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**Investigating the Effectiveness of
Microteaching in Enhancing Professional
Teaching Skills among In-Service Teachers**

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Abstract

Microteaching is a valuable scientific approach to developing professional teaching skills among in-service teachers. The objective of this study was to investigate the impact of microteaching on the professional skill development of in-service teachers. Eight null hypotheses were formulated to achieve this objective. The pretest–posttest equivalent group design was considered suitable for this experimental research. The study included experimental and control groups of in-service teachers, each consisting of 25 participants. A General Teaching Competence Scale (GTCS) and a Microteaching Competence Observation Sheet (MCOS) were administered for data collection. A microteaching laboratory was set up for the intervention. The experimental group underwent a one-month microteaching program, while the control group continued teaching in their respective schools. The collected data were analyzed using t-tests and mean scores. The study concluded that microteaching is an effective method for enhancing professional teaching skills among in-service teachers. It was further recommended that a microteaching program should be implemented for all in-service teachers in Pakistan. Additionally, all district training centers should be equipped with digital resources to support microteaching programs. Instructional materials on microteaching skills should be developed and distributed among in-service teachers.

Keywords: Microteaching, teaching skills, in-service teachers & experimental design.

INTRODUCTION

Microteaching is a meaningfully scientific and reflective approach to make teacher education program effective and meaningful. It is considered worthwhile technique for in-service teachers (Sree & Rao, 2004) in order to strengthen a particular skill and demonstration purposes also (Sharma & Chandra, 2003; Romesh & Sharma, 2005). The strategy makes instructors intelligent specialists to memorize and acclimatize instructing abilities beneath controlled and watching conditions (Rao & Sreedhar, 2006). A. W. Dwight Allen and Robert Bush of the Stanford College to begin with coined the term microteaching in 1963. A number of tests have been conducted in USA, UK and Netherlands (Sharma & Chandra, 2003). A survey was conducted within the US as of late, on the utilize of microteaching in instructors instruction programs. It was found that about 150 colleges and colleges were utilizing microteaching within the auxiliary instruction programs and approximately 50 detailed the starting of its utilize in in-service programs (Aggarwal, 2004). The content analysis reported that it is picking up significance in instructing

calling. Microteaching is research facility method of educator preparing in which the complexities of typical classroom educating are rearranged (Qureshi, 2005; Rahman, 2005). It may be a scale down movement in terms of lesson measure (four to six understudies), the lesson (one unit) and course time (five or ten minutes) in arrange to create the particular instructing aptitude.

A few of the definitions of microteaching embraced by popular educationists are as take after:

“Microteaching may be a scaled down educating experience in class size and lesson time” (Allen, 1966). “Microteaching may be a framework of controlled hone that produces it possible to concentrate on indicated educating behavior and to hone instructing beneath controlled conditions” (Allen & Eve, 1968). “Microteaching may be a brief and important instructing show in which many educating aptitudes are independently practiced unless the educator get a handle on over expertise but all typically done beneath a controlled circumstance. It is analyzed and the method of treat is continuous on this premise till capability in specific instructing aptitude ” (Khalid, 1992).

Recently some distinguished educationists in microteaching defined it as:

“It could be a little gather movement that can be a strong instrument for the securing of skills. He encourage proposes that microteaching may be a cycle of occasions, which comprises of the execution of small scale abilities (that are viewpoints of a social or psychomotor aptitude such as inquiring questions), which is recorded on tape. This recording is at that point played back to the little bunch, taking after which the person and the gather assess the execution. The individual is at that point permitted to rehash the execution amid which the changes recommended amid the assessment are joined into the unused performance” (Quinn, 2000). “Microteaching is regularly centered on practicing a specific educating ability (e.g. , displaying clear informational, inquiring examining questions, utilizing wait-time fittingly, etc.) and as a rule includes educating disentangled in three ways: lesson estimate, lesson length and assignment complexity” (Benton-Kupper, 2001; Cruickshank & Metcalf, 1990; Grossman, 2005). Microteaching is exceptionally fundamental component of educator instruction framework. Subsequently, a number of investigates have been conducted to think about the affect of microteaching method and its distinctive viewpoints (Applebee, 2006; Gelula & Yudkowsky, 2003; Wealthy & Hannafin, 2009; Applebee, Langer, Nystrand and Gamoran 2003). The method of microteaching method is that a educator takes an work out of one particular instructing ability beneath the direction of boss, peers and (or) tape which watch trainee's execution in a research facility classroom and after that s/he watch execution on TV screen, gets input from his/her colleagues/peers and bosses who recommend suggestions almost his introduction of this educating aptitude. This strategy endures till the flawlessness in this expertise.

Critically analyzing situation about in-service education in Pakistan, it reveals that the quality of education has a declining trends, the poor and low quality of teachers (Economic Survey of Pakistan, 2002; Rehman et al, 2005). It is this perspective of teaching in-service teachers microteaching program has become so important and is essential for effective teaching

and achievement of educational objectives. Microteaching technique is being used in many countries of the world. But, teacher education and training institutions do not exploit microteaching technique in Pakistan. There is another observed fact that the technique is added in teacher education curriculum and training courses theoretically. However, there is the dire need of the time to add this practice practically and must be compulsory for in-service teacher education programs. Therefore, the researchers intend to conduct a study to investigate the effectiveness of microteaching to develop professional skills in teaching of in-service teachers.

OBJECTIVES OF THE STUDY

The objective of the study was to investigate the impact of microteaching to develop professional skills in teaching of in-service teachers.

NULL HYPOTHESES

The null hypotheses of the study were as:

H₀₁: In-service teachers of the experimental and control groups demonstrate equally in the posttest with respect to general teaching competence.

H₀₂: In-service teachers of the experimental and control groups demonstrate equally with respect to the professional teaching skill of set induction.

H₀₃: In-service teachers of the experimental and control groups demonstrate equally with respect to the professional teaching skill of reinforcement.

H₀₄: In-service teachers of the experimental and control groups demonstrate equally with respect to the professional teaching skill of explaining.

H₀₅: In-service teachers of the experimental and control groups demonstrate equally with respect to the professional teaching skill of questioning.

H₀₆: In-service teachers of the experimental and control groups demonstrate equally with respect to the professional teaching skill of gesturing.

H₀₇: In-service teachers of the experimental and control groups demonstrate equally with respect to the professional teaching skill of closure.

H₀₈: In-service teachers of the experimental and control groups demonstrate equally with respect to the cumulative teaching skills.

DELIMITATIONS

This research was delimited due to time and financial constraints as followings:

- The sample comprised only public elementary school in-service teachers in Tehsil Nankana Sahib.
- This study further confined to six core teaching skills only.
- Teaching material and procedure was prepared for presenting the lesson during treatment of Social Studies (Urdu version) from Punjab Text Book Board Lahore of class 4th to 8th.
- The treatment session was constrained to four weeks (5 to 6 hours) daily whereas duration of teaching practice was of two months in their respective classes and schools of in-service teachers.

LIMITATIONS

This research had the following limitations:

- The study was conducted at Govt. M. C. High School Nankana Sahib.
- There was no appropriate instrument available in Pakistan to measure general competence of in-service elementary school teachers. Accordingly, the Baroda General Teaching Competence Scale was taken on, in original form. It was used for obtaining the pretest and posttest scores of each group.

ASSUMPTIONS

It was assumed that all the in-service elementary school teachers knew the concept of microteaching.

METHODOLOGY

TYPE AND DESIGN OF RESEARCH

In this study true-experimental design was used to conduct the experiment on in-service teachers. The most important part of true experimental research is to select or choose the respondents randomly for conducting the experiment. Hence, the Pre-Test and Post-Test control group design is most appropriate design for this study (Fraenkel & Wallen, 2006). Two groups of respondents randomly assign and both were observed twice through pre-test and post-test method. The first measurement was served as pretest, while the second was as posttest. Random assignment or observation was collected at the same time for both groups. A diagram of this design is illustrated as below:

| | Randomized | Pretest | Groups | Posttest |
|-----------------|------------|----------------|--------|----------------|
| Treatment Group | R | O ₁ | X | O ₂ |
| Control Group | R | O ₁ | C | O ₂ |

R = Random Selection O₁ = Pretest X = Experimental Group
 C = Control Group O₂ = Posttest

Figure 2 Diagram of Pre-test and Post-test control group design

POPULATION AND SAMPLE

All the male and female in-service elementary school teachers of Government Schools at District Nankana Sahib was population of the study. Fifty in-service elementary school teachers were randomly selected for this research. They all had nearly equal with respect to educational qualification, age and experience (control of extraneous variables). These 50 teachers were administered a pretest. They were categorized into two groups; experimental group and control group on the basis of matched-group technique. Each group was comprised on twenty-five teachers. Both the groups were equated on the basis of their pretest scores.

MICROTEACHING MODEL FOR IN-SERVICE ELEMENTARY SCHOOL TEACHER’S TRAINING

According to the local requirement the following model was developed for microteaching training. This microteaching model was graphically sketched as below:

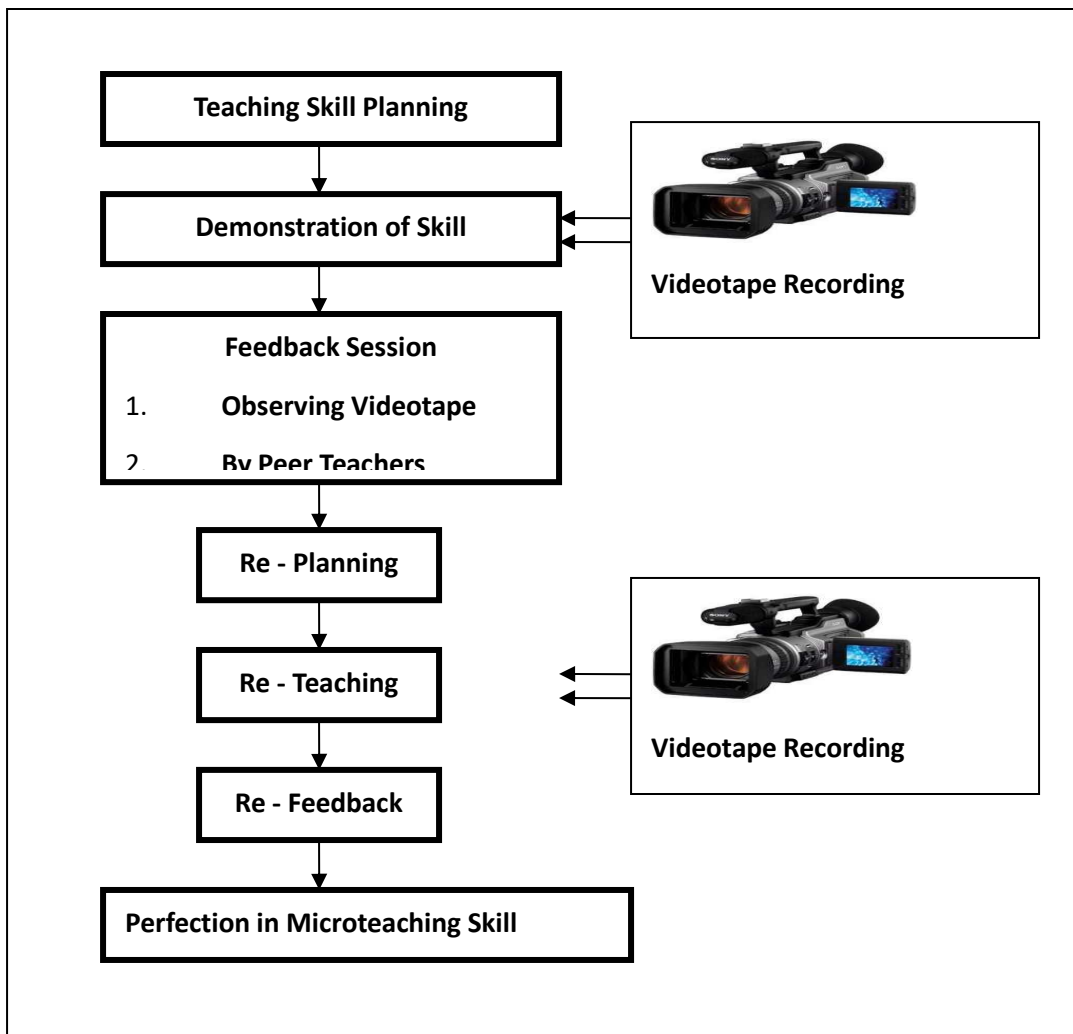


Figure 4: Microteaching Model for In-service Elementary School Teachers' Training

The local microteaching model comprised the following steps as:

1. Every trainee was prepared a lesson plan of five minutes on the specific teaching skill. The trainee teacher performed this prepared skill in front of the small class of students and digital camera videotaped this session.
2. Supervisors and in-services teachers were watching this trainee's performance.
3. When the first circle was over, the trainee teacher was provided feedback about his/her presentation by the following as:
 - First, the segment displayed on the TV screen. The trainee teachers himself/herself observed his/her demonstration and seek out his/her drawbacks. Self- analytical approach also adopted through this process among teachers.

- Second, his/her colleagues also observed his/her demonstration and pointed out about his/her performance by using the 2+2 protocol formula (it included two compliments and two suggestions about his/her presentation (Allen, Dwight & Wang 1996).
 - Third, observers provided feedback on trainee's performance
4. After this segment of discussion, re-planning and re-teaching of the lesson proceeded to re-discussion. The practice was lasted till the teacher's perfection in one specific skill.
 5. Experimental group of twenty five in-service elementary school teachers was provided one month microteaching training.
 6. All the teaching skills were practices by this order as:
 - Set Induction
 - Reinforcement
 - Explaining
 - Questioning
 - Gesturing
 - Closure
 7. Control group was provided the printed material and requested to go to their respective school for teaching practice during whole sessions.

INSTRUMENTS

This study utilized the general teaching competence scale was used for this study. It had very poor to excellent scale that was 1 to 7 points. This GTCS had five broad sections that covered all the general teaching skills. This test was used for pretest scores to determine the experimental and control groups. Immediately, after the intervention, this demonstration achievement test was administered to investigate the impact of microteaching program. The microteaching competence observation sheet was adopted with the permission of the concerned researcher. This observation scale contained six teaching skills. It had five points from 1 to 5.

DATA COLLECTION

Data was collected through following evaluation measures:

- All the three supervisory personnel remained in the classroom during the whole period to evaluate the lesson of each in-service teacher individually and they filled in their evaluation sheets separately according to the program.
- When the assessment of each step was done, the mean difference of the given by all the supervisory was calculated to achieve the original score the each in- service teacher in each teaching skill.

DATA ANALYSIS AND FINDINGS

Data was tabulated on the Microsoft Excel and transferred on SPSS for employing the statistical procedures. The data analysis is presented below:

TABLE 1: ANALYSIS OF MEAN SCORES OBTAINED BY IN-SERVICE TEACHERS OF THE EXPERIMENTAL AND CONTROL GROUPS IN POSTTEST

| Groups | Mean | Standard Deviation | t-value | Sig. value |
|--------------|-------|--------------------|---------|------------|
| Experimental | 75.44 | 02.31 | 16.35 | 00.00 |
| Control | 66.52 | 01.44 | | |

Table 1 indicates the results of independent sample t-test. The null hypothesis (Ho1) was rejected on the basis of the analysis as ($t(48) = 16.35, p < 0.05$). It was inferred that in-service teachers of the experimental and control groups demonstrated significantly different in the posttest with respect to general teaching competence. Further, the in-service teachers of the experimental group ($M = 13.45$ & $SD = 1.49$) exhibited better in the general teaching competence as compared to the control ($M = 9.71$ & $SD = 0.76$) group.

TABLE 2: ANALYSIS OF MEAN SCORES OBTAINED BY IN-SERVICE TEACHERS OF THE EXPERIMENTAL AND CONTROL GROUPS IN PROFESSIONAL TEACHING SKILL OF SET INDUCTION

| Groups | Mean | Standard Deviation | t-value | Sig. value |
|--------------|-------|--------------------|---------|------------|
| Experimental | 12.50 | 00.63 | 19.52 | 00.00 |
| Control | 08.91 | 00.66 | | |

Table 2 shows the results of independent sample t-test. The null hypothesis (Ho2) was rejected on the basis of the analysis as ($t(48) = 19.52, p < 0.05$). It was inferred that in-service teachers of the experimental and control groups demonstrated significantly different with respect to the teaching skill of set induction. Further, the in-service teachers of the experimental group ($M = 12.50$ & $SD = 0.63$) displayed their professional teaching skill of set induction better as compared to the in-service teachers of the control ($M = 8.91$ & $SD = 0.66$) group.

TABLE 3: ANALYSIS OF MEAN SCORES OBTAINED BY IN-SERVICE TEACHERS OF THE EXPERIMENTAL AND CONTROL GROUPS IN PROFESSIONAL TEACHING SKILL OF REINFORCEMENT

| Groups | Mean | Standard Deviation | t-value | Sig. value |
|--------------|-------|--------------------|---------|------------|
| Experimental | 12.42 | 00.79 | 15.98 | 0.00 |
| Control | 09.06 | 00.68 | | |

Table 3 displays the results of independent sample t-test. The null hypothesis (Ho3) is rejected on the basis of the analysis as ($t(48) = 15.98, p < 0.05$). It is inferred that in-service teachers of the experimental and control groups demonstrated significantly different with respect to the professional teaching skill of reinforcement. More, the in-service teachers of the experimental group ($M = 12.42$ & $SD = 0.79$) exhibited their professional teaching skill of reinforcement better as compared to the control ($M = 9.06$ & $SD = 0.68$) group in professional teaching skill of reinforcement.

TABLE 4: ANALYSIS OF MEAN SCORES OBTAINED BY IN-SERVICE TEACHERS OF THE EXPERIMENTAL AND CONTROL GROUPS IN PROFESSIONAL TEACHING SKILL OF EXPLAINING

| Groups | Mean | Standard Deviation | t-value | Sig. value |
|--------------|-------|--------------------|---------|------------|
| Experimental | 13.07 | 00.86 | 20.57 | 0.00 |
| Control | 08.62 | 00.65 | | |

Table 4 demonstrates the results of independent sample t-test. The null hypothesis (Ho 4) is rejected on the basis of the analysis as ($t(48) = 20.57, p < 0.05$). It is inferred that in-service teachers of the experimental and control groups demonstrated significantly different with respect to the professional teaching skill of explaining. Further, the in-service teachers of the experimental group ($M = 13.07$ & $SD = 0.86$) revealed their professional teaching skill of explaining better as compared to the control ($M = 8.62$ & $SD = 0.65$) group.

TABLE 5: ANALYSIS OF MEAN SCORES OBTAINED BY IN-SERVICE TEACHERS OF THE EXPERIMENTAL AND CONTROL GROUPS IN PROFESSIONAL TEACHING SKILL OF QUESTIONING

| Groups | Mean | Standard Deviation | t-value | Sig. value |
|--------------|-------|--------------------|---------|------------|
| Experimental | 12.57 | 01.01 | 15.63 | 0.00 |
| Control | 08.67 | 00.72 | | |

Table 5 reveals the results of independent sample t-test. The null hypothesis (Ho 5) is rejected on the basis of the analysis as ($t(48) = 15.63, p < 0.05$). It is inferred that in-service teachers of the experimental and control group demonstrated significantly different with respect to the professional teaching skill of questioning. Further, the in-service teachers of the experimental group ($M = 12.57$ & $SD = 1.01$) performed their professional teaching skill of questioning better as compared to the control ($M = 8.67$ & $SD = 0.72$) group.

TABLE 6: ANALYSIS OF MEAN SCORES OBTAINED BY IN-SERVICE TEACHERS OF THE EXPERIMENTAL AND CONTROL GROUPS IN PROFESSIONAL TEACHING SKILL OF GESTURING

| Groups | Mean | Standard Deviation | t-value | Sig. value |
|--------------|-------|--------------------|---------|------------|
| Experimental | 12.27 | 00.75 | 17.35 | 0.00 |
| Control | 08.87 | 00.62 | | |

Table 6 exposes the results of independent sample t-test. The null hypothesis (Ho 6) is rejected according to the analysis as ($t(48) = 17.35, p < 0.05$). It is inferred that in-service teachers of the experimental and control groups had significantly different achievements with respect to the professional teaching skill of gesturing. Further, the in-service teachers of the experimental group ($M = 12.27$ & $SD = .75$) accomplished their professional teaching skill of gesturing better as compared to the control ($M = 8.87$ & $SD = 0.62$) group in professional teaching skill of gesturing.

TABLE 7: ANALYSIS OF MEAN SCORES OBTAINED BY IN-SERVICE TEACHERS OF THE EXPERIMENTAL AND CONTROL GROUPS IN PROFESSIONAL TEACHING SKILL OF CLOSURE

| Groups | Mean | Standard Deviation | t-value | Sig. value |
|--------------|-------|--------------------|---------|------------|
| Experimental | 12.65 | 00.92 | 17.16 | 0.00 |
| Control | 08.65 | 00.71 | | |

Table 7 depicts the results of independent sample t-test. The null hypothesis (H_0 7) is rejected on the basis of the analysis as ($t(48) = 17.16, p < 0.05$). It is inferred that in-service teachers of the experimental and control had significantly different achievement with respect to the professional teaching skill of closure. Further, the in-service teachers of the experimental group ($M = 12.65$ & $SD = .92$) executed in professional teaching skill of closure better as compared to the control ($M = 8.65$ & $SD = 0.71$) group.

TABLE 8: ANALYSIS OF MEAN SCORES OBTAINED BY IN-SERVICE TEACHERS OF THE EXPERIMENTAL AND CONTROL GROUPS IN CUMULATIVE PROFESSIONAL SKILLS OF TEACHING

| Groups | Mean | Standard Deviation | t-value | Sig. value |
|--------------|-------|--------------------|---------|------------|
| Experimental | 66.00 | 1.44 | 24.42 | 0.00 |
| Control | 56.28 | 1.36 | | |

Table 8 narrates the results of independent sample t-test. The null hypothesis (H_0 8) is rejected on the basis of the analysis as ($t(48) = 24.42, p < 0.05$). It is inferred that in-service teachers of the experimental and control groups had significantly different achievements with respect to general teaching competence. Further, the in-service teachers of the experimental group ($M = 66.00$ & $SD = 1.44$) performed in cumulative skills of teaching better as compared to control ($M = 56.28$ & $SD = 1.36$) group.

CONCLUSIONS AND DISCUSSION

The followings conclusions are drawn on the basis of the findings of the research:

Microteaching training program is an effective method for in-service elementary school teachers. It is an effective technique to develop general teaching competence and cumulative professional teaching skills. The microteaching program enhances the professional teaching skills, provides confidence, stimulates to plan the lesson before entering the class room, constructs analytical thinking, assembled self-evaluation attributes, presented prompt and constructive feed back, essential mean for improving education, motivates to self-study and creativity, develops the ability healthy criticism and tolerance through collaboration with other colleagues to share the professional ideas.

RECOMMENDATIONS

The followings suggestions are made on the bases of conclusions drawn to make the microteaching capacity building program more valuable:

Microteaching program should be put into practice for all in-service elementary school teachers in Pakistan. All the district training centers should be provided digital instruments facilities concerning microteaching program. Material concerning microteaching skills particularly used by elementary school teachers should be prepared. In-service teachers performance should be televised and send these videotaped to experts. They provide feedback and send them back to in-service teachers so that in-service teachers make better their performance. Microteaching clinics should be established at district level so that in-service teachers get improve themselves in these clinics. For further researches, a study should be conducted to investigate the effectiveness of microteaching in terms of students' learning and a follow up study should be conducted on teachers in the real classroom teaching environment in

the school. Particularly, a study should be carried out to investigate the quality of microteaching progress employed in teacher education.

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