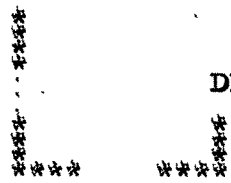
CHAPTER V



DISCUSSION OF RESULTS

5.0.0. INTRODUCTION

The present study has attempted to answer two questions :

(i) What are the effects of different techniques of feedback upon the attainment of teaching skills in microteaching under simulated conditions ?

(ii) To what extent, the training of microteaching under simulated condition, can be transferred to real classroom teaching ?

The rationale of the study, for selecting three skills of teaching - body movement, gestures and shifting sensory channels related to stimulus variation confining to non-verbal communication mainly, for selecting three techniques of peer feedback - discussion, oral and written, and for

selecting the techniques of training - microteaching in simulation and conventional teaching practice has been presented in chapter I. The final study was designed in the light of the experiences drawn from the pilot study presented in chapter II. The details regarding the method and procedure adopted in the final study was presented in chapter III. The data related to Laboratory Stage (Training) - three skills of teaching, attitude of teacher trainee towards microteaching, self evaluation of microteaching programme in simulation conditions, free responses with regard to evaluation of microteaching in simulation and related to School Stage (General Teaching Competence) were collected. The analysis of the data were presented in chapter IV. In the present chapter, the results of the second phase (final study) are summarised and discussed accordingly (See Table 5.1 A, B and C).

5.1.0. LABORATORY STAGE (TRAINING)

The results of the laboratory stage, during training period, confining to three teaching skills and their components are summarised in Table 5.1 A. The skills are : body movement, gestures and shifting sensory channels. Three types of main effects due to feedback treatment,

TABLE 5.1 A :

Summary of Results of Laboratory Stage (Training)

(Hypotheses related to Feedback Treatment)

Skill	Hypotheses	FB Treatment (F- ratio)	(Mean comparison for the groups) $E_1 - E_2$ (t-values)	E_1 E_3 (t-values)	E_2 E_3 (t-values)
Body Movement (Skill I BMT)	H_1 - There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of body movement.	0.01	+0.01	NS	-0.01
Component Skill (M_1)	- - - -	0.01	+0.01	NS	-0.01
Component Skill (M_2)	- - - -	0.01	+0.01	NS	-0.01
Component Skill (M_3)	- - - -	0.01	+0.01	NS	-0.01
Component Skill (M_4)	- - - -	0.01	+0.01	NS	-0.01
Component Skill (M_5)	- - - -	0.01	+0.01	NS	-0.01
Gestures (Skill II GT)	H_4- There is no differential effect of three different techniques of peer feedback discussion, oral, and written, upon the attainment of the skill of gestures	NS	-0.01	-0.01	-0.01
Component Skill G_1)	- - - -	0.05	NS	-0.01	-0.01

(continued...)

(Table 5.1 A continued)

Skill	Hypotheses	FB Treatment (F-ratio)	(Mean comparisons for the groups) E_1 E_2	E_1 E_3	E_2 E_3
			(.....t - values.....)		
Component Skill (G_2)	- - - -	NS	-	-	-
Component Skill (G_3)	- - - -	NS	-	-	-
Component Skill (G_4)	- - - -	NS	-	-	-
Component Skill (G_5)	- - - -	NS	-	-	-
Component Skill (G_6)	- - - -	0.05	+0.05	-0.01	-0.05
Shifting Sensory Channels (Skill III)					
(a)	H_7 - There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of shifting sensory channels - Total Record of Events	0.01	+0.01	-0.01	-0.01
(b)	H_9 - ..do..	0.01	-0.05	-0.01	-0.01

Note : + Symbol stands for higher mean scores for the former group
- Symbol stands for higher mean scores for the later group

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TABLE 5.1 B :

Summary of Results of Laboratory Stage (Training)

(Hypotheses related to Lesson)

