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A study of micro-teaching approach and its effect on behavior modification of pupil teachers of teachers training institutions of west Bengal

Md Towhid Islam

towhid.123.amu@gmail.com

Department of Education, Aligarh Muslim University, Aligarh,
Uttar Pradesh

Bejarul Karim

bejarulkarim@gmail.com

Atal Bihari Bajpayee Viswa Vidyalaya, Bilaspur,
Chhattisgarh

ABSTRACT

Micro teaching is a technique through which pupil teacher chooses a single concept of content to deliver a short-lesson to a small group of pupils for a short period of time based on a single teaching skill. In this study, the researchers investigated the effect of micro teaching approach on behaviour modification of pupil teachers at secondary level of education. For this study, the researchers developed 'Teaching Skills Observation Scale' to analyze pupil teachers' teaching behaviour. The study found positive effect of micro teaching approach on behaviour modification of pupil teachers. Significant difference have been found between the mean scores of science stream pupil teachers and social science stream pupil teachers at first and final observation. The study also found that the mean scores of female pupil teachers were much higher than mean scores of male pupil teachers at both the first and final observation.

Keyword: *Micro Teaching, Teacher Training Institution, Teaching Skill, Pupil Teacher, Behaviour Modification*

1. INTRODUCTION

Quality of teaching is highly influenced by the quality of teacher. Teachers are highly accountable for high achievements of the students, better academic performance and moulding the students into good citizen. However, a teacher needs to be skilful to deal with the students in actual teaching learning process. Proper and adequate practice of teaching is essential for teacher training programs, as it provides first teaching experience to the pupil teachers and also helps to develop the knowledge, skills, and attitudes. Micro teaching is now widely used as an integral part of teacher training programmes. The ultimate aim of micro teaching technique is to bring changes in teaching behaviour among the trainees by teaching a short lesson to a small number of students. Micro teaching technique plays an important role in providing opportunity to the trainee for teaching in a controlled condition and immediate feedback to bring improvement in their teaching skills.

1.1 Micro Teaching

Microteaching is a scaled-down teaching encounter in class size and time (Allen DW, 1968). It is simply a training technique for trainee to develop teaching skills. (Ambili Remesh, 2013). Microteaching was first developed at Stanford University in 1960s to train high quality teachers. (Selda Bakır, 2014). Micro teaching is an approach to teach a single concept of content for a short period of time to a very small number of pupils. It consists of the following six stages: plan, teach, critique, re-plan, re-teach and re-critique (Selda Bakır, 2014). It employs real classroom situation for developing teaching skills among the trainee teachers (Ambili Remesh, 2013). Before going to the real classroom, it is necessary for trainee teachers to get feedback from the experts (field of teaching) to develop their teaching skills. This process of getting feedback for each skill is associated with the micro teaching. The process of teaching is very complicated. However, it can be analysed through simple teaching tasks or teaching skills. In micro teaching technique, the trainee teachers practice different set of teaching skills under specific and simplified situation till they attain mastery in the use of these skills. B.K. Passi (1976) has listed following Teaching Skills in his book "Becoming Better Teacher; Micro-teaching Approach": (i) Writing instructional objectives (ii) Introducing a lesson (iii) Fluency in questioning (iv) Probing

questioning (v) Explaining (vi) Illustrating with examples (vii) Stimulus variation (viii) Silence and non-verbal cues (ix) Reinforcement (x) Increasing pupil participation (xi) Using black board (xii) Achieving Closure (xiii) Recognizing attending behaviour. Micro teaching involves these skills and will be evaluated by a peer and a lecturer called supervisor. After micro teaching sessions, feedback is given to the pupil teachers by the evaluator.

1.2 Behaviour Modification:

The concept of behaviour modification was given by Edward Thorndike for the first time in his article "Provisional laws of Acquired Behaviour or Learning" in 1911. Behaviour Modification is based on principle of operant conditioning theory developed by America behaviorist B.F. Skinner (1904-1990). Skinner formulated the concept of operant conditioning, through which behaviour could be shaped by reinforcement or lack of it. The process of teaching implies variety of actions performed by a teacher to bring positive behaviour in students.

Teacher behaviour largely influenced the students learning outcome. The teacher behaviour and its influence on the learner can be understood from two dimensions: Personal qualities like respect, punctual, sympathetic, dynamic, etc. and Professional competencies like knowledge on the subject matter, effective communication, proper use of teaching aids, classroom management etc. The modification of teacher behaviour depends on multiple factors like home environment, environment of the institutions, teachers training, personal as well as the professional factors.

1.3 Objectives of the Study

- To study the effect of micro teaching approach on behaviour modification of pupil teachers at the secondary level of education.
- To compare the effect of micro teaching approach on behaviour modification among the science stream and social science stream pupil teachers.
- To compare the effect of micro teaching approach on behaviour modification of pupil teachers with regard to their gender.

1.4 Hypothesis of the Study

H_{0.1}. There will be no significant difference between the mean score of pupil teachers at the first observation (before practice of micro-teaching) and final observation (after practice of micro-teaching) at the secondary level of education.

H_{0.2}. There will be no significant difference between the mean score of science stream and social science stream pupil teachers at the first observation (before practice of micro-teaching) at secondary level of education.

H_{0.3}. There will be no significant difference between the mean score of science stream and social science stream pupil teachers at the final observation (after practice of micro-teaching) at secondary level of education.

H_{0.4}. There will be no significant difference between the mean score of male and female pupil teachers at the first observation (before practice of micro-teaching) at secondary level of education.

H_{0.5}. There will be no significant difference between the mean score of male and female pupil teachers at the final observation (after practice of micro-teaching) at secondary level of education.

2. METHODOLOGY OF THE STUDY

To carry out the investigation, the researchers have used observation method and for this purpose, 'Teaching skill observation Scale' has been developed by the researchers themselves. A sample of 130 pupil teachers (70 male and 60 female) are taken through simple random sampling techniques from six teacher training institutions affiliated to 'The West Bengal University of Teachers' Training, Education Planning and Administration'

2.1 Development of Teaching Skill observation Scale

For the construction of **Teaching skill observation Scale**, the researchers have selected six major components of micro teaching skills, namely- (i) Introducing the lesson (ii) use of blackboard (iii) Questioning (iv) Explanation (v) Stimulus Variation and (vi) Reinforcement. After selecting these components, the researchers framed 38 items for the assessment. The draft was given to the 5 experts and according to their suggestions, the draft was revised for several times by modifying, adding and rejecting some items. After the revision of draft, 28 items were prepared for final try out.

Table 2.1: Skill Wise Total Number of Items in Teaching Skill Observation Scale

S. No.	Teaching Skill	Total Number of Items
1	Skill of Introduction	5
2	Skill of Probing Question	5
3	Skill of explanation	7
4	Skill of Stimulus Variation	5
5	Skill of Black-board Writing	5
6	Skill of Reinforcement	5
	TOTAL	32

2.2 Reliability of the Tool

Reliability simply means consistency of scores obtained by the same persons on different set of time. The reliability of the Teaching Skill Observation Scale has been shown in Table 2.2.

Table 2.2

S No.	Components	Total Number	Cronbach's- α
1	Skill of Introduction	5	.856
2	Skill of Probing Question	5	.863

3	Skill of explanation	7	.813
4	Skill of Stimulus Variation	5	.758
5	Skill of Black-board Writing	5	.793
6	Skill of Reinforcement	5	.816

2.3 Validity of the Tool

Validity is that instrument or procedure that enables it to measure what it is suppose to measure. To establish the validity of ‘Teaching skill observation Scale’, the tool was given to 8 experts working in the field of education, psychology and language. They have rated ‘Teaching skill observation Scale’ in the following areas; language, Accuracy, relevancy and objectivity on five point rating scale.

Table 2.3: Experts’ rating tally to establish validity of Teaching skill observation Scale

S No.	Ratings	1	2	3	4	5	Total
	Areas	Poor	Below Average	Average	Good	Excellent	
1	Language	0	0	0	6	2	8
2	Accuracy	0	0	1	6	1	8
3	Relevancy	0	0	2	4	2	8
4	Objectivity	0	0	0	4	4	8
	Total	0	0	3	20	9	32

Table 2.3 indicates that in the teaching behaviour observation schedule, "Good" category rated by about more than 60 percent of the total score, "Excellent" category rated by about 28% and only 10% rated on "Average" category. Therefore, it can be stated that the tool is valid.

2.4 Data Collection Procedure

At the first day of micro teaching, the researcher sits in the last of the classroom and observed the teaching related skills by using ‘Teaching skill observation Scale’ developed by the researchers themselves. In this five point rating scale, the researcher has given the rate (number) according to the performance of teaching skills. The scale consists of 32 items and for each item, score 1 indicates poor teaching skill and score 5 indicates very high teaching skill. The researcher provided feedback to each pupil teacher at the end of the each skill. At the end of micro teaching, the researcher again started observation procedure in the same way and gave score according their teaching skills.

3. ANALYSIS AND INTERPRETATION

3.1. Objective Number I

To study the effect of micro teaching approach in behaviour modification of pupil teachers at the secondary level of education.

To investigate the first objective, the researchers observed the different teaching skills by using ‘Teaching skill observation Scale’ among the pupil teachers before and after the practice of micro teaching. The calculated value of mean and standard deviation of ‘Teaching skill observation Scale’ are given in table number 3.1.

Table 3.1: Mean Score of Teaching skill observation Scale

Pupil Teacher	Observation before Practice of Micro teaching		Observation after Practice of Micro teaching		CR Value	level of Significance	Null Hypothesis
	Mean	SD	Mean	SD			
Total Number=120	65.27	9.26	85.08	9.35	3.14	P<.01	Rejected

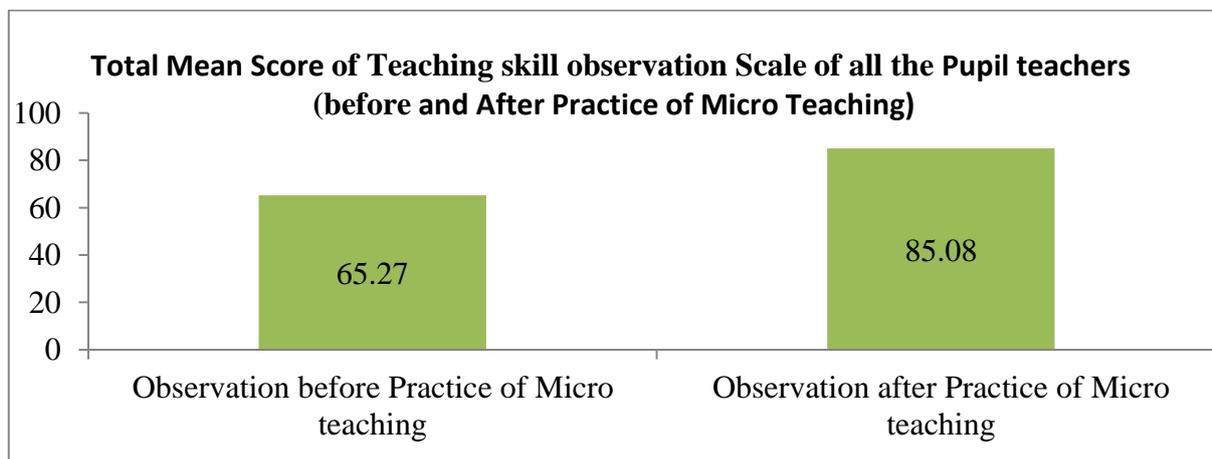


Fig. 3.1: Showing difference between the mean score of ‘Teaching skill observation Scale’ observed before and after practice of micro teaching.

Table 3.1 indicates that the mean value of Teaching skill observation Scale of all the pupil teachers at first observation (before practice of micro teaching) and final observation (after practice of micro teaching) have been found 65.27 and 85.08 respectively and also standard deviation have been found 9.26 and 9.35 respectively. The calculated CR value obtained by the pupil teachers at first and final observation is 3.14. So, it is found to be significant at 0.01 level of confidence. Hence, the null hypothesis ‘there will be no significant difference between the mean score of pupil teachers at the first observation (before practice of micro-teaching) and final observation (after practice of micro-teaching) at the secondary level of education’ is rejected.

3.2. Objective II

To compare the effect of micro teaching approach in behaviour modification of science stream and social science stream pupil teachers.

To investigate the second objective, the researchers observed the different teaching skills by using ‘Teaching skill observation Scale’ among the science stream and social science stream pupil teachers before and after the practice of micro teaching. The calculated value of mean and standard deviation of ‘Teaching skill observation Scale’ are given in table number 3.2.

Table 3.2: Mean Score of Teaching skill observation Scale

Pupil Teacher	Observation before Practice of Micro teaching		CR Value	level of Significance	Null Hypothesis
	Mean	SD			
Science Stream = 45	61.48	8.63	2.45	P<.01	Rejected
Social Science Stream = 75	Mean	SD			
	67.54	8.92			

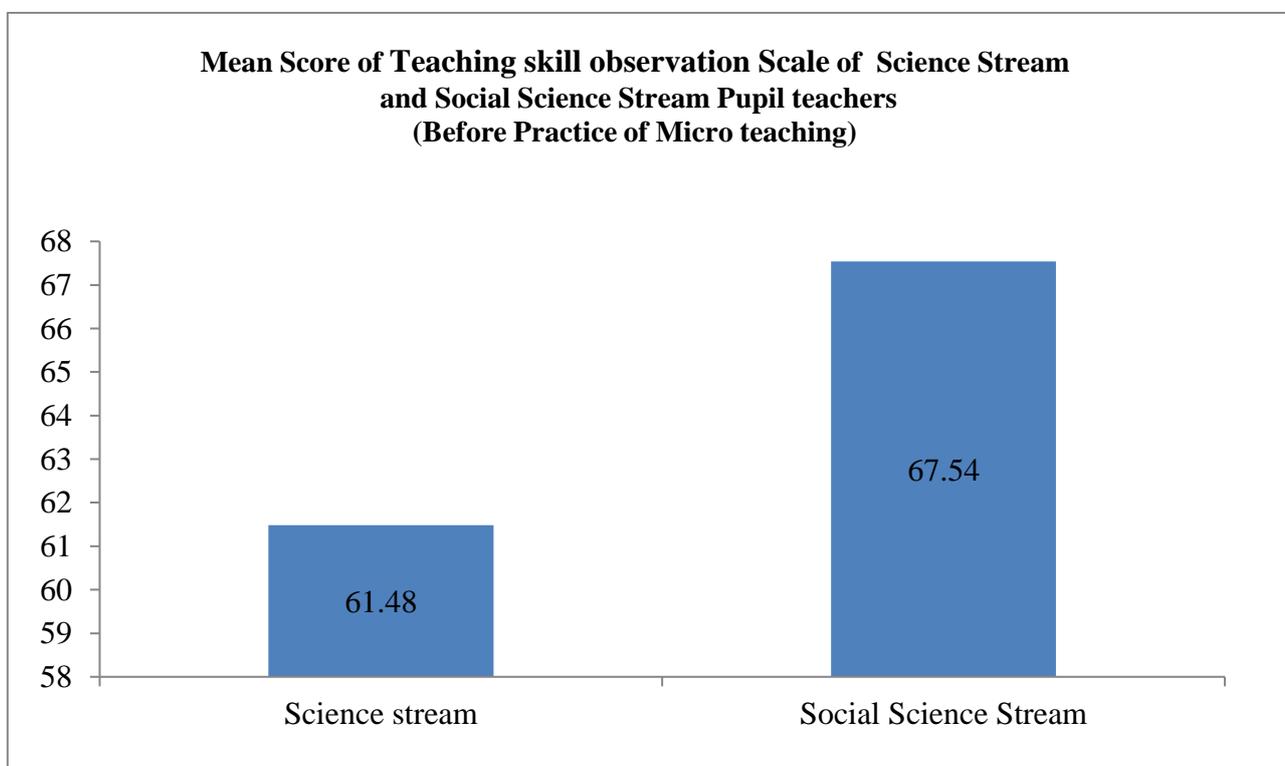


Figure 3.2: Showing difference between means score of ‘Teaching skill observation Scale’ of science stream and social science stream pupil teachers (before practice of micro teaching)

From the table.3.2, it is clear that the mean value of Teaching skill observation Scale of science stream and social science stream pupil teachers at the first observation (before practice of micro teaching) have been found 61.48 and 67.54 respectively and also standard deviation have been found 8.63 and 8.92 respectively. The calculated CR value obtained by the pupil teachers having science stream and social science stream at the first observation is 0.13. So, it is found to be significant at 0.01 level of confidence. Hence, the null hypothesis ‘there will be no significant difference between the mean score of science stream and social science stream pupil teachers at the first observation (before practice of micro-teaching) at the secondary level of education’ is rejected.

Table 3.3: Total Mean score of Teaching skill observation Scale

Pupil Teacher	Observation after Practice of Micro teaching		CR Value	level of Significance	Null Hypothesis
	Mean	SD			
Science Stream = 45	80.86	8.71	8.65	P<.01	Rejected
Social Science Stream = 75	Mean	SD			
	87.61	8.84			

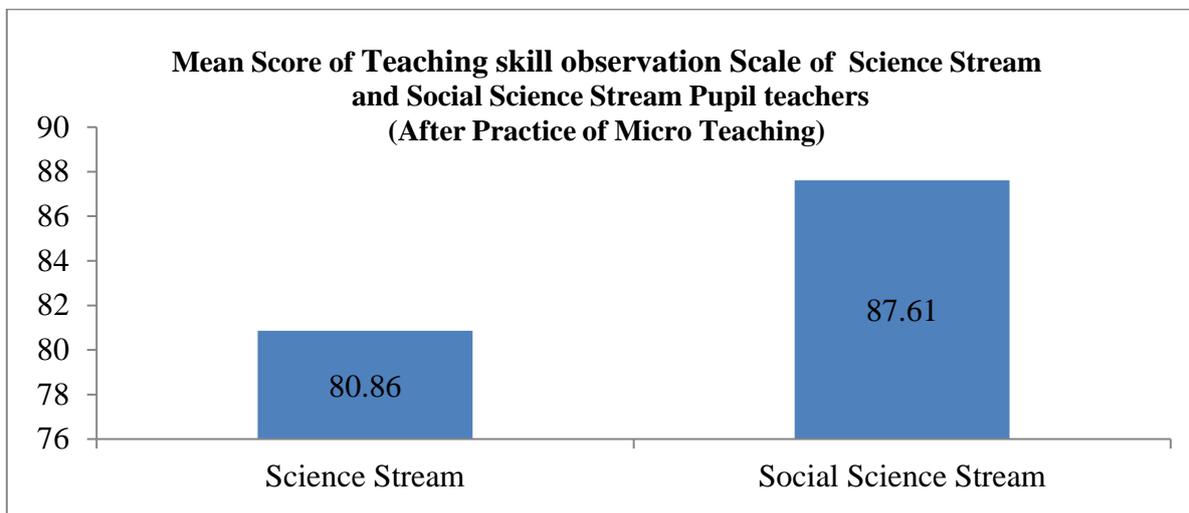


Figure 3.3: Showing difference between mean score of ‘Teaching skill observation Scale’ of science stream and social science stream pupil teachers (observed after practice of micro teaching).

From the table 3.3, it is clear that the mean value of Teaching skill observation Scale of science stream pupil teachers and social science stream pupil teachers at final observation (after practice of micro teaching) have been found 80.86 and 87.61 respectively and also standard deviation have been found 8.71 and 8.84 respectively. The calculated CR value obtained by the pupil teachers having science stream and social science stream before and after practice of micro teaching is 8.65. So, it is found to be significant at 0.01 level of confidence. Hence, the null hypothesis ‘there will be no significant difference between the mean score of science stream and social science stream pupil teachers at the final observation (after practice of micro-teaching) at the secondary level of education’ is rejected.

3.3. Objective III

To compare the effect of micro teaching approach in behaviour modification of pupil teachers with regard to their gender.

To investigate the third objective, the researchers observed the different teaching skills of male and female pupil teachers by using ‘Teaching skill observation Scale’ before and after the practice of micro teaching. The calculated value of mean and standard deviation of ‘Teaching skill observation Scale’ are given in table number 3.4.

Table 3.4: Total Mean Score of Teaching skill observation Scale

Student teacher	Observation before Practice of Micro teaching		CR Value	level of Significance	Null Hypothesis
	Mean	SD			
Male = 50	61.18	8.75	2.87	P<.01	Rejected
	68.2	8.52			
Female = 70	61.18	8.75			
	68.2	8.52			

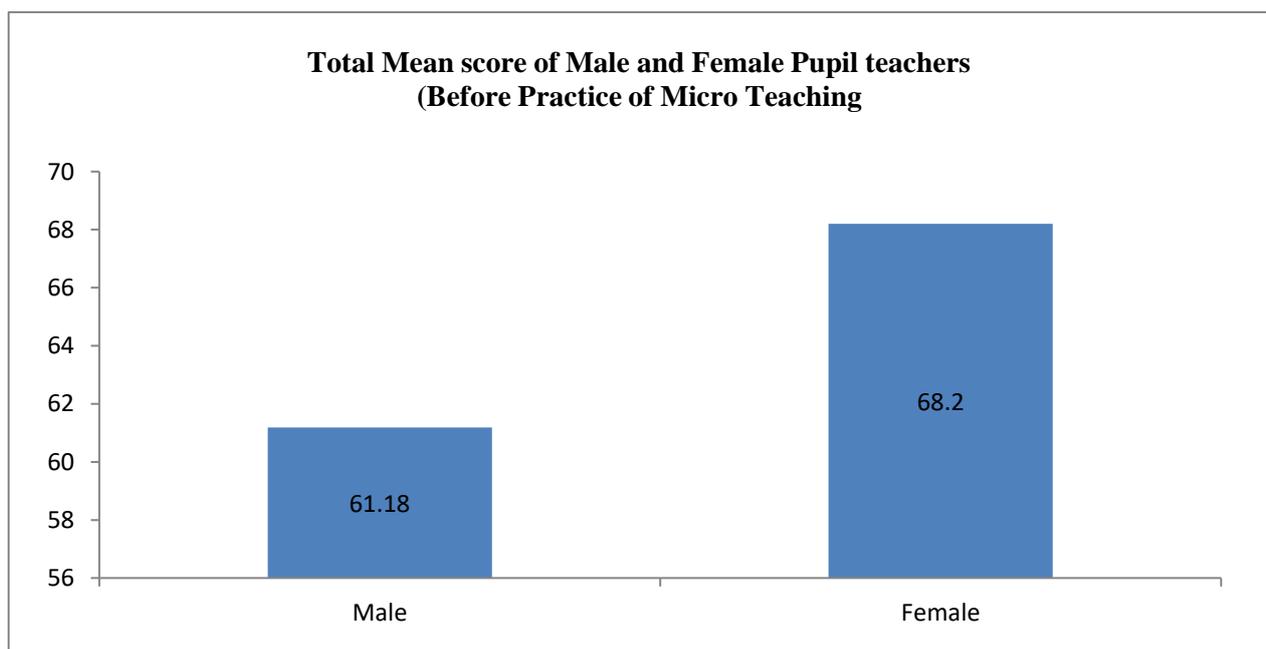


Figure 3.4: Showing difference between the mean score of ‘Teaching skill observation Scale’ of male and female pupil teachers (observed before practice of micro teaching)

From the table 3.4, it is clear that the mean value of Teaching skill observation Scale for male and female pupil teachers at the first observation (before practice of micro teaching) have been found 61.18 and 68.2 respectively and also standard deviation have been found 8.75 and 8.52 respectively. The calculated CR value obtained by male and female pupil teachers at the observation before practice of micro teaching is 2.87. So, it is found to be significant at 0.01 level of confidence. Hence, the null hypothesis ‘there will be no significant difference between the mean score of male and female pupil teachers at the first observation (before practice of micro-teaching) at the secondary level of education’ is rejected.

Table 3.5: Total Mean score of Teaching skill observation Scale

Teaching skill	Student teacher	Observation after Practice of Micro teaching		CR Value	level of Significance	Null Hypothesis
Teaching Skills	Male = 50	Mean	SD	7.31	P<.01	Rejected
		80.66	8.81			
	Female = 70	Mean	SD			
		88.24	8.45			

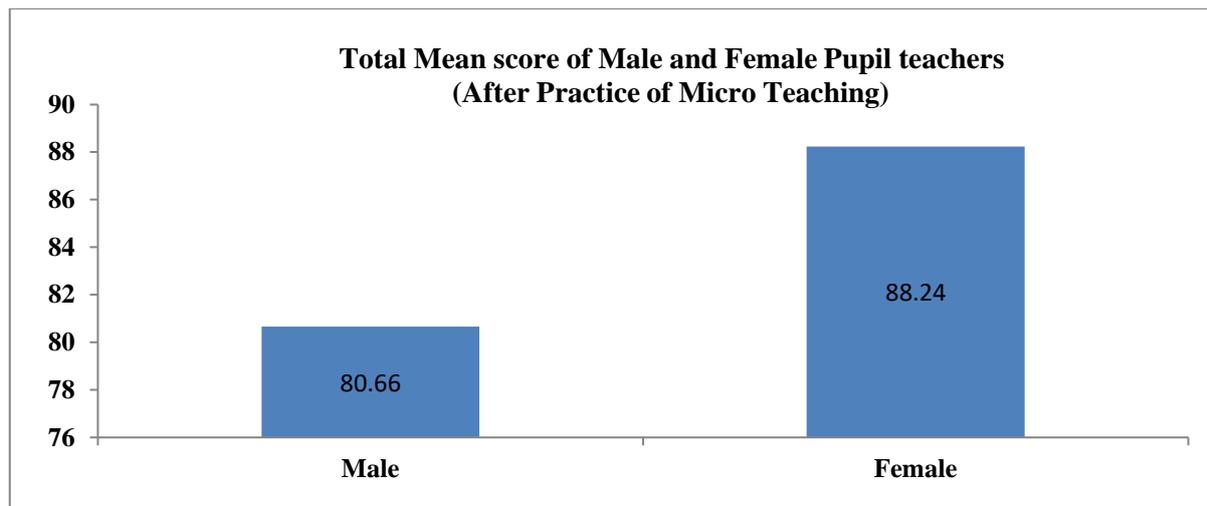


Figure 3.5: Showing difference between two means of male and female pupil teachers (observed after practice of micro teaching).

From the table 3.5, it is clear that the mean value of ‘Teaching skill observation Scale’ for male and female pupil teachers at the observation after practice of micro teaching have been found 80.66 and 88.24 respectively and also standard deviation have been found 8.81 and 8.45 respectively. The calculated CR value obtained by male and female pupil teachers at the observation after practice of micro teaching is 7.31. So, it is found to be significant at 0.01 level of confidence. Hence, the null hypothesis ‘there will be no significant difference between the mean score of male and female pupil teachers at the final observation (after practice of micro-teaching) at the secondary level of education’ is rejected.

4. FINDINGS OF THE STUDY

- a. A significant difference has been found between the mean score of ‘Teaching skill observation Scale’ of pupil teachers at the first observation (before practice of micro teaching) and final observation (after practice of micro teaching). It means that there was a positive effect of micro teaching on behaviour modification of pupil teachers.
- b. The mean score of pupil teachers at the final observation was much higher than the first observation.
- c. Significant difference have been found between the mean scores of Teaching skill observation of Scale of science stream pupil teachers and social science stream pupil teachers at both first and final observation.
- d. The mean scores of both science stream pupil teachers and social science stream pupil teachers at the first observation were much lower than the last observation.
- e. At both the first and final observation, the mean scores of female pupil teachers were much higher than mean scores of male pupil teachers.

5. CONCLUSION

Microteaching approach is one of the most recent innovations in the field of teacher training program which is used as a professional developmental tool in teachers training institutions. It is a teachers training technique which helps a pupil teacher to improve his/her own teaching style. It is concerned with the development of classroom teaching skills and modification of teacher behaviour. Microteaching acts as an excellent way to build up teaching skills and confidence and focus on specific teaching behaviours. Microteaching technique has a great effect on the modification of teacher behaviour in the teachers training program. However, it depends on the different other factors like type of institution, type of stream, gender etc.

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APPENDIX A

Teaching Skill Observation Scale

Name of the pupil teacher Roll. No.
 Class Subject Topic Date

S.No.	ITEMS	1	2	3	4	5
A.	Skill of Introduction					
1.	Teacher effectively used previous knowledge of the students before starting the topic.					
2.	Teacher established good rapport to the learners.					
3.	Teacher effectively linked between the introduction and main parts.					
4.	Teachers physical appearance is good.					
5.	Teacher introduced the topic based on simple to complex method.					
B.	Skill of Probing Question					
6.	Questions asked by the teacher were relevant to the content.					
7.	During questioning, students are taking interest.					
8.	Questions asked by the teacher were specific.					
9.	Teacher uses questioning to achieve specific objectives.					
10.	The questions asked by the teacher helps to assess learners understanding.					
11.	Language of the question is simple.					
12.	Teacher asked questions according to the mental level of learners.					
C.	Skill of Explanation					
13.	Teacher used simple language.					
14.	Teacher used relevant example while explaining the content.					
15.	Teacher explains the topic in sequence manner.					
16.	Teacher’s voice is clear and audible.					
17.	Teacher able to attract attention and curiosity of the learners.					
D.	Skill of Stimulus Variation					
18.	Teacher’s gesture is good.					
19.	Teacher perfectly able to change in speech pattern.					
20.	Teacher’s movement style in the class is good.					
21.	Teacher perfectly able to change in interaction style.					
22.	Teacher have good knowledge about the pausing pattern.					
E.	Skill of Black-board Writing					
23.	Blackboard writing is neat and legible.					
24.	Contact with the whole class while writing blackboard.					
25.	Effectively highlights the main points.					
26.	Words are properly visible from the last bench of the class.					
27.	Teacher pronounced the word loudly while writing blackboard.					
F.	Reinforcement Skill					
28.	Teacher used positive reinforcement word like Good, very good etc.					
29.	Teacher seeks students’ response and used their ideas for explaining the content.					
30.	Teacher wrote the students response on the black-board					

31.	Teacher used positive non-verbal reinforcement like nodding, smiling etc.					
32.	Teacher avoids using negative reinforcement cues.					