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	11	11.5	-0.5	0.25	0.02
Disagree	12	11.5	0.5	0.25	0.02
Chi-Square					0.04

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 0.04. Since this value was less than the tabulated value (9.48) at 0.05 level of significance. So, the statement was accepted and it implied that the teachers disagreed MCBP is wastage of time.

4.21 MCBP creates boredom among teachers

Table No. 4.39

Responses of teachers showing MCBP creates boredom among teachers

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	14	11.5	2.5	6.25	0.54
Disagree	9	11.5	-2.5	6.25	0.54
Chi-Square					1.09

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 1.09. Since this value was less than the tabulated value (9.48) at 0.05 level of significance. So, the statement was rejected and it implied that the teachers disagreed MCBP creates boredom among teachers.

4.22 MCBP cannot be substitute of real classroom

Table No. 4.40

Responses of teachers showing MCBP cannot be substitute of real classroom

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	17	11.5	5.5	30.25	2.63
Disagree	6	11.5	-5.5	30.25	2.63
Chi-Square					5.26

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 5.26. Since this value was less than the tabulated value (9.48) at 0.05 level of significance. So, the statement was rejected and it implied that the teachers disagreed MCBP cannot be substitute of real classroom.

4.23 MCBP provides opportunities for developing only a few teaching skills

Table No. 4.41

Responses of teachers showing MCBP provides opportunities for developing only a few teaching skills

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	14	11.5	2.5	6.25	0.54
Disagree	9	11.5	-2.5	6.25	0.54
Chi-Square					1.09

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 1.09. Since this value was less than the tabulated value (9.48) at 0.05 level of significance. So, the statement was rejected and it implied that the teachers disagreed MCBP provides opportunities for developing only a few teaching skills.

4.24 MCBP can make perfection in the content

Table No. 4.42

Responses of teachers showing MCBP can make perfection in the content

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	16	11.5	4.5	20.25	1.76
Disagree	7	11.5	-4.5	20.25	1.76
Chi-Square					3.52

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 3.52. Since this value was less than the tabulated value (9.48) at 0.05 level of significance. So, the statement was rejected and it implied that the teachers disagreed MCBP can make perfection in the content.

4.25 MCBP is very supportive in all teaching subjects

Table No. 4.43

Responses of teachers showing MCBP is very supportive in all teaching subjects

Option	Fo	fe	fo–fe	$(fo - fe)^2$	$(fo - fe)^2/fe$
Agree	11	11.5	-0.5	0.25	0.02
Disagree	12	11.5	0.5	0.25	0.02
Chi-Square					0.04

(df = 1 Table value of Chi – Square at 0.05 significance level = 9.48)

The above table shows that the calculated Chi-Square value was 0.04. Since this value was less than the tabulated value (9.48) at 0.05 level of significance. So, the statement was rejected and it implied that the teachers disagreed MCBP is very supportive in all teaching subjects.

CHAPTER 5

SUMMARY, FIDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The quality of education mainly depends on the teachers who actually practice things in the field. The more efforts they put in, the more quality education is expected. Pedagogical skills development is central to the teacher education and professional development. The skill development of prospective teachers in the context of school improvement is the ability that enables all teachers to reach higher standards of teaching. Skill development program improves the performance of prospective teachers. Pedagogical skill development of prospective teachers has several benefits like; building the confidence of teachers, ways to better serve children, encouraging teachers to examine their pedagogical assumptions and beliefs, be able to teach effectively and supports the candidates' professional growth. This empirical research titled as "Effect of Microteaching Method on Pedagogical Design Capacity of Prospective Teachers at Elementary Level" was conducted in this prospective.

For attaining the objectives of the study 16 null hypotheses were designed. Lists of pedagogical skills were identified through review of researchers and studies. Six crucial teaching skills were selected for the experiment: research yielded that these were generally and frequently used in a classroom teaching. These included: Set Induction, reinforcement, explaining, questioning, gesturing (Silence and Non Verbal Cues) and Closure.

For testing the hypotheses on the six set of skills a sample of 46 prospective teachers of an elementary college was selected. They were randomly divided into two groups; experimental and control. Both groups had the participants having high scores and low scores accordingly. Experimental group was provided two months treatment of skill development program on microteaching method, while the control group was engaged in traditional method. After two months microteaching skill development program the researcher and two others supervisors observed performance of both the groups in the classroom. Through microteaching method pedagogical design skills were developed. General Teaching Competence Scale (GTCS) was administered as covariate in the first phase of the study. This covariate helped the researcher to cover the validity threat of experiment caused by teaching experience in past. MCOS observational check list within the selected skills form pedagogical design capacity was administered as pre – test, the same MCOS was administered after the completion of 8 week microteaching session to find out the variations in the results between experimental and control groups. After the completion of 8 week session of microteaching prospective, a questionnaire was also administered to treated group to find out their attitude towards microteaching program.

Data was collected before and after experiment. Analysis of data was carried out, using both descriptive and inferential statistics. Analysis of Covariance (ANCOVA) was used to determine the effectiveness of microteaching method and teaching with traditional method, whereas the GTCS was administered as covariate. Chi-square, means, percentage, frequency tables and pie graphs were drawn for the

data obtained from the subjects. After analyzing the data experimental group performed better as compared to control group. So, microteaching method remained effective as compared to traditional method. Attitude of prospective teachers were positive towards microteaching but, male prospective teachers' attitude was more positive as compared to female prospective teachers.

5.2 Findings

Analysis of the data yielded following main results:

1. It was found that experimental group (Mean = 52.39, standard deviation = 19.128) showed significantly better results than control group (Mean = 38.96, Standard deviation = 15.248), t (44) = 2.634, p = .012. It showed that participants of both groups were not equal in their teaching competence that is way to control this variable GTCS was taken as covariate (Table 4.1).

2. Both experimental (Mean = 55.39, standard deviation = 7.90) and control group (Mean = 53.74, Standard deviation = 7.11, t (44) = 7.45, p = .460 showed non-significant results in MCOS used as pre-test in this study. So both groups showed equal performance with respect to pre-test (Table 4.2).
3. Experimental group (Mean = 85.25, standard deviation = 8.03) showed significantly better results as compared to control group (Mean = 66.78, Standard deviation = 5.64), f (1, 43) = 82.023, p = .000 in developing pedagogical skills of prospective teachers at 0. 05 levels of significance. So, $H_0$1: There was no significant difference in the mean scores of experimental and control groups on developing the skills of pedagogical design capacity of

prospective teachers when GTCS was controlled as a covariate was rejected (Table 4.3).

4. Experimental group (Mean = 14.04, standard deviation = 3.21) showed significantly better results than control group (Mean = 10.83, Standard deviation = 1.58), f (1, 43) = 23.09, p = .000 in developing the skill of set induction in prospective teachers at 0. 05 level of significance. So, **$H_0$2:** There was no significant difference between the experimental and control groups on the mean scores on teaching skill "Set Induction" when GTCS was controlled as a covariate was rejected (Table 4.4).
5. Experimental group (Mean = 13.48, standard deviation = 2.44) showed significantly better results than control group (Mean = 11.43, Standard deviation = 1.53), f (1, 43) = 13.46, p = .001 in developing the skill of reinforcement at 0. 05 level of significance. So, **$H_0$3:** There was no significant difference between the experimental and control groups on the mean scores on teaching skill "Reinforcement" when GTCS was controlled as a covariate was rejected (Table 4.5).
6. Experimental group (Mean = 14.17, standard deviation = 2.80) demonstrated significantly better results than control group (Mean = 11.43, Standard deviation = 1.90), f (1, 43) = 13.52, p = .001 in developing the skill of explaining at 0. 05 level of significance. So, **$H_0$4:** There was no significant difference between the experimental and control groups on the mean scores on teaching skill "Explaining" when GTCS was controlled as a covariate was rejected (Table 4.6).

7. Experimental group (Mean = 14.78, standard deviation = 2.77) performed significantly better results than control group (Mean = 11.09, Standard deviation = 1.56), f (1, 43) = 26.63, p = .000 in developing the skill of questioning at 0. 05 level of significance. So, **$H_0$5:** There was no significant difference between the experimental and control groups on the mean scores on teaching skill "Questioning" when GTCS was controlled as a covariate was rejected (Table 4.7).
8. Experimental group (Mean = 14.35, standard deviation = 2.65) showed significantly better results as compared to control group (Mean = 11.09, Standard deviation = 1.99), p = .000 in developing the skill of gesturing at 0. 05 level of significance. So, **$H_0$6:** There was no significant difference between the experimental and control groups on the mean scores on teaching skill "Gesturing (Silence and Non Verbal Cues)" when GTCS was controlled as a covariate was rejected (Table 4.8).
9. Experimental group (Mean = 14.43, standard deviation = 2.76) performed significantly better than control group (Mean = 10.91, Standard deviation = 2.27), f (1, 43) = 22.09, p = .000 in developing the skill of closure at 0. 05 level of significance. So, **$H_0$7:** There was no significant difference between the experimental and control groups on the mean scores on teaching skill "Closure" when GTCS was controlled as a covariate was rejected (Table 4.9).
10. Both male (Mean = 75.95, standard deviation = 12.06) and female (Mean = 76.07, Standard deviation = 11.47), f (1, 43) = .003, p = .249 prospective teachers of control and experimental group showed significantly equal results

in developing pedagogical skills at 0. 05 level of significance. Thus, no gender differences were found in this account. So, **$H_0$8:** There was no significance difference in the mean scores of male and female prospective teachers with respect to developing pedagogical skills when GTCS was controlled as a covariate was accepted (Table 4.10).

11. Both male (Mean = 12.32, standard deviation = 2.81) and female (Mean = 12.52, Standard deviation = 3.15), f (1, 43) = .048, p = .853 prospective teachers of control and experimental group showed significantly equal results in developing the skill of set induction at 0. 05 level of significance while GTCS was taken as covariate. So, **$H_0$9:** There was no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Set Induction" when GTCS was controlled as a covariate was accepted (Table 4.11).
12. Both male (Mean = 12.42, standard deviation = 2.16) and female (Mean = 12.48, Standard deviation = 2.37), f (1, 43) = .008, p = .975 prospective teachers of control and experimental group showed significantly equal results in developing the skill of reinforcement at 0. 05 level of significance while GTCS was taken as covariate. So, **$H_0$10:** There was no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Reinforcement" when GTCS was controlled as a covariate was accepted (Table 4.12).
13. Both male (Mean = 12.37, standard deviation = 2.71) and female (Mean = 13.11, Standard deviation = 2.77), f (1, 43) = .836, p = .321 prospective

teachers of control and experimental group showed significantly equal results in developing skill of explaining at 0. 05 level of significance while GTCS was taken as covariate. So, **$H_0$11:** There was no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Explaining" when GTCS was controlled as a covariate was accepted (Table 4.13).

14. Both male (Mean = 13.05, standard deviation = 2.73) and female (Mean = 12.85, Standard deviation = 3.07), f (1, 43) = .145, p = .145 prospective teachers of control and experimental group showed equal results in developing the skill of questioning at 0. 05 level of significance while GTCS was taken as covariate. So, **$H_0$12:** There was no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Questioning" when GTCS was controlled as a covariate was accepted (Table 4.14).
15. Both male (Mean = 13.42, standard deviation = 3.27) and female (Mean = 12.22, Standard deviation = 2.45), f (1, 43) = .160, p = .96 prospective teachers of control and experimental group were equal in developing the skill of gesturing at 0. 05 level of significance while GTCS was taken as covariate. So, **$H_0$13:** There was no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Gesturing (Silence and Non Verbal Cues)" when GTCS was controlled as a covariate was accepted (Table 4.15).

16. Both male (Mean = 12.37, standard deviation = 3.27) and female (Mean = 12.89, Standard deviation = 2.96), f (1, 43) = .573, p = .573 prospective teachers of control and experimental group were performed significantly equal in developing the skill of closure at 0. 05 level of significance while GTCS was taken as covariate. So, **$H_0$14:** There was no significant difference between the experimental and control groups on the mean scores of male and female prospective teachers on teaching skill "Closure" when GTCS was controlled as a covariate was accepted (Table 4.16).
17. Both male (Mean = 84.10, standard deviation = 10.969) and female (Mean = 86.15, Standard deviation = 5.113), t (21) = -.599, p = .556 prospective teachers of experimental group were performed significantly equal in developing the pedagogical skills at 0. 05 level of significance. So, **$H_0$15**: There is no significance difference in the mean scores of male and female prospective teachers of experimental group with respect to developing pedagogical skills, was accepted (Table 4.17).
18. Male prospective teachers (Mean = 30.10, standard deviation = 2.28) showed significantly more farmable attitude as compare to female (Mean = 26.46, Standard deviation = .776), p = .000 prospective teachers towards microteaching program. So, **$H_0$16:** There was no significant difference in the mean scores of male and female prospective teacher's attitude towards microteaching skill development program, was rejected (Table 4.18). There can be different causes behind this difference like; female constraints towards technology or their reservations to face visionary images.

19. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP increases the teaching skills (Table 4.19).
20. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP decreases the complexities of the real classroom (Table 4.20).
21. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP provides confidence to the teachers (Table 4.21).
22. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP stimulates the teachers to plan the lesson (Table 4.22).
23. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP develops the specific skills (Table 4.23).
24. It was found that calculated Chi-Square value 19.2 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP builds up analytical skill (Table 4.24).
25. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP construct self – evident attributes (Table 4.25).

26. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP presents prompt and constructive feedback (Table 4.26).
27. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP generates cooperation, democratic attitude and unity (Table 4.27).
28. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP is an essential mean for improving education (Table 4.28).
29. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP motivates teachers to self- study and creativity (Table 4.29).
30. It was found that calculated Chi-Square value 19.2 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP helps teachers to get acquainted with modern techniques (Table 4.30).
31. It was found that calculated Chi-Square value 7.34 was less than the tabulated value (9.48). It implied that the teachers disagreed MCBP and traditional teachings are equal (Table 4.31).
32. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP requires the service of experienced and qualified supervisor (Table 4.32).

33. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP has a little value to develop the ability of healthy criticism and tolerance (Table 4.33).
34. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP partly meets the problem of real classroom (Table 4.34).
35. Teachers agreed MCBP provides an opportunity how to manage the classroom discipline (Table 4.35).
36. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP provides the teachers an opportunity to employ different techniques (Table 4.36).
37. It was found that calculated Chi-Square value 23 was greater than the tabulated value (9.48). It implied that the teachers agreed MCBP creates an ability to integrate all the teaching skills in one lesson (Table 4.37).
38. It was found that calculated Chi-Square value 0.04 was less than the tabulated value (9.48). It implied that the teachers disagreed MCBP is wastage of time (Table 4.38).
39. It was found that calculated Chi-Square value 1.09 was less than the tabulated value (9.48). It implied that the teachers disagreed MCBP creates boredom among teachers (Table 4.39).
40. It was found that calculated Chi-Square value 5.26 was less than the tabulated value (9.48). It implied that the teachers disagreed MCBP cannot be substitute of real classroom (Table 4.40).

41. It was found that calculated Chi-Square value 1.09 was less than the tabulated value (9.48). It implied that the teachers disagreed MCBP provides opportunities for developing only a few teaching skills (Table 4.41).
42. It was found that calculated Chi-Square value 3.52 was less than the tabulated value (9.48). It implied that the teachers disagreed MCBP can make perfection in the content (Table 4.42).
43. It was found that calculated Chi-Square value 0.04 was greater than the tabulated value (9.48). It implied that the teachers disagreed MCBP is very supportive in all teaching subjects (Table 4.43).

5.3 Conclusions

The following conclusions were drawn on the basis of the results of the study:

1. Microteaching method was found an effective method for prospective teachers for the development of basic teaching skills. It is concluded that instructions provided to experimental group was significantly effective. It was found that micro teaching method was more effective as compare to traditional method of teaching.
2. Microteaching skill development program was found an effective method of teaching for both male and female prospective teachers.
3. Microteaching skill development program was regarded an effective method for prospective teachers of practicing the teaching skills.
4. Microteaching skill development program was discovered an effective program for prospective teachers for growing competence on cumulative teaching skills.

5. Microteaching skill development program was found an effective program when used with concentration and passage of time. Male and female prospective teachers of experimental group were equal in developing the pedagogical skills.
6. Prospective teachers favored the microteaching teaching skill development program. It increased the teaching skill, decreased the complexities of real class room, provided confidence and stimulated to plan the lesson before entering the class room. Powerful Microteaching program through series of observational techniques, demanded development of the specific teaching skills built up on analytical thinking, constructed self-evaluation attributes, presented prompt and constructive feedback, motivated to self-study and creativity, developed the ability of healthy criticism and tolerance and provided an opportunity how to manage the class room discipline time as a learning environment.
7. Teachers agreed MCBP increases the teaching skills, decreases the complexities of the real classroom, provide confidence to the teachers, stimulates the teachers to plan the lesson, develop the specific skills, builds up analytical skill, constructs self – evident attributes, presents prompt and constructive feedback, generates cooperation, democratic attitude and unity, essential mean for improving education, motivates teachers to self- study and creativity, helps teachers to get acquainted with modern techniques, requires the service of experienced and qualified supervisor, has a little value to develop the ability of healthy criticism and tolerance, partly meets the

problem of real classroom, provides an opportunity how to manage the classroom, provides teachers to employ different techniques and creates an ability to integrate all the teaching skills in one lesson.

8. Teachers disagreed MCBP is wastage of time, creates boredom among teachers, cannot be substitute of real classroom, provides opportunities for developing only a few teaching skills, can make perfection in the content and is very supportive in all teaching subjects.
9. Teachers strongly disagreed the statement that MCBP and traditional teaching are equal. Most of the teachers were of the view that microteaching capacity building program was more beneficial as compared to traditional teaching.

5.4 Discussion

This was an experimental research approach to see the effectiveness of microteaching method in capacity building of prospective teachers. 16 null hypotheses were formulated. Pre-test and post-test control group design was suitable for this research due to randomization of participants. 46 prospective teachers were participated into experimental and control groups randomly. Both two groups were consisted of 23 participants.

The treatment group was provided microteaching skill development program by recording their performance in video tape. They were provide feedback through three approach; video tape recording (self- evaluation), peer teachers and the supervisors. Rahman (2005), Qureshi (2005) and Bukahri (2006) all were agreed upon these three approaches of feedback.

Findings of this empirical study revealed that experimental group showed better results as compare to control group in developing pedagogical skills of prospective teachers. Several studies endorse the findings of present study like;

Pre & In-service teachers can get practical training to acquire new skills and develop professional knowledge instead of memorizing the theories. Therefore, the nature of microteaching approach is based on training activities. Bagulia (2005) stated that it is training concept that can be applied at in-service stage for professional development of teachers.

In-service teachers can get proficiency in several teaching skills through microteaching method. Edwards et al (2002) state it as learning one specific skill that microteaching is useful for practicing specific skills in a safe environment. It allows the teacher educators to try out a number of different techniques that could be used in a single teaching context.

Video tape recording is main element of microteaching. Fry et al (2003) stated that usually the practice is videotaped. The use of video tape recording makes the observation very objective because video/audio tape recording is powerful feedback tool in microteaching process. Video tapping is objective because to the point and focused observation has been made. It has significant effect on trainees. Yusuf (2006) also gave evidence based on his experimental research that it was recommended that video or audiotape techniques should be used to provide needed feedback in microteaching.

Microteaching creates self-evaluation among in-service teachers because the teacher himself observes his/her performance on the TV screen and corrects his/her errors. This is the basic idea of microteaching-learning by observing effective practices remained popular through the 1980s and 1990s and is still used today (Vradidas & Glass 2005).

Supervisor plays a crucial role in microteaching program. His/her main responsibility is to provide expert opinions to trainees. Pankajam (2005) illustrated that the analysis and suggestions of a supervisor and other sources of feedback assist the trainee in restructuring the lesson.

Another finding of the research declared that prospective teachers showed positive attitude towards micro teaching skill development program and it can construct positive behavior among teachers below mention study (Khalid 1982) is also giving the same results. Microteaching is very flexible depending upon the context. Microteaching method can be used with or without operating video/audio tape recording, teach-re-teach cycle till perfection, use of self-observation and its absence and real students or pupil's teachers. Microteaching can construct positive attitude among teachers (Khalid 1982).

Microteaching can be used integrated in a subject and it can also be used in many subjects like Math, Science, Social Studies and Language learning. It can also be used in many other teaching professions of Engineering, Medical and Nursing. Cochran-Smith et al (2008) endorse that microteaching is a very famous and known teaching method in skill development program.

Bukhari (2006) indicates that recent researches in advanced countries in the area of classroom teaching have proved that classroom teaching may be objectively analyzed and modified according to the requirements, to develop teaching skills and competencies in the student's teachers and even in the in-service teachers.

It was also very important in favor of in-service school teacher's capacity building that there are two purposes of microteaching; firstly, it is for student teachers to develop teaching skills under controlled conditions without risking the learning of the pupils and secondly, for experienced teachers to examine and refine their techniques (Lucido & Borabo 2003). Microteaching should be considered a positive experience because it aids in the gradual development of professional expertise and minimizes the risk of failure in the classroom. Ananthakrishnan (1993) exposes that it focuses on sharpening and developing specific teaching skills and eliminating errors.

As a result, it was evident that microteaching method was more effective in capacity building of prospective teachers.

5.5 Recommendations

On the basis of conclusions drawn from the experimental results of the study, following recommendations were generated for promotion of Microteaching program in teacher training structures.

1. In policy perspective, teacher training curriculum need to be revisited and micro teaching, incorporating digital curriculum structure, be adequately reflected for pre service preparation of prospective teachers in elementary colleges.

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5.5 Recommendations

On the basis of conclusions drawn from the experimental results of the study, following recommendations were generated for promotion of Microteaching program in teacher training structures.

1. In policy perspective, teacher training curriculum need to be revisited and micro teaching, incorporating digital curriculum structure, be adequately reflected for pre service preparation of prospective teachers in elementary colleges.

2. The Directorate of Staff Development (DSD) Lahore, need to refine comprehensive manuals (incorporating teaching skills, cross course lesson plans, use of aids and technology) in microteaching in their INSET programs with intensive practices to the classroom teachers. Series of such activities, in turn, may be organized through the network of regional and district levels, involving more teachers with varied backgrounds.
3. A micro teaching clinic may also be setup in each elementary college, and selected Central Schools, to provide exposure to the trainees and the working teachers, together with innovative interventions on regular basis.
4. The Directorate of Staff Development (DSD) is equally expected to bring out regular journal on microteaching and similar innovative activities for dissemination of the researches and classroom practices for teacher enrichment.
5. The Provincial Teacher Associations, both teacher training institutions and schools, need to undertake action research in microteaching to demonstrate their professional productivity for qualitative change in teaching environment. The Provincial Education Department is expected to support such activities.
6. The Directorate of Staff Development and Provincial Institute of Teacher Education are policy making institutions in Punjab. These organizations, together with University of Education Lahore, International Islamic University Islamabad and similar national and Provincial Institutions, can develop a linkage system with pioneering overseas institutions in microteaching for faculty development programs on continuous exchange

basis as well as dissemination of research based interventions. The initiative undertaken by Higher Education Commission, in collaboration with Michigan University, in this endeavor can equally be integrated and go a long way for capacity building of tertiary teachers.

7. As an experimental study, results of present investigation are restricted to the sampled population. However, structures of teacher training colleges in Punjab, and the country as a whole, are common. The curriculum and instructional material, intake level of teachers, modes of training and assessment are nationally structured. Some studies in micro teaching, both in Pakistan and in typological context, have yielded positive results. Therefore, the results of this study, supported by similar findings, can conveniently lead to generalizability.
8. Key areas for undertaking future research in microteaching could be focused on replication of similar experimentations in other elementary or secondary teacher training colleges, University Departments of Education on other sites for attaining generalizability, effectiveness of microteaching on student learning comparing e learning methods. Cost effectiveness analysis of microteaching and other strategies, in-depth attitudinal assessment of educators and trainees, both in pre service and in service modes of teacher empowerment; creating new methods of student assessment, both in schools and public examinations to promote high order thinking rather than reproductive modes of assessment. Any innovative methods of teacher

delivery can be effective when students' performance is measured on criterion-based assessment rather than norm-based method.

5.6 Conclusions

By applying these skills in their daily teaching and by observing the students involvement and well comprehension of the lesson taught, the teachers continued to apply them in their teaching irrespective to science or arts subject. As a whole findings of the study indicate positive result of pre-service teacher training programs especially in teaching methodology. It is, therefore, recommended that in future, pre-service teacher training programs may be based on selected teaching skills/methodologies. However, these pre-service training programs may be need-based. These training programs are likely to emphasize all the six teaching skills, i.e. "Set Induction", "Reinforcement", "Explaining", "Questioning", "Gesturing (Silence and Non Verbal Cues)" and "Closure".

. There is also a need to identify and launch some other skills like Skill of Illustrating with Examples and Skill of Stimulus Variation in the future teachers training programs in Pakistan.

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APPENDIX 'A'

A GUIDEBOOK

ON

MICROTEACHING METHOD

AND

SELECTED CORE SKILLS

INTRODUCTION

Education is a process which begins at birth and continues throughout life. So we can say it is a never-ending process of development, beginning from infancy to maturity, form womb to tomb. Education in its widest sense includes all the influences which act upon an individual during his passage from the cradle to grave. So everything which influences human behavior and personality is education. In other words, education helps a lot in transforming man into human, social, moral and spiritual being. Hence education is a continuous and dynamic process.

No system of education can rise above the teachers who serve it; its quality ultimately depends upon the quality and efforts of teachers. Teacher is a key stone of the arch of national education. An efficient, hard working, honest teacher who is fully conscious of the fact that he is the trust of his nation's solidarity, progress and up bringing of the nations youth are placed in his hands. Teachers are the backbone of nation. No nation can think of progress without the efforts of its teachers. The teacher is the planner, messenger, supervisor, evaluator, motivated, guide and human architect. The quality and effectiveness of any education system largely depends on the quality of its teachers. They are the single most important factor in determining success in meeting the system's goals. Equally well, the educational and personal well-being of children hinges crucially on their competence, commitment and resourcefulness.

Teachers are considered as facilitators rather than sources of knowledge. Much of the students' learning depends upon the ability of the teachers to provide the proper stimuli and learning experience for students to acquire the necessary

knowledge and information. The role of teachers has similarly found that the 'competence to implement 'high quality education for sustainability is necessary for achieving changes in classroom practice.

Capacity building of prospective teachers as the whole school improvement as within the context of school improvement capacity is the ability that enables all teachers to reach higher standards. Capacity may be built by improving the performance of teachers. Professional development of teachers is the ultimate aim of capacity building. Capacity building of teachers supports the teachers' professional growth.

This approach emphasizes the staff development. It is a developmental approach rather than a set of discrete or prepackaged interventions. Professional development of teachers goes by many names — staff development, capacity building and education.

In-service education and teacher capacity building program for one or more of the following reasons; they believe those educational needs to be more closely linked to national and local needs; teachers, like other adults, need continuing education to keep abreast of change in modern society; there is a growing concern in some countries about the career development and quality of teaching of those who have had less education; wide recognition that the structures and practices, which have developed historically many, not be the most appropriate for the final part of the twentieth century.

Many countries of the world have launched new techniques and methods for improving the quality of their in-service teachers. Although there are many

techniques but preference is given to microteaching which is enormously practical and provide at the spot feedback to teachers.

MICROTEACHING

Microteaching is a significant effort to make teacher education program scientific, effective and meaningful. It is now considered not only a constructive teacher training technique but also a versatile research tool that dramatically simplifies the logistics of investigating certain teaching skills and learning variables.

A. W. Dwight Allen and Robert Bush of the Stanford University first coined the term microteaching in 1963. Dr. Ibrahim Khalid did his work on microteaching in Pakistan in 1982 at Institute of Education & Research, Punjab University Lahore. This task opened new horizons in pre-service and in-service teacher education in Pakistan.

Microteaching is laboratory technique of teacher training in which the complexities of normal classroom teaching are simplified. The trainee is engaged in a teaching situation scaled down in terms of class size and the student teacher teaches a small group of four to six pupils. The lesson is scaled down in length of class time and is reduced to five or ten minutes. It is a scaled down in terms of teaching tasks. These tasks may include: the practicing and mastering of a specific teaching skill such as lecturing, questioning or leading a discussion; mastering of specific teaching strategies; flexibility; instructional decision – making; alternative uses of specific curricula, instructional material and classroom management. The short lesson is recorded an audio or videotaped-recorder. The trainee gets to hear and see himself immediately after the lesson finished. The pupils who attend the lesson are asked to

fill in rating questionnaires evaluating specific aspects of the lesson. The trainee's own analysis of the lesson based on the authentic feedback from the tape together with the pupils reaction and a supervisor' analysis and suggestions, assists the trainee in restructuring the lesson, which he then immediately reteaches to a new group of pupils. Further assessment by learners and supervisor led to further improvements when he teaches again, either immediately or several days later. Microteaching is often focused on practicing a particular teaching skill (e. g. , presenting clear instructions, asking probing questions, using wait-time appropriately, etc.) and usually involves teaching simplified in three ways: class size, lesson length and task complexity.

A microteaching programs consists of various elements with which it leads to achieve the certain determined objectives. Singh (2007 p. 89), Khalid (1982, p. 77-88) and Pelberg (1988) stated that the elements essential to microteaching programs as under:

1 The Supervisor

2 Microteaching Students

3 Videotape/ audiotape Recording in Microteaching

4 Feedback in Microteaching

5 Teaching Skills

6 Laboratory for Microteaching Training

7 Samples of Microteaching Lessons.

Let's explore some prominent elements and their role in microteaching.

THE SUPERVISOR

Microteaching supervisor is essentially a teacher. His role is to increase and refine performance of the skills that serve as the objectives. The supervisor should help the trainee develop ability to perform a skill. The supervisor discharges the following functions in this role:

- The supervisor helps the trainee in discrimination of the skill and reinforces his performance.
- The supervisor tries to understand the behaviors that constitute the skill and to become sensitive to the cues that signal when the skill should be performed.
- The supervisor reinforces his behavior when the trainee performs the skill, or begins to approximate the performance of it.
- Each supervisor is assigned between 6 to 10 teacher trainees at the start of the session in microteaching and he works with group.
- The supervisor visits his trainee in the school and prepares schedule on microteaching lesson in the practicing school. This requires special arrangements. The period allowed is only between 5 to 10minutes. The pupils discuss with the supervisor after the lesson.
- The supervisor supervises the lesson. He notes the improvements that are to be made by the pupil-teacher in the presentation of the lesson.
- The supervisor evaluates the lesson and gives feedback.

VIDEOTAPE RECORDING IN MICROTEACHING

Videotape recording is not essential part of the microteaching process. But if it is used, it strengthens the microteaching process in two ways: first, it is excellent for both the development and display of models of various teaching skills. Second, the videotape recorder is a powerful feedback source in the microteaching process. It helps the trainee to understand his own performance. It is generally agreed, however, that the availability of video recording enhances the effectiveness and flexibility of microteaching.

FEEDBACK IN MICROTEACHING

The best way to develop as a teacher is to get feedback from other teachers. It is difficult to self-assess one's own abilities. Proper feedback helps in-service teacher to recognize his strength and identify areas for improvement. An in-service teacher gets three fold feedback; to see himself on the TV's screen; peers; and the supervisor.

STEPS IN MICROTEACHING PROCEDURE

Microteaching involves the following steps:

Defining The Skill: To provide the knowledge and awareness of teaching a particular skill is defined to trainees in terms of teaching behavior.

Demonstration The Skills: The specific skill is demonstrated by the experts or shown through video-tape or film to the teachers' trainee.

Planning The Lesson: With the help of his supervisors the student teacher plans a short (micro) lesson in which he can practice a particular skill.

Teaching The Lesson: The pupil teacher teaches the lesson to a small group of pupils (i. e. 5to 10). The teaching is observed by the supervisors or peers. Videotape or audiotape is televised at close circuit television.

Discussion: Teaching the lesson is followed by discussion to provide the feedback to trainee. The videotape or audiotape may be displayed to the trainee to observe his own teaching activities. The awareness of his own teaching performance provides the reinforcement to the pupil teaching.

Replanning: The pupil teacher replans the lesson in order to practice the small skill effectively in the light of the discussions and suggestions.

Reteaching: This replanned lesson is retaught to another small group of students of same class for the same duration to practice the same skill.

Rediscussion: The teaching is now followed by discussion of suggestions and encouragement to the teaching performance. The feedback is again provided to the trainee.

Repeating The Cycle: The cycle is repeated till the desire level of skill is achieved.

ADVANTAGES OF MICROTEACHING

Microteaching is a training strategy with vast potentials. Researchers have shown that microteaching is feasible and effective technique in training of teachers. Some are given below:

1. **Modification of teacher behavior**. Microteaching is an effective device for the modification of teacher behavior.
2. **Knowledge of teaching skill**: By the use of microteaching the knowledge and practice of teaching skill can be given.

3. **Developing of teaching skill**: Microteaching experience develop the specific teaching skills such as reinforcement skill, explaining skill, skill of using black board, skill of using AV aids skill, and skill for classroom management.
4. **Developing Teaching Efficiency**: Microteaching is found useful for developing teaching efficiency in pre-service and in-service teacher education program.
5. **Improving Teaching Practice**: This technique is a training devise for improving practice and prepares better and effective teachers.
6. **Individual Training**: By microteaching the training of teachers becomes individualized. Each trainee makes progress in developing teaching skills at his rate depending on his ability.
7. **Regulating Teaching Practice:** The technique permits increase control and regulate teaching practice.
8. **Superior Performance:** Student teachers have been trained in microteaching clinics by the Stanford university team in such numbers as 150 colleges students in eight weeks. They feel that microteaching training, requiring less than 10 hours per week, is likely to produce performance that is superior to college students who take more traditional course of study requiring more than twenty hours per week. They have discovered that about 15 to 20 minutes are required before the retaech performance after the criticism of the first teaching, thus the teacher trainee has time to plan meaningful changes.

9. **Real Teaching:** Although the teaching situation is constructed in the sense that the teacher and pupils work together in a practice situation, all the same, real teaching does take place.
10. **Accomplishment of Specific Tasks:** Microteaching focuses on training for accomplishment of specific tasks. These tasks may be the practice of instructional skills, the practice of techniques of teaching, the mastery of certain curricular materials, or the demonstration of teaching methods.

TEACHING SKILLS

Effective teaching really depends upon the mastery in teaching skills. Different educationists have presented various lists of teaching skills based on their research outcomes. A teaching skill may be defined as an observable teacher behavior or activity which the teacher has to employ in a teaching situation in order to effectively drive a point, an idea or a thought to the children. The term skill is used both in narrow as when talk of the questioning skill, demonstration skill etc, and in a broader sense, when for example, we talk of planning a lesson, organizing the content to make it more meaningful for the learner and the like.

SKILL OF SET INDUCTION

It means the introduction of the lesson. This skill links previous knowledge with the present knowledge. It is known as the skill of set induction.

Components of skill

Previous Knowledge: Before starting the teaching of new content, awareness of previous knowledge of the pupil is must. Previous knowledge should concentrate on the same topic that is to be started for teaching.

Proper Sequence: While starting the lesson, coordination is must among ideas, questions and statements to be used.

Objectives and Aids: Keeping in mind the objectives of the lesson, various aids are used. Monotonous type of teaching bore the pupils. So, this boring tendency can be controlled in the pupils by selecting properly and attractive use of audio-Visual aids.

Relationship between Content, Objectives and Statements: While teaching the lesson, the statement to be used must have some relationship with the new content to be taught and these contents must be selected to the pre-determined objectives.

Duration of Introduction: Introduction should be neither lengthy nor too short. Its duration should restrict to the creation of interest and motivating the pupils.

SKILL OF REINFORCEMENT

Every responding pupil of the class needs social approval of his behavior. To satisfy his need, he is always eager to answer each question known to him. If the teacher is encouraging the pupils by statements like, "good"; that is very good and certain non-verbal expressions, as smiling, nodding the head, paying attention to the responding pupil so that the pupil participation in the class is maximized. The main theme of the skill is that encouraging remarks of the teacher increases and discouraging remarks decreases the pupil-participation in the development of the learning process.

Components of Skill

Positive -Verbal Reinforcement: These are the positive comments given by the teacher on the correct response of the pupil. They are:

(i) Using words and phrases like, "good", "very good" and "excellent".

(ii) Repeating and rephrasing pupil's response.

(iii) Using pupil's idea in the development of the lesson.

(iv) Using extra-verbal cues, like "um" and "aha" to encourage pupils.

(v) Using prompts like carry on, think again etc. to help the pupil give correct response.

Positive Non -Verbal Reinforcement: The teacher gives comments to pupils on their correct response without using words. This he does by nodding the head, smiling, patting, looking attentively at the responding pupil, and writing pupil's answer on the black boards. The teacher encourages the pupils to participate maximally in the development of the lesson.

Negative Verbal Reinforcement: The teacher gives comments on the incorrect or partially incorrect response by telling that the pupil's response is incorrect or making sarcastic remarks like "idiots", "stupid" etc. Such behavior of the teacher discourages pupil-participation and should not be used.

Negative Non -Verbal Reinforcement: The teacher shows his disapproval without using words. This involves, frowning, staring, and looking angrily at the responding pupil, when he gives wrong response. This type of behavior of the teacher creates fear in the minds of the pupil and decreases pupil-participation.

Wrong use of Reinforcement: This is the situation, where the teacher does not give reinforcement when the situation is demanding encouragement.

Inappropriate use of Reinforcement: This is the situation when the teacher does not encourage the pupil with respect to quality of his response. He uses same type of comment for every response.

SKILL OF EXPLAINING

It means use of explaining or connecting to links to link the statement or systematic information. In short, when a teacher shows his behavior while explaining the pupils about What, Why, and How regarding some facts, principles and concepts that behavior constitutes the skill of explaining. Teachers must have experienced that during the teaching-learning process of some concepts, principles and phenomena, mere description of theme does not make them understandable to the pupils. The teacher has to give proper explanation and reasons to bring clarity and proper understanding of what is being taught.

Components of the Skill

1. Beginning statement;
2. Explaining links;
3. Concluding statement;
4. Questions to test pupils' understanding;

Don'ts

5. Irrelevant statement,
6. Lacking in continuity,
7. Vague words and phrases.

Beginning Statement: The purpose of this statement is to create readiness among the pupils to pay attention to the point being explained. It is the introductory statement to begin explanation.

Explaining Links

Concluding Statement: This is the statement made at the end of the explanation. It includes the summary of all the main results of the explanation.

Questions to Test Pupils' Understanding: These are short questions put to the pupils to test their understanding of the concept after the explanation. The main purpose is simply to judge whether the pupils have understood or not.

Irrelevant Statements: These are statements sometimes made by the teacher during explanation which have nothing to do with the present concept. These statements do not contribute to understanding rather create confusion in the minds of the students.

Lacking in Continuity: It happens when the sentences remain incomplete or are reformulated in the middle of the statement.

SKILL OF QUESTIONING

It is concerned with the questions to be asked about the content in more depth. This stimulates the cognitive development of the pupils. When the teacher asks questions from the pupils in his class different situations arise. They are:

1. The pupil may give no response,
2. The pupil may give incorrect,
3. The pupil may give partially correct response and
4. The pupil may give correct response.

How to deal with all these situations effectively is the main theme of this skill. In case of no response or incorrect response the teacher goes deep into pupil's responses by asking many questions about what he already knows and to lead him to the correct response. When the response is correct the teacher may help the pupil to go deep into the content by asking questions of how, why and sometimes of what types also. The skill involves a series of questions to go deep into pupil's responses.

The question should be well structured, simple, concise, and grammatically correct. It should be addressed to the whole class instead of one pupil only. This is because the purpose of the question is to make the whole class think on the point under discussion. The pupils should be given some time to think and then the teacher should point towards one pupil to respond.

Components of Skill

Prompting Technique: This technique means to go deep into the pupil's response when it is incorrect or no response. Then a series of hints or prompts are given to pupil through step by step questioning in order to lead the pupil to the desired correct response.

Seeking Further Information: This technique is used when the response of pupil is incomplete or partially correct. The teacher helps the pupil to clarify or elaborate or explain his initial response by asking more small questions or creating situation in which the pupil is made to think and respond.

Redirection: This technique involves asking the same question from another pupil. The main purpose of this technique is to increase more and more pupil participation.

When the situation is of no response or incorrect response prompting should be preferred to redirection.

Refocusing: It is used when the pupil's response is correct. This involves comparing the phenomena in his response with other phenomena either for similarity/difference or relationship between the two situations. How one thing in point is different from the other thing? How one response of the pupil is related to any other point? How one thing is similar to another thing? Such types of questions are put to the pupil.

Increasing Critical Awareness: This technique is used when the pupil's response is correct. The teacher puts higher order questions to stimulate the pupil to think beyond what the pupil knows. This involves the 'how' and 'why' and sometimes 'what' type of questions on the point under discussion.

SKILL OF GESTURING

It means changing of gestures and positions by the teacher. If a teacher does not change his gesturing and position during the teaching process, it becomes bore and lacks in interest. Hence it is necessary to provide the training to teacher in the skill of changing the gestures. For the success of any lesson it is essential to secure and sustain the attention of the pupils-learning is optimum when the pupils are fully attentive to the teaching-learning process. How to secure and sustain the attention is main theme of this skill. It is known on the basis of psychological experiments that attention of the individual tends to shift from one stimulus to other very quickly. It is very difficult for an individual to attend to the same stimulus for more than a few seconds. Therefore, for securing and sustaining the attention of the pupils to the

lesson it is imperative to make variations in the stimulus. This is because attention is the necessary pre-requisite for learning.

Components of Skill

1. Movements.
2. Gestures.
3. Change in Speech Pattern.
4. Change in Interactions Style.
5. Focusing.
6. Pausing.
7. Oral-visual switching.

Movements: Making movements from one place to another with some purpose. For writing on the black board; to conduct experiment; to explain the chart or model; to pay attention to the pupil who is responding to some question etc.

Gestures: These include movements of head, hand and body parts to arrest attention, to express emotions or to indicate shapes, sizes and movements. All theseacts are performed to become more expressive.

Change in Speech Pattern: When the teacher wants show emotions or to put emphasis on a particular point, sudden or radical changes in tone, volume or speed of the verbal presentation are brought out. The change in the speech pattern makes the pupils attentive and creates interest in the lesson.

Change in Interaction Style: When two or more persons communicate their views with each other, they are said to be interacting.

Focusing: The teacher draws the attention of the pupils to the particular point in the lesson either by using verbal or gesture focusing. In verbalfocusing the teacher makes statements like, "look here" "listen to me" "note it carefully". In gesture focusing pointing towards some object with fingers or underlining the important words on the black board.

Pausing: This means "stop talking" by the teacher for a moment. When the teacher becomes silent during teaching, it at once draws the attention of the pupils with curiosity towards the teacher. The message given at this point is easily received by the pupils.

Oral-Visual Switching: The teacher gives information to the class verbally about something. This is called oral medium. When the teacher is showing maps, charts and object without saying something. This is called visual medium. If the teacher is giving information to the pupils through any one medium (oral, visual, oral visual) for a long time, it is possible that the students may lose attention to what the teacher is conveying to them. Therefore it is essential for the teacher to change medium rapidly in order to secure and sustain pupils' attention to what he says. There are three types' media:

1. Oral ⇄ oral –visual: - when the teacher while speaking shows objects, charts and models and explains their various parts. It is switching from oral to oral-visual.
2. Oral ⇄ visual: - when the teacher while speaking, shows objects, maps, charts, globe etc. It is switching form oral to visual.

3. Visual ⇄ oral – visual when the teacher demonstrates the experiment silently and then explains the phenomenon with the help of charts, maps, diagram etc. It is visual-oral switching.

SKILL OF CLOSURE

It means to finish some task. When a pupil-teacher delivers lecture and sums up properly and in an attractive way, the skill is termed as closure skill. In absence of proper closure, the lesson remains ineffective.

Components of Skill

1. Select an appropriate activity.
2. Summarized the main points of the lesson so that students may understand the entire endeavor of the teacher.
3. Linked with content briefly.
4. Used evaluation of content asking some questions etc.
5. Revised the important concepts involving pupils.

Model Lesson No. 1

Skill of Set Induction

Topic: Flags of South Asian Countries **Class: 6th**

Teacher enters the classroom and says loudly in a fine tone. (Activity) Teacher hold up flags of different countries in his hand. He has also a globe of the world that he places on the table. He distributes these flags among the pupils of the classroom. He also has a Pakistani flag in his hand. He flaps it in the air two or three times. Then, he addresses to his class.

TEACHER: dear students! There are many countries in the world. (He shows the globe of the world). Every country has its own symbol for its recognazation. But a piece of cloth is also given a high regard by every nation that I s called a flag. (He asks a question to know the previous knowledge of the students.)

TEACHER: What is this in my hand?

STUDENT: This is a Pakistani flag.

TEACHER: What is the color of our national flag?

STUDENT: Green and white

TEACHER: Good! What is on the flag?

STUDENT: Crescent and star.

TEACHER: Where do we hoist it?

STUDENT: On the top of our houses and especially on the government buildings.

TEACHER: How can we give respect to our flag?

STUDENT: It is considered our flag is dearer than our own lives.

TEACHER: Dear students! Today I shall teach you an interesting lesson about the flags of South Asian Countries. (He writes this word on the blackboard and he also pause for a while.) He says the students open your books.

Model Lesson No. 2

Skill of Reinforcement

Topic: Quaid-E-Azam Muhammad Ali Jinnah **Class: 4th**

Teacher says to the pupils open your books of social studies. Teacher walks around the class to see the children and appreciates (good / very good) to those boys who open their book at once. Then, he smiles when he finds that all the students open their books. Who will read this lesson first? He indicates a student saying "excellent" for reading. As the student finishes the paragraphs. Then teacher asks question for comprehension.

TEACHER: dear students! When did Pakistan come into existence?

STUDENT: sir! Pakistan came into being on 14th august, 1947.

TEACHER: Excellent! (Nodding his head happily) who did make Pakistan?

STUDENT: Quaid-E-Azam Muhammad Ali Jinnah

TEACHER: well-done! Where did Quaid born?

STUDENT: Sialkot.

TEACHER : (looking at the student angrily and frowning). No! He was not born at Sialkot. Think again and be attentive dear! He mentions one student for reply.

STUDENT: He was born at Karachi.

TEACHER: (Nodded his head and smiles) "Yes" correct answer.

Then, the teacher says another student for reaching the rest of the lesson. After the student finishes his reading. Teacher appreciates student by saying very good. Now the teacher asks important questions for the entire command over lesson. He also reinforces his students by giving praising words.

TEACHER: Where did Quaid go to for higher studies?

STUDENT: He went to Germany.

TEACHER: (Oh, No! frowning and staring the student angrily) Think, who will give the correct answer of this question.

STUDENT: He went to England.

TEACHER: (With smiling face and affectionately look at student) Well-done! You are right.

STUDENT: Sir! I want to add more here.

TEACHER: Aha---------- very good! Why not! We shall hear you attentively

STUDENT: Quaid took admission in that institute where the list of all greatest statesmen was graved on the main gate and the top of the list was the name of our Holy Prophet (SAW)

TEACHER: Excellent boy! (He pats the student shoulder)

STUDENT: link inn

TEACHER: Well-done student!

Model Lesson No. 3

Skill of Explaining

Topic: Solar System **Class: 8th**

TEACHER: Where are we living?

STUDENT: Sir! We live on the Earth.

TEACHER: Which thing does give us heat and light in the daytime?

STUDENT: Sun

TEACHER: Dear Students! All these things are called universe. (Teacher then further explains the concept of universe). The universe includes the sun, the stars, the sky and all existing things. Our world is only a tiny speck in the huge universe. On the clear night one can see countless bright objects twinkling in the sky. Many of them give out light and heat like the sun. There are others, like the earth and moon which have no light of their own. They only reflect the rays of the sun falling on them.

STUDENT: Sir! What is Solar System?

TEACHER: Good question. Let's explain it now first. (Now teacher describes the galaxies and solar system in detail). If one carefully looks at the sky in a clear night, one will see several clusters of stars in the sky. These clusters of stars are called galaxies. Some of the stars are several times bugger than our sun. But they are so far away that their heat never reaches us. (Then teacher links this with solar system.) Our sun and few planets do revolve around the sun. Theses whole things are called the universe.

STUDENT: How many planets do revolve around the sun?

TEACHER: There are nine planets revolve around the sun. (He further throws light on theses planets with the help of the diagram then he draws on the blackboard.)

STUDENT: Sir! Which planet is nearest to the sun?

TEACHER: If we look at the diagram carefully, we can find that it is the Venus which is nearest to the sun. (He adds more.) We can observe that this is the hottest planet too. Therefore, it is so hot that no life can exist on it.

STUDENTS: Thank you sir.

Model Lesson No. 4

Skill of Questioning

Topic: Resources of Muslim Countries: Minerals **Class: 7th**

TEACHER: Dear students! Allah has created a lot of resources for human beings. Theses resources that find inside and outside the earth are called natural resources. Let's tell me the name of resources that find outside the earth.

STUDENT: Forest, crops, sea, mountain and air etc. Sir! Is salt natural resources?

TEACHER: Well-done! Yes, salt is an also a natural resources but it is found inside the earth. We use salt in our food for creating taste. It is a mineral. Tell me the name of some others minerals.

STUDENT: Mineral oil, coal, gas, iron and gold etc.

TEACHER: Tell me the name of Muslim countries which drag the mineral oil?

STUDENT: Saudi Arabia, Iran, Iraq, Kuwait and UAE produce the mineral oil for whole the world.

TEACHER: Can you tell me the functions of coal?

STUDENT: It is the major source of energy and heat.

TEACHER: Good! Who wants to tell me the one benefit? (He pauses for a while so the students can mentally prepare themselves for this question. At last, he indicates toward student.). Let's tell me t you dear student!

STUDENT: Sir it is used as a fuel for running factories, trains and fireplaces at home.

TEACHER: Very good! (Teacher pats him) What are the main functions of coal?

STUDENT: Coal produces heat and energy. Further, it is also used in factories and at home for cooking purposes.

TEACHER: Who tell me where does gas find in Pakistan?

STUDENT: It is found in Balochistan.

TEACHER: Why we use gas?

STUDENT: Gas is a major source of heat. If we use trees as fire then it will harm our environment and forests are also finishing. Forests give several benefits. In addition to, there are vast hoard of gas in Pakistan.

TEACHER: Why is iron important in economy of a country?

STUDENT: Iron is the precious metal. Most of the things are made by iron. Needles to airplanes all made by iron and it is used in every necessary thing. Therefore, it is considered most important mineral of the world.

TEACHER: Well-done boy! I am happy that you all have understood the lesson.

Model Lesson No. 5

Skill of Gesturing

Topic: SAARC Countries **Class: 6th**

TEACHER: We read about SAARC countries yesterday. Let's revise this lesson in short time. (Teacher displays SAARC countries on the globe.)

STUDENT: It is good thing. We are ready.

TEACHER: (Nodes his head pleasantly and makes a victory sign with his two fingers.) First question, SAARC stands for?

STUDENT: South Asian Association for Regional Cooperation.

TEACHER: Well-done! (He pats the shoulders of the pupil and he gives a pause showing his fiscal expression that it is a tough question for them.) How many countries in the SAARC.

STUDENT: There are five countries in the SAARC.

TEACHER: (Looking angrily toward this student.) No, it is not correct answer. Think again. (He indicates with a finger toward student who wants to reply.)

STUDENT: Sir! There are seven countries like Pakistan, India, Bangladesh, Siri Lanka, Bhutan, Maldives and Nepal.

TEACHER: (Focusing on seven and draw the digit 7 with his finger.) Very good boy. Which is the biggest country of the SAARC? (He also indicates the size of big with his arms)

STUDENT: It is India which is the biggest in SAARC.

TEACHER: Okay.

Model Lesson No. 6

Skill of Closure

Topic: The Freedom Movement **Class: 6th**

Teacher has told the class in detail about the freedom movement of Pakistan. Period will over after five minutes. Therefore, he adopts this procedure.

STUDENT: (First he summarizes the lesson.) Dear students! I have described in depth about the freedom movement of Pakistan. First I shall tell you the main points again. Pakistan Muslim League was found in 1906 for the welfare of Muslims living in subcontinent. Allam Iqabl presented the idea of Pakistan in 1930. Two Nation Theory is the basic idea behind it. Resolution of Pakistan was passed in 1940 at Lahore. At last, in 1947 Pakistan came into being under the leadership of Quaid-E-Azam Muhammad Ali Jinnah. (He writes the main dates and leader's name on the white board.)

TEACHER: (he asks question for evaluation of the lesson.) when was Muslim League found?

STUDENT: 1906.

TEACHER: Well-done boy! Who did lead the freedom movement?

STUDENT: Quaid-E-Azam led the movement of Pakistan.

TEACHER: When was Pakistan resolution passed?

STUDENT: It was passed in March 23rd, 1940.

(He pats the student.) Last question, when was Pakistan made?

STUDENT: Pakistan came into being in August 14th, 1947.

TEACHER: Thanks.

APPENDIX 'B'

GENERAL TEACHING COMPETENCE SCALE FOR TEACHERS (GTCS)

NAME: ----------

CLASS TO BE TAUGHT: ----------. **TOPIC:** ----------

DATE: ----------. **DURATION:** ----------

Mark (√) the relevant box according to your observations.

S.	COMPONENT OF A SKILL	RATING SCALE						
PLANING (PRE-INSTRUCTIONAL)		**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	Objective of the lesson were appropriate; clearly stated relevant to the content, adequate and attainable.							
2	Content selected was appropriate; relevant and adequate with respect to the objectives of the lesson and accurate.							
3	Content selected was properly organized; logical continuity and psychological organization.							
4	Audio-visual material chosen were appropriate; suited to the pupils and content, adequate and necessary for attainable the objectives.							
PRESENTATION (INSTRUCTIONAL)								
5	Lesson introduced effectively and pupils were made ready emotionally and form knowledge point of view to receive the new statement or questions relevance use of previous knowledge and use of device/techniques.							

6	Questions were appropriate, well structured, properly put, and adequate in number and made pupils' participation.							
7	Critical awareness was brought about in pupils with the help of probing questions; prompting, seeking redirection and increasing critical awareness.							
8	Concepts and principles were explained (understanding brought about) with the help of interrelated and meaningful statements: to conclude statements which had relevancy vocabulary, fluency and had no vague words and phrases.							
9	The concepts and principles were illustrated with the help of appropriate examples through appropriate media and non-verbal): simple, relevant to the content and interest level of pupils.							
10	Pupil's attention was secured and maintained by varying stimuli like movements, gestures, changing interactions styles, pausing and oral-visual switching: pupil's postures and listening, observing and responding behaviors of pupils.							
11	Deliberate silence and non-verbal cues were used to increase pupil's participation.							
12	Pupil's participation (responding and initiating) was encouraged using verbal and non-verbal reinforces.							
13	Speed of presentation of ideas was appropriate: matched with the rate of pupil's understating and there was proper budgeting of time.							
14	Pupils participation in the classroom and responded to the teacher and initiated by giving							
15	The blackboard work was good: legible, neat, appropriateness of the content written and adequate.							
CLOSING								

APPENDIX 'C'

MICROTEACHING COMPETENCE OBSERVATION SHEET (MCOS)

NAME: ----------

CLASS: ----------. **SUBJECT: SOCIAL STUDY**

TOPIC: ----------

DATE: ----------. **DURATION:** ----------

SUPERVISOR'S NAME: ----------

-Mark (√) the relevant box according to your observations.

S. NO	COMPONENT OF SKILL OBSERVED DURING CAPACITY BUILDING PROGRAM	RATING SCALE				
1	**SKILL OF SET-INDUCTION**	1	2	3	4	5
A	Used the interesting activity.					
B	Used the previous knowledge by asking questions.					
C	A teacher was able to create interest and motivation about lesson among students.					
D	The introduction period was appropriate.					
E	Ideas, statements and questions were in a sequence.					
F	Used inappropriate skill of set induction.					
2	**SKILL OF REINFORCEMENT**					
A	Used +ve verbal reinforcement (good/v. good/excellent)					
B	Used +ve non-verbal reinforcement (smiling/patting etc.)					
C	Used –ve verbal reinforcement (not at all, stupid etc.)					
D	Used non-verbal reinforcement (frowning, staring, looking angrily etc.)					
E	Used reinforcement properly.					
F	Used inappropriate skill of reinforcement.					

16	The classroom was achieved appropriately: main points of the lesson were consolidated, present knowledge was linked with he present knowledge, opportunities wee provided for applying present knowledge and present knowledge linked with future learning assignments.							
17	The assignment given to the pupils was appropriate: suited to individual differences, relevant to the content taught and adequate.							
EVALUATION								
18	Pupils' progress towards the objectives of the lesson was checked and the procedure of evaluation was appropriate: relevant to the objectives, valid, reliable and objectives.							
19	Pupil's difficulties in understanding a concept or principles were diagnosed by step-by-step questioning and suitable remedial measures were undertaken.							
MANAGERIAL								
20	Both attending and non-attending behaviors of the pupils were recognized: attending behavior was rewarded, directions were given to eliminate non-attending behavior , question were asked to check pupils' feeling s and ideas were used to recognized and non-attending behaviors.							
21	Classroom disciplined was maintained in the class: pupils followed teacher's instructions that were not related to the content.							

3	**SKILL OF EXPLAINING**					
A	Used word connecting the ideas/ statement about content.					
B	Used explaining links.					
C	Used activity for supporting explanation.					
D	Used examples appropriately for explanation.					
E	Covered essential concepts.					
F	Used inappropriate skill of explaining.					
4	**SKILL OF QUESTIONING**					
A	Used prompting questions.					
B	Questions were asked for further information.					
C	Redirection.					
D	Refocusing					
E	Used questions for creating critical awareness.					
F	Used inappropriate skill of questioning.					
5	**SKILL OF GESTURING**					
A	Body movements (eyes/hands/head) were used.					
B	Used the voice fluctuation (low/high).					
C	Used the focusing (look here / note it/ and listen to me etc.) on core points of the content.					
D	Interaction among pupils occurred.					
E	Used the pauses.					
F	Used inappropriate skill of gesturing.					
6	**SKILL OF CLOSURE**					
A	Selected the appropriate activity.					
B	Summarized the main points of the lesson.					
C	Linked with content briefly.					
D	Used evaluation of content asking questions etc.					
E	Revised the important concepts involving pupils.					
F	Used inappropriate skill of closure.					

APPENDIX 'D'

ATTITUDE OF PROSPECTIVE TEACHERS TOWARDS MICROTEACHING CAPACITY BUILDING PROGRAM

Please look at the statements and express your opinion in the relevant column by marking (√). Agree or Disagree has written against each proposition.

Note: MCBP is an abbreviation of Microteaching Capacity Building Program.

S. No	Statement	Agree	Disagree
1	MCBP increases the teaching skills of in-service teachers		
2	MCBP decreases the complexities of the real classroom.		
3	MCBP provides confidence to in-service teachers		
4	MCBP stimulates the in-service teachers to plan the lesson before entering the classroom.		
5	MCBP develops the specific teaching skill in in-service teacher.		
6	MCBP builds up analytical thinking among in-service teachers.		
7	MCBP constructs self-evident attributes in teachers.		
8	MCBP presents prompt and constructive feedback.		
9	MCBP generates cooperation, respect & esteem, admiration, democratic attitude and unity etc in in-service teachers.		
10	MCBP is an essential mean for improving education of teachers.		
11	MCBP motivates in-services teachers to self-study and creativity.		

12	MCBP helps teachers to get acquainted with modern techniques in education.		
13	MCBP and traditional teaching practice program for in-service teachers are equal.		
14	MCBP requires the service of well experienced and qualified supervisor.		
15	MCBP has a little value to develop the ability of healthy criticism and tolerance among in-service teachers.		
16	MCBP partly meets the problems of real classroom situations presenting to simulation situations.		
17	MCBP provides an opportunity how to manage the classroom disciplines.		
18	MCBP provides teachers to employ different techniques according to the situation at appropriate time and place in the classroom.		
19	MCBP creates an ability to integrate all the teaching skills in one lesson in the classroom.		
20	MCBP is wastage of time.		
21	Plan-teach and continuous re-teach cycles in MCBP create boredom among in-service teachers.		
22	MCBP cannot be substitute for real classroom.		
23	MCBP provides opportunities for developing only a few teaching skills but real teaching needs more than these skills.		
24	Perfection in the content is also possible through the use of MCBP.		
25	MCBP is very supportive in all teaching subjects of the school curriculum.		

16	The classroom was achieved appropriately: main points of the lesson were consolidated, present knowledge was linked with he present knowledge, opportunities wee provided for applying present knowledge and present knowledge linked with future learning assignments.							
17	The assignment given to the pupils was appropriate: suited to individual differences, relevant to the content taught and adequate.							
EVALUATION								
18	Pupils' progress towards the objectives of the lesson was checked and the procedure of evaluation was appropriate: relevant to the objectives, valid, reliable and objectives.							
19	Pupil's difficulties in understanding a concept or principles were diagnosed by step-by-step questioning and suitable remedial measures were undertaken.							
MANAGERIAL								
20	Both attending and non-attending behaviors of the pupils were recognized: attending behavior was rewarded, directions were given to eliminate non-attending behavior , question were asked to check pupils' feeling s and ideas were used to recognized and non-attending behaviors.							
21	Classroom disciplined was maintained in the class: pupils followed teacher's instructions that were not related to the content.							

APPENDIX 'C'

MICROTEACHING COMPETENCE OBSERVATION SHEET (MCOS)

NAME: ----------

CLASS: ----------. SUBJECT: SOCIAL STUDY

TOPIC: ----------

DATE: ----------. DURATION: ----------

SUPERVISOR'S NAME: ----------

-Mark (√) the relevant box according to your observations.

S. NO	COMPONENT OF SKILL OBSERVED DURING CAPACITY BUILDING PROGRAM	RATING SCALE				
1	SKILL OF SET-INDUCTION	1	2	3	4	5
A	Used the interesting activity.					
B	Used the previous knowledge by asking questions.					
C	A teacher was able to create interest and motivation about lesson among students.					
D	The introduction period was appropriate.					
E	Ideas, statements and questions were in a sequence.					
F	Used inappropriate skill of set induction.					
2	SKILL OF REINFORCEMENT					
A	Used +ve verbal reinforcement (good/v. good/excellent)					
B	Used +ve non-verbal reinforcement (smiling/patting etc.)					
C	Used –ve verbal reinforcement (not at all, stupid etc.)					
D	Used non-verbal reinforcement (frowning, staring, looking angrily etc.)					
E	Used reinforcement properly.					
F	Used inappropriate skill of reinforcement.					

3	**SKILL OF EXPLAINING**					
A	Used word connecting the ideas/ statement about content.					
B	Used explaining links.					
C	Used activity for supporting explanation.					
D	Used examples appropriately for explanation.					
E	Covered essential concepts.					
F	Used inappropriate skill of explaining.					
4	**SKILL OF QUESTIONING**					
A	Used prompting questions.					
B	Questions were asked for further information.					
C	Redirection.					
D	Refocusing					
E	Used questions for creating critical awareness.					
F	Used inappropriate skill of questioning.					
5	**SKILL OF GESTURING**					
A	Body movements (eyes/hands/head) were used.					
B	Used the voice fluctuation (low/high).					
C	Used the focusing (look here / note it/ and listen to me etc.) on core points of the content.					
D	Interaction among pupils occurred.					
E	Used the pauses.					
F	Used inappropriate skill of gesturing.					
6	**SKILL OF CLOSURE**					
A	Selected the appropriate activity.					
B	Summarized the main points of the lesson.					
C	Linked with content briefly.					
D	Used evaluation of content asking questions etc.					
E	Revised the important concepts involving pupils.					
F	Used inappropriate skill of closure.					

APPENDIX 'D'

ATTITUDE OF PROSPECTIVE TEACHERS TOWARDS MICROTEACHING CAPACITY BUILDING PROGRAM

Please look at the statements and express your opinion in the relevant column by marking (√). Agree or Disagree has written against each proposition.

Note: MCBP is an abbreviation of Microteaching Capacity Building Program.

S. No	Statement	Agree	Disagree
1	MCBP increases the teaching skills of in-service teachers		
2	MCBP decreases the complexities of the real classroom.		
3	MCBP provides confidence to in-service teachers		
4	MCBP stimulates the in-service teachers to plan the lesson before entering the classroom.		
5	MCBP develops the specific teaching skill in in-service teacher.		
6	MCBP builds up analytical thinking among in-service teachers.		
7	MCBP constructs self-evident attributes in teachers.		
8	MCBP presents prompt and constructive feedback.		
9	MCBP generates cooperation, respect & esteem, admiration, democratic attitude and unity etc in in-service teachers.		
10	MCBP is an essential mean for improving education of teachers.		
11	MCBP motivates in-services teachers to self-study and creativity.		

12	MCBP helps teachers to get acquainted with modern techniques in education.		
13	MCBP and traditional teaching practice program for in-service teachers are equal.		
14	MCBP requires the service of well experienced and qualified supervisor.		
15	MCBP has a little value to develop the ability of healthy criticism and tolerance among in-service teachers.		
16	MCBP partly meets the problems of real classroom situations presenting to simulation situations.		
17	MCBP provides an opportunity how to manage the classroom disciplines.		
18	MCBP provides teachers to employ different techniques according to the situation at appropriate time and place in the classroom.		
19	MCBP creates an ability to integrate all the teaching skills in one lesson in the classroom.		
20	MCBP is wastage of time.		
21	Plan-teach and continuous re-teach cycles in MCBP create boredom among in-service teachers.		
22	MCBP cannot be substitute for real classroom.		
23	MCBP provides opportunities for developing only a few teaching skills but real teaching needs more than these skills.		
24	Perfection in the content is also possible through the use of MCBP.		
25	MCBP is very supportive in all teaching subjects of the school curriculum.		