Skill	Hypothesis	Lesson
Body Movement (Skill I BMT)	H_2 - There is no practice effect of lessons upon the attainment of the skill of body movement.	00.01
Component Skill (M_1)	- - -	0.01
Component Skill (M_2)	- - -	0.01
Component Skill (M_3)	- - -	0.01
Component Skill (M_4)	- - -	0.01
Component Skill (M_5)	- - -	0.01
Gestures (Skill II GT)	H_5 - There is no practice effect of lessons upon the attainment of the skill of gestures.	0.01
Component Skill (G_1)	- - -	0.01
Component Skill (G_2)	- - -	0.01
Component Skill (G_3)	- - -	0.01
Component Skill (G_4)	- - -	NS
Component Skill (G_5)	- - -	0.01
Component Skill (G_6)	- - -	NS

(Continued)

(Table 5.1 B continued)

Skill	Hypothesis	Lesson
Shifting Sensory Channels (Skill III)	H_8 and H_{10}	
(a) Shifting Sensory Channels (Skill III TRE)	H_8 - There is no practice effect of lessons upon the attainment of the skill of shifting sensory channels - Total Record of Events.	NS
(b) Shifting Sensory Channels (Skill III TSE)	H_{10}- There is no practice effect of lessons upon the attainment of the skill of shifting sensory channels - Total shifts in events	0.01

TABLE 5.1 C :

Summary of Results of Laboratory Stage (Training)
(Hypotheses related to Observer)

Skill	Hypothesis	F-Ratio	Observer
Body Movement (Skill I BMT)	H_3 - Peer and self do not differ in their rating of the performance for the skill of body movement.	0.01	Self
Component Skill (M_1)	- - -	0.01	Self
Component Skill (M_2)	- - -	0.01	Self
Component Skill (M_3)	- - -	0.01	Self
Component Skill (M_4)	- - -	0.05	Self
Component Skill (M_5)	- - -	0.05	Self
Gestures (Skill II GT)	H_6 -Peer and self do not differ in their rating of the performance for the skill of gestures	0.05	Self
Component Skill (G_1)	- - -	NS	-
Component Skill (G_2)	- - -	NS	-
Component Skill (G_3)	- - -	NS	-
Component Skill (G_4)	- - -	0.01	Self
Component Skill (G_5)	- - -	NS	-
Component Skill (G_6)	- - -	0.05	Peer

lesson, and observers, upon the attainment of teaching skills and their components have been shown in the summary Table 5.1 A, B and C. Hypotheses related to each skill have been mentioned correspondingly in the summary table in terms of significance. These results grouped to-gether in the summary Table 5.1 A, B and C are discussed under the following captions 5.1.1 (Feedback Treatment), 5.1.2 (Lesson) and 5.1.3 (Observer) duly supported by research studies.

5.1.1. Feedback Treatment

Following four hypotheses related to feedback treatment tested in this study are given for ready reference.

Hypothesis H_1 - There is no differential effect of three different techniques of peer feedback - discussion, oral and writtenn upon the attainment of the skill of body movement.

H_4 - There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of gestures.

H_7 - There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of shifting sensory channels - ' total record of events.'

H_9 - There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of shifting sensory channels - 'total shifts in events'.

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The results show that three different techniques of peer feedback - discussion, oral and written have differential effect upon the attainment of two teaching skills - body movement and shifting sensory channels (total record of events and total shifts in events). These techniques of peer feedback could not produce significant difference upon the use of gestures. Further the t-values in the case of body movement, also show the amount and direction of difference among the treatments. Discussion feedback has been found more effective than oral feedback as well as written feedback; order of effectiveness has been discussion, written and oral. The results of the component skills also reveal that discussion feedback has been the most effective technique than oral and written techniques - except components Skill M_2 ' moving towards individual pupil to examine his work ' and component skill M_5 ' moving between the rows and around the class to control / check / show / distribute / help the group of students ' where written feedback has been found the most effective technique out of the three. From the significance of difference between mean scores of 'shifting sensory channels related to total record of events', it is revealed that written feedback is the most effective; order of effectiveness has

been written, discussion and oral. The t-values in the case of shifting sensory channels related to total shifts in events show, written feedback has been the most effective technique; order of effectiveness has been written, oral and discussion feedback. Thus three hypotheses, namely, H_1 ' There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of body movement'; hypothesis H_7 ' There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of shifting sensory channels - total record of events', and hypothesis H_9 ' There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of shifting sensory channels - total shifts in events ' are rejected at 0.01 level in both the skills.

The results of analysis of variance for the skill of gestures show no differential effect upon the attainment of the skill of gestures total. But two component skills : G_1 ' pointing towards things, to direct attention like aids and blackboard writing' and G_6 ' making mimicry or dramatic representation for

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communicating ideas and expressing emotions', of gestures, reveal the differential effect. Further the t-values show the amount and direction of difference among the groups. In the component skill G_1 ' pointing towards things, to direct attention like aids and blackboard writing', written feedback has the maximum effect than discussion and oral feedback; order of effectiveness has been written oral and discussion. In the case of the component skill G_6 'making mimicry or dramatic representation for communicating ideas or expressing emotions', discussion has the maximum effect than oral and written feedback; order of effectiveness has been discussion, oral and written. Thus, the hypothesis H_4, ' There is no differential effect of three different techniques of peer feedback - discussion, oral and written, upon the attainment of the skill of gestures', is accepted. Following reasons can be attributed to the differential effects of three different techniques of feedback in the case of body movement and shifting sensory channels.

Peer supervisors may be the factor, responsible for differential effect. But before starting the experiment, the peers were matched and the inter-observer reliability was established. Therefore, peer supervisors cannot be the factor for the difference. Besides due care was taken

for the number of lessons and sequence of skills, to avoid differences at the initial stages.

Perhaps microteachers may be responsible for the difference. But the groups were matched and the treatment was assigned randomly. So microteachers cannot be the factor.

Scoring out of these possible factors, the question is what can be the other reasons for producing differential effect among the groups. Other possible reasons can be traced out from the techniques of peer feedback.

Perhaps for the body movement, discussion feedback may provide variety of information on different aspects of the skill. With discussion, new points emerge and these points give extra information for better understanding of the skill which is limited in written and oral feedback.

Just o possible back, the way the points in discussion feedback are presented, may be more effective for receiving the feedback on the part of microteacher.

For shifting sensory channels, the points which go in favour for written feedback, can be that information

recorded on paper and handed over to the microteacher is re-treaceable. He can go to the recorded impressions and can improve. Another possible reason can be that in shifting sensory channels, recorded events may be more significant rather to discuss them. Therefore, performance may go in favour of written feedback.

Following reasons can be attributed so far having no differential effect of three different techniques of peer feedback upon the attainment of the skill of gestures.

Perhaps gestures may be difficult skill to be understood by the microteachers and they fail to develop it properly. Many times, it is difficult to differentiate and understand the meaning of certain gestures.

It can be said that for peer supervisor, this skill seems to be difficult to define operationally in comparison to body movement and shifting sensory channels. So peer supervisor fails to provide proper feedback.

Perhaps the duration of practice is short for the acquisition of the skill. Because of the complex nature of gestures and their meaning in Indian context, needs more time for attaining the skill or minimum level of it.

Searching for evidences in research literature, to support the above views, it is found that studies, which are directly related to either these three techniques of peer feedback or these three skills of teaching, are not easily available. Some of the studies which have tried to show the effect of peer supervisory feedback upon the acquisition of teaching skills can be discussed into two groups. One group of studies supports the present findings and the other group of studies shows no differential effect.

Belonging to the first group of research studies, Belt (1967) reports that trainees agreed that comments and suggestions made by fellow students were definitely valuable. Young (1970) comparing the effectiveness of the tutor supervisor with peer supervisor team on change of scores between teach and reteach on two skills, reports that students working in teams, performed significantly greater number of specific teaching behaviours in 'orienting students to learning task'. They also performed significantly better on three of eight verbal and three of ten nonverbal behaviours aimed at 'reinforcing student responses'. The present study finds a place very near to the research studies mentioned over here.

Belonging to the second group of research studies, McIntyre (1971) found no significant differences in performance between students who worked in groups with tutors and those who worked in groups without tutors. However, he did find that students working only with peers expressed lower morale, reflected particularly strongly in a weaker commitment to teaching careers. Shamma et al. (1976) reported the similar results. Thus it is evident, from these two groups of research studies that peer supervisory feedback is effective. In the first case, it has been shown that peer supervisory feedback is more effective than college supervisory feedback, in the second case, it has been shown that peer supervisory feedback is equally effective in comparison to college supervisory feedback.

Further, no specific picture has emerged about the conditions and components of feedback process (refer chapter I, caption 1.3.0.) under which, peer supervisory feedback can be more effective. The most, at present, can be achieved, is the statement of four tentative general possibilities.

(i) The effectiveness of supervision may depend upon the way in which other factors in microteaching programme are organised. The investigations by Claus (1969) and by Resnick and Kiss (1970) suggest that the nature of 'modelling experience' provided to trainees may influence the effectiveness of feedback.

(ii) As Claus (1969) and McKnight (1971) suggest, the effectiveness of supervision may depend upon the level of skill competence with which students enter the programme or the stage of training at which supervisors are involved. Supervisors may be effective after the initial stage of basic skill acquisition.

(iii) The effectiveness of supervision may depend upon the expectancies student teachers have about the ways in which supervisors should behave (Johnson and Knaup (1970), and its contribution may be more strongly reflected in attitude change than in immediate behaviour change measures (McIntyre 1971).

(iv) Another reason may be that supervisors restrict to specific techniques of feedback (Claus, 1969, and Morse et al., 1970). Moreover, the effectiveness of supervision is a function of the kind of 'supervising strategy' used. (Kiss, 1971).

Obviously, it can be said that more research is needed on 'supervising strategy' in which peers are engaged for providing feedback to their colleagues before any specific conclusion can be drawn related to peer supervisory feedback. But some of the conclusions can be drawn from the present study related to peer feedback treatment.

(i) Out of three techniques of feedback, discussion is the most effective techniques of providing feedback by peer supervisors for the attainment of the skill of body movement.

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(ii) Out of three techniques of feedback, written feedback is the most effective technique of providing feedback by peer supervisors for the acquisition of the skill of shifting sensory channels.

(iii) Out of three techniques of feedback, oral feedback is not as effective as discussion and written feedback are.:

(iv) In the skill of shifting sensory channels - total shifts in events, oral feedback is better than discussion feedback. Discussion is the least effective only in this case.

(v) Out of three techniques of feedback, none has differential effect upon the attainment of the skill of gestures.

5.1.2. Practice Effect of Lessons

The present investigation was undertaken with a view to study the effect of different techniques of feedback upon the attainment of teaching skills related to stimulus variation among teachers. Alongwith the effect of different techniques of peer feedback treatment, the practice effect of lessons and difference among observers' rating were also studied. Following hypotheses were put to test.

Hypothesis H_2 - There is no practice effect of lessons upon the attainment of the skill of body movement.

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Hypothesis H_5 - There is no practice effect of lessons upon the attainment of the skill of gestures.

H_8 - There is no practice effect of lessons upon the attainment of the skill of shifting sensory channels - total record of events.

H_9 - There is no practice effect of lessons upon the attainment of the skill of shifting sensory channels - total shifts in events.

From the Table 5.1 B, it is evident that practice effect from lesson to lesson has produced significant results in the skills of body movement, gestures and shifting sensory channels related to total shifts in events (b) Thus the hypotheses =

H_2 - There is no practice effect of lessons upon the attainment of the skill of body movement',

H_5 - There is no practice effect of lessons upon the attainment of the skill of gestures', and

H_{10}- There is no practice effect of lessons upon the attainment of the skill of shifting sensory channels - total shifts in events,' are rejected at 0.01 level.

Practice of lessons did not produce any significant effect upon the skill of shifting sensory channels related to toal record of events. Thus the hypothesis H_8 ' There is no practice effect of lessons upon the attainment of the skill of shifting sensory channels - total record of events,

is accepted.' Following reasons can be attributed to the differential effect and no differential effect of practice of lessons upon the acquisition of teaching skills.

Possible factors responsible for significant differential effect could be the peer supervisor, nature of skill, nature of sample and level of lesson. Regarding peer supervisors, differential effect cannot be attributed to inter-observer reliability was established. Skill cannot be the reason as same skill was practised by all the three experimental groups. Nature of sample cannot be the reason as random sampling was done and it was matched on the variables of sex, qualification, achievement, percentage and teaching experience. Therefore, the differential effect from lesson to lesson possibly can be due to the different techniques of peerf feedback. Different techniques of feedback might have produced differential effects due to the following factors involved in these.

There may be the possibility that the practice in the skills of body movement, gestures and shifting sensory channels related to total shifts in events may be the reason for the difference. Difference may be caused due to the motivational level of microteachers involved in microteaching. Another reason can be, the type of technique of providing the feedback itself. Therefore, from the above

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mentioned reasons, it can safely be said that gradual change from first lesson to fourth lesson may be due to either practice or motivation or technique of feedback or their combined effects. Hence to summarise the evidence on practice effect, it can be said that there was gain in the mean scores from one lesson to another lesson (teaching cycle - teach and reteach). This finding has been supported by the studies conducted by Joshi (1974); Abraham (1974); Sharma (1974) and Vaze (1975) reported that there was a steady gain in the mean scores from trial to trial indicating that there was improvement in perfonmance due to practice. Therefore, present study validates the above mentioned studies with certain reservations in the light of contradictions found in the skill of shifting sensory channels related to total record of events. Reasons mentioned in the case of other skills for body movement, gestures and shifting sensory channels related to total shifts in events may also be applicable to this skill except the ~~other~~ reasons which are stated below. The skill of shifting sensory channels related to total record of events deals only with events which happen in the classroom in a fixed interval. It may be possible that microteachers might have concentrated on the shifts in events rather to introduce a variety of

events. Time may be another factor for restricting the number of events. Shifts may be easy to introduce than events which require longer time. Another reason can be, in this particular skill that microteacher may need prior practice in other types of events (teacher's behaviours - i.e. skills). Just possible, in this skill, time, being fixed and number of events happening per unit of time may more or less remain the same in all the four lessons. Therefore, it can be said that no differential effect in shifting sensory channels related to total record of events is caused due to the logical reasons mentioned above. Following conclusions could be drawn from the present discussion.

(i) There is practice effect of lessons in the gradual improvement in perfomance of the skill of body movement practised in microteaching in simulation.

(ii) There is practice effect of lessons on the gradual improvement in perfomance of the skill of gestures practised in microteaching in simulation.

(iii) There is practice effect of lessons on the gradual improvement in the perfomance of the skill of shifting sensory channels related to total shifts in events practised in microteaching simulation.

(iv) There is no practice effect of lessons in the gradual improvement in the performance of the skill of shifting sensory channels related to total record of events practised in microteaching simulation.

5.1.3. Difference in Observers' Ratings

To study the difference in the ratings by Peer and Self (Microteacher) for the skill of body movement and skill of gestures only following two hypotheses were put to test. In the third skill, on shifting sensory channels no self rating was done due to the nature of skill evaluation proforma.

Hypothesis H_3 - 'Peer and Self do not differ in their rating of the performance for the skill of body movement', and

H_6 - 'Peer and Self do not differ in their rating of the performance for the skill of gestures'.

The results of analysis of variance grouped in Table 5.1 C reveal that peer supervisors and microteachers have differed significantly in their ratings of the performance for the skill of body movement and gestures total. With regard to the components of the skills shown in Table 5.1 C different results have been observed.

In the case of components ' moving towards black board - M_1', ' moving towards individual pupil to examine his work - M_2', 'moving towards the class when talking to them - M_3', ' moving sideways to adjust aids, attend, etc.- M_4', ' moving between the rows and around the class to control, check etc. - M_5' of body movement, the differences were significant. In the case of the components : ' making shifts and movements of shoulders for expressing indifference, ignorance etc. G_4', