

TEACHER EDUCATION AND IMPACT OF MICROTEACHING SKILLS IN TEACHING-LEARNING PROCESS

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ABSTRACT

According to NCTE (1998) in Quality Concern in Secondary Teacher Education, the teacher plays a pivotal role in any educational program. It is the teacher whose knowledge, attitudes, behaviours and skills are effectively performed in the classroom, school and Wider community. Education is the process by which society deliberately transmits its accumulated knowledge, skills and values from one generation to another generation. Teacher education develops physical, professional, psychological and moral skills. For this qualitative education i.e competent teachers are required in innovated in teacher education. Competent teachers are judged by degree to which it develops competencies, skills and activities needed for successful functioning of teachers.

As teaching is a unique and complex activity, student teachers face some traumatic experiences in the classroom, as a result they develop a negative attitude towards teaching. So, it becomes impossible for the trainees to acquire the desired level of teaching experience. To overcome this drawback of the practice teaching programme, a new way evolved i.e Microteaching. Microteaching is a very important part of education technology. It is technically a scaled down teaching. Microteaching is a technique of presenting a small portion of the lesson using specified teaching skills to a small number of pupils in a short duration of time. The teaching skills can be developed separately through training.

The main purpose of this paper is observe the effectiveness of teacher training programme through Microteaching skills. This study will also observe the effectiveness of training through Integration of Microteaching skills on the enhancement of General Teaching Competence of science student teachers.

Key words: Teacher education, Microteaching, Teaching Skills, General Teaching Competence.

1. INTRODUCTION:

Teacher education refers to the policies and procedures designed to equip prospective teachers with the knowledge, attitudes, behaviours and skills they require to perform their tasks effectively in the classroom, school and wider community.

Although ideally it should be conceived of and organized as, a seamless continuum, teacher education is often divided into these stages:

I. Initial teacher training/ education (a pre-service course before entering the classroom as a fully responsible teacher)

II. Induction (the process of providing training and support during the first few years of teaching or the first year in a particular school).

III. Teacher development or continuing professional development. There is a longstanding and ongoing debate about the most appropriate term to describe these activities. The term 'teacher training' (which may give the impression that the activity involves training staff to undertake relatively routine tasks) seems to be losing ground at least in the U.S. to

'teacher education' (with its connotation of preparing staff for a professional role as a reflective practitioner). Initial Teacher Education in many countries takes place largely or exclusively in institutions of Higher Education.

An educational institution performs a significant function of providing learning experiences to lead their students from the darkness of ignorance to the light of knowledge. The key personnel in the institutions who play an important role to bring about this transformation are teachers. As stated by NCTE (1998) in Quality Concerns in Secondary Teacher Education. The teacher is the most important element in any educational program. It is the teacher who mainly responsible for implementation of the educational process at any stage. This shows that it is imperative to invest in the preparation of teachers, so that the future of a nation is secure. The importance of competent teachers to the nation's school system can in no way be overemphasized. The National Curriculum Framework 2005 places demands and expectations

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on the teacher which need to be addressed by both initial and continuing teacher education.

It is well known that the quality and extent of achievement are determined primarily by teacher competence, sensitivity and teacher motivation. The National Council for Teacher Education has defined teacher education as a programme of education, research and training of persons to teach from pre – primary to higher education level. Teacher Education is a programme that is related to the development of teacher proficiency and competence that would enable and empower the teacher to meet the requirements of the profession and face the challenges therein. According to Goods Dictionary of Education - Teacher education means all the formal and non-formal activities and experiences that help to qualify a person to assume responsibilities of a member of the educational profession or to discharge his responsibilities more effectively. In 1906- 1956, the program of teacher preparation was called teacher training. It prepared teachers as mechanics or technicians. It had narrower goals with its focus being only on skill training. The perspective of teacher education was therefore very narrow and its scope was limited. As W.H. Kilpatrick put it, Training is given to animals and circus performers, while education is to human beings. Teacher education encompasses teaching skills, sound pedagogical theory and professional skills.

Education = Teaching Skills + Pedagogical theory + Professional skills.

Teaching Skills: A teaching skill has been defined as a group of teaching acts/ behaviour intended to facilitate pupils learning directly or indirectly. It would include providing and practice in the different techniques approaches and strategies that would help the teachers to plan and impart instruction, provided appropriate reinforcement and conduct effective assessment. It includes effective classroom management skills, preparation and use of instructional materials and communication skills.

Pedagogical theory: Includes the philosophical, sociological and psychological considerations that would enable the teachers to have a sound basis for practicing the teaching skills in the classroom. The theory is stage specific and is based on the needs and requirements that are characteristic of that stage.

Professional Skills: Include the techniques, strategies and approaches that would help teachers to grow in the profession and also work towards the

growth of the profession. It includes soft skills, counselling skills, interpersonal skills, computer skills, information retrieving and management skills and above all lifelong learning skills. An amalgamation of teaching skills, pedagogical theory and professional skills would serve to create the right knowledge, attitude and skills in teachers, thus promoting holistic development.

2. NATURE OF TEACHER EDUCATION:

➤ Teacher education is a continuous process and its pre- service and in- service components are complimentary to each other. According to the International Encyclopedia of Teaching and Teacher Education (1987) Teacher education can be considered in three phases: Pre- service, Induction and In-service. The three phases are considered as parts of a continuous process.

➤ Teacher Education is based on theory that Teachers are made, not born in contrary to the assumption. Teachers are born not made. Since teaching is considered an art and a science, the teacher has to acquire not only knowledge but also skills that are called – tricks of the trade. ➤ Teacher education is broad and comprehensive. Besides pre-service and in-service programmes for teachers, it is meant to be involved in various community programmes and extension activities, viz, adult education and non- formal education programmes, literacy and development activities of the society. It is ever- evolving and dynamic. In order to prepare teachers who are competent to face the challenges of the dynamic society. Teacher education has to keep abreast of recent developments and trends.

➤ The crux of the entire process of teacher education lies in its curriculum, design structure, organization and transaction modes, as well as the extent of its appropriateness.

➤ As in other professional education programmes the teacher education curriculum has a knowledge base which is sensitive to the needs of field applications and comprises meaningful, conceptual blending of theoretical understanding available in several cognate disciplines. However, the knowledge base in teacher education does not comprise only an admixture of concepts and principles from disciplines, but a distinct 'gestalt' emerging from the conceptual blending, making it sufficiently specified.

➤ Teacher education has become differential into stage-specific programmes. This suggests that the knowledge base is adequately specialized and diversified across stages, which should be utilized for developing effective process of preparing

entrant teachers for the functions which a teacher is expected to perform at each stage.

➤ It is a system that involves an interdependence of its Inputs, Process and Outputs.

3. INNOVATIONS IN TEACHER EDUCATION:

Qualitative education plays an important role in technological advancement. When we talk about qualitative education, we think to competent teachers, who impart education. Therefore, to prepare competent teachers, teaching technology has developed pre-service and in- service teacher education programmes. Now, there is a demand for competent teachers at all levels of education and the teacher education programmes, claiming production of competent teachers must be judged by the degree to which it develops competencies, skills and activities needed for successful functioning of teachers.

The Education Commission (1964-66) have pointed out that, *"off all the different factors which influence the quality of education and its contribution to national development, the quality, competence and character of teachers are undoubtedly the most significant."*

To prepare an efficient teacher is a challenging task today. Previously, it was thought that teacher are born not made but now recent researches in this field proved that efficient and competent teachers can be produced by modifying their behaviour. The purpose of the teacher education programmes is to prepare effective and competent teachers. The success of any educational reform depends on the quality of teacher, which in turn depends to a large extent on the quality of the teacher education programme. The success of teacher education programme depends on developing a skill to identify different teaching objectives, attitude and patterns of teaching behaviour among the college students, who have been preparing to enter the teaching profession. The success also depends on enabling the student teacher to perform certain teaching behaviour patterns, string them together into strategies of classroom instruction and carry them out to compare different patterns of his own teaching behaviour and different strategies of teaching in terms of its consequences.

Today the developed countries give great support to education as they know in the future it is only possible for them to have power and voice by educating people who are expert in their own fields. The teachers have the key role in education process. The most important role of the teacher in a school is

to guide students while providing knowledge. With this role the teachers shapes the terminal behaviours of the students, helps the students to have positive relationships and makes them skilful.

At the centre of advanced Study in Education, Baroda, Llalita (1976) has listed various skills required for secondary teachers. These skills have been classified under three headings: Pre-instructional skills, Instructional skills and Post-instructional skills. Researchers at CASE, Baroda have developed thirteen skills as per the indian conditions. These are skills in writing instructional objectives, introducing a lesson, fluency in questioning, explaining, illustrating with examples, stimulus variation, silence and non-verbal cues, reinforcement, increasing pupil participation, using chalk board, achieving closures, and recognising and attending behaviour. These are different according to the subject area, class level and other varieties. Passi (1976) gives a list of twenty- one skills based on the work done in CASE, Baroda. Jangira, Sing and Mattbo (1979) modified the work and arrived at twenty teaching skills while working with the teacher educators, student teachers and in-service teachers.

The minimum requirement of any teacher training programme is that it should enable the trainee to acquire the basic skills and competence of a good teacher. Teaching is a unique and complex activity. It is mysterious in its success and failure. On account of all such traumatic experience the trainees develop a negative attitude towards teaching and they do not want to face the class. Hence, it becomes completely impossible for the trainees to acquire the desired level of teaching experience.

To overcome these drawbacks of the practice teaching programme and thereby to encourage it, a new way emerged i.e. Microteaching.

4. MICROTEACHING:

Microteaching is technically a scaled-down teaching. It is also known as simulated encounter designed and teaching laboratory. It is a teacher training technique of both pre-service and in-service teachers. Microteaching reduce the complexities of normal classroom teaching, thus allowing the teacher to concentrate on the acquisition of a teaching skill (Bush, 1966, Cooper, 1967; Allen and Ryan, 1969)

Microteaching is a technique of presenting a small portion of the lesson for detailed study and pinpointed guidance by taking a microscopic view. It is a training technique which requires pupil teachers to teach a single concept, using specified

teaching skills to a small number of pupils in a short duration of time. Each teaching skill can be developed separately through training.

There are seven steps in microteaching; which are shown below diagrammatically-

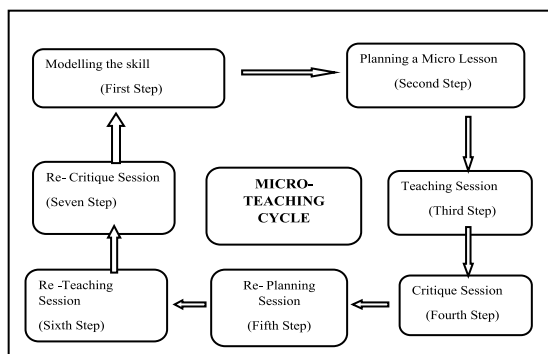


Fig: 1 Microteaching cycle

5. TYPES OF MICROTEACHING SKILLS:

5.1 Skill of Explaining:

The acquisition of this skill enables the student teachers to explain the content properly. The components of this skill are explaining links, beginning statements, concluding statements, questions to test pupils' understanding and questions followed by pupils' correct responses.

5.2 Skill of Stimulus Variation:

This skill contains components that encourage student-teachers to change stimuli to sustain students' attention. The components of this skill are movements, change in speech pattern, gestures, focusing and oral-visual switching.

5.3 Skill of Probing questioning:

This skill contains the components that examines whether students genuinely know the correct answers. The components of this skill are-prompting, seeking further information, refocusing, redirection and increasing critical awareness.

5.4 Skill of Reinforcement:

This skill contains the components that a trainee should use when a student gives correct response. These components are positive verbal reinforcement, positive non-verbal reinforcement, repeating and rephrasing students' correct answers and writing students' correct answers on the chalk-board.

5.5 Skill of Illustrating with Example:

This skill contains components that train the

students in using simple, relevant and interesting examples.

5.6 Additive Strategy:

Additive strategy refers to the strategy of integration of the skill components of different skills wherein, after mastering the first skill, second skill is practiced and then the trainees practice the skill components of both the skills together. This process is followed by adding a new skill every time till the desired skills are mastered.

5.7 Diode Strategy:

In this strategy, training is given in pairs. The first two skills are practiced separately, and then training is given by integrating the components of these two skills. After this training is given in the third and the fourth skill separately, followed by the integration of these two skills. The same process is followed for the succeeding pairs. Finally all the pairs are combined in an integrated manner.

5.8 Skill of Interacting with Diagrams and Models:

The nature of Science is such that real clarification is developed through diagrams and models. The various components of this skill enable the student teachers to identify the various parts of the diagrams & models, explain their respective functions, draw one or more parts of the diagrams and explain how the same can remain intact. This is a specific subject skill.

6. STUDIES CONDUCTED ON EFFECTIVENESS OF MICRO-TEACHING

Micro-teaching was first carried out at Stanford University in 1963 (Allen and Clark,1967), the results of which were clear and encouraging. Students trained in the micro-teaching clinic made improvement in the skills practised and were judged to display greater teaching competence than their colleagues who were in conventional training approach.

In another study at Stanford on the effectiveness of first micro-teaching clinic (bush (1966), it was revealed that micro-teaching group demonstrated higher level of teaching competence than the traditional practice teaching group, and the performance of student teachers in micro-teaching situation was an effective predictor of their subsequent classroom performance.

Singh (1984) in his study found that:

➤ The student teachers trained using micro-teaching under the simulated conditions acquired

better teaching competency than those trained under the traditional training method.

➤ The student teachers trained using micro-teaching under real classroom conditions acquired better teaching competency than those trained under the traditional training method.

➤ The effectiveness of the micro-teaching training technique was more significant in respect of those trained under real classroom conditions than those trained under simulated class- room conditions in developing the teaching competence of student teachers and the micro-teaching training technique made a significant impact in developing a positive attitude in the student teachers towards micro-teaching

The major findings of the study by Khan (1985) was that student teachers treated with the technique of skill based microteaching were found to be more effective in general teaching competency than those in the traditional method of teaching English. It also revealed that micro-teaching technique had proved itself to be more effective teacher training technique than the traditional method when subjected to factorial analysis of variances.

The effectiveness of microteaching, in Indian context in the acquisition and development of various teaching skills by the pre-service teachers during their microteaching practices were reported in the following studies:

Marker(1972) found that micro-teaching as a better technique than conventional approach in the development of certain teaching skills on set induction, stimulus variation, questioning, reinforcement and closure.

Skill of developing indirect teacher behavior by Chudasma (1972), skill of questioning, reinforcement, silence and non-verbal cues, illustrations and use of examples by Passi and Shah(1974), skill of fluency in questioning and probing questioning by Abraham (1974), Skill of divergent questions, convergent questions and probing questions by Vaze (1975). Skills of introducing a lesson, achieving closure, fluency in questioning, probing questioning and reinforcement with the instructional materials prepared for these skills by Passi (1976). Skills of increasing pupil participation, explaining, using black-board, writing instructional objectives including the development of instructional material by Lalithama (1976).

7. OBJECTIVES OF THE TOPIC:

From the above various studies on Microteaching, following objectives can be created:

1 To study the effectiveness of micro-teaching compared to the traditional practice of teaching skills of General Teaching Competence.

1 To study the effectiveness of acquiring various teaching skills in microteaching situations on the development of teaching competence.

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8. HYPOTHESES

1. There exists no significant difference in teaching effectiveness of student-teachers teaching Life Science with and without microteaching skills.

2. There exists no significant difference in teaching effectiveness of student-teachers teaching Physical Science with and without microteaching skills.

9. DESIGN OF THE STUDY:

The study was experimental in nature. Pre-test and Post- test experimental design has been used to ascertain its effectiveness. The sample constitutes

10 Life Science student-teachers and 10 Physical Science student-teachers. The investigator prepared microlessons on 8 microteaching skills. The developed microlessons were shown to experts from the field of educational technology. The student-teachers delivered their first eight lessons without microteaching skills. Then they delivered their eight lessons with microteaching skills. The investigator observed the microlessons with the help of Observation Schedule.

10. RESULTS AND DISCUSSION: Effectiveness of acquiring various microteaching skills in teaching Life Science and Physical Science -

TABLE- 1 : Teaching effectiveness of student-teachers in Life Science

Skill	Treatment	N	Mean	SD	SE _D	t
Skill -1	PT	10	1.24	0.44	0.19340	6.593*
	PMT	10	2.51	0.69		
Skill -2	PT	10	1.01	0.68	0.15578	7.126*
	PMT	10	2.11	0.74		
Skill -3	PT	10	1.17	0.35	0.16667	6.300*
	PMT	10	2.22	0.49		
Skill -4	PT	10	1.02	0.64	0.20290	4.756*
	PMT	10	1.98	0.71		
Skill -5	PT	10	0.73	0.37	0.15129	9.915*
	PMT	10	2.23	0.62		
Skill -6	PT	10	1.08	0.41	0.23558	6.792*
	PMT	10	2.68	0.67		
Skill -7	PT	10	0.85	0.69	0.19006	7.998*
	PMT	10	2.37	0.55		
Skill -8	PT	10	0.97	0.55	0.26965	5.155*
	PMT	10	2.36	0.94		

* Sig. at 0.01 level

Table-1 shows that there exists a difference in mean scores of pre and post treatment of microteaching skills and the 't' value is significant at 0.01 level of significance. Hence it can be concluded that there exists difference in teaching effectiveness of student-teachers with and without microteaching skills in Life science.

TABLE- 2 : Teaching effectiveness of student-teachers in Physical Science

Skill	Treatment	N	Mean	SD	SE _D	t
Skill -1	PT	10	1.30	0.39	0.21114	4.997*
	PMT	10	2.36	0.70		
Skill -2	PT	10	0.93	0.71	0.17102	6.110*
	PMT	10	1.98	0.85		
Skill -3	PT	10	1.21	0.40	0.20131	4.744*
	PMT	10	2.16	0.52		
Skill -4	PT	10	1.12	0.53	0.22246	3.776*
	PMT	10	1.96	0.84		
Skill -5	PT	10	0.83	0.57	0.22682	5.665*
	PMT	10	2.11	0.67		
Skill -6	PT	10	1.08	0.39	0.23977	6.298*
	PMT	10	2.60	0.68		
Skill -7	PT	10	1.06	0.54	0.22564	4.454*
	PMT	10	2.06	0.74		
Skill -8	PT	10	0.96	0.63	0.20836	5.543*
	PMT	10	2.11	0.89		

* Sig. at 0.01 level.

Table-2 shows that there exists a difference in mean scores of pre and post treatment of microteaching skills and the 't' value is significant at 0.01 level of significance. Hence it

can be concluded that there exists difference in teaching effectiveness of student-teachers with and without microteaching skills in Physical Science.

Thus, the hypotheses formulated that there exists no significant difference in teaching effectiveness of student teaching life science and Physical Science with and without microteaching skill is rejected.

One of the objectives of the study was to find out the difference in teaching effectiveness of student-teachers with and without microteaching skills. The scores of first eight lessons delivered without incorporating microteaching skills were used as Pre-Treatment (PT) scores and those obtained through incorporating microteaching skills has been used as Post- Microteaching Treatment (PMT).

REFERENCES:

- 1) Abraham, P.P.(1974). 'Effectiveness of Microteaching in Developing the Skill of Questioning'. Unpublished M.Ed. Dissertation, The M.S. University of Baroda, Baroda.
- 2) Allen, D.W., R.J.Clark Jr. (1967). 'Microteaching' Its Rationale, The High School Journal, 51, 75-9.
- 3) Allen, D.W., A.W.Eve (1968). Microteaching: Theory and Practice. 7(5), 181-5.
- 4) Allen, D.W and Ryan, K. (1969). Microteaching. Addison Wesley. Reading, Mass, U.S.A
- 5) Asija, D.P., N.Kumari (1979). A Comparative Study of the Effect of Microteaching under varying sources of feedback upon general Teaching Competence of Student Teachers and their Analysis, Relative Effectiveness of Variations in Microteaching Components-An experimental Study, MT-10, NCERT.
- 6) Bawa, M.S. (1985). Effective of Microteaching with Planned Integration training following Summative Model and microteaching without Planned Integration Training on the General teaching Competence of Teacher Trainees, Unpublished Ph.D Thesis, Department of Education, Delhi University.
- 7) Bhatia, S.K. (1984). A Comparative Study of Microteaching with and without Integration Training, Unpublished Ph.D. Thesis, Jamia Millia Islamia.
- 8) Borg, W.R., et al (1970). A Microteaching Approach to Teacher Education, Collier Macmillan, London.
- 9) Chawla V, Thukral P.(2011). Effects of student feedback on teaching competence of student teachers, a microteaching experiment. Contemp Educ Technol.
- 10) Chudasama, R.R. (1971). "Trying out of microteaching procedure in student teaching". Unpublished M.Ed. Dissertation, M.S. University, 1971.
- 11) Chuanjun He, Yan, C (2011). Exploring Authenticity of Microteaching in Pre-service Teacher education Programmes, Teaching Education, Vol. 22, No.3, 291-302.
- 12) Clift, J.H., B.R. Smoot (1970). 'Effects on the Verbal Teaching Behaviors of Beginning Secondary Teacher candidates-Participations in a Program of Laboratory Teaching', Educational Leadership (Research Supplement), 165-169.

- 13) Das, R.C, B.K.Passi (1977). Experimental Studies on Differential Effectiveness of Microteaching Components, NCERT and Department of Education, Indore University-A Field Experiment.
- 14) Dave, C.S.(1987). Relative Effectiveness of Microteaching in having Summative model of Integration versus Mini teaching Model in terms of GTC.
- 15) Dosajh, N.L. (1975). Modification of Teacher Behaviour Through microteaching, Sterling Publisher Pvt. Ltd., New Delhi.
- 16) Dwivedi, J. (1988). An Investigation into the Effectiveness of Microteaching in the Development of Psychomotor Skills in Biology Practicals, Ph.D.-Education, University of Allahabad.
- 17) Flanders, N. A. (1963). Intent, action and 'feedback: A preparation for teaching. Journal of Teacher Education. 14,251-260.
- 18) Fortune, J.C., et al (1967). The Stanford Summer Microteaching Clinic, 1965, The Journal of teacher Education. Pp 389-93.
- 19) Jangira, N.K., et al (1980). Use of Microteaching for Improving General Teaching Competence of In-service Teachers, A Field Experiment, NCERT.
- 20) John, W.Best, James, V.Kahn (Tenth Edition-2006). Research in Education, Pearson education Inc. Upper Saddle River, New Jersey, USA.
- 21) Joshi, S.M. (1977). Effectiveness of Microteaching as a Technique in Teacher Preparation Programme, Thesis, M.S University, Baroda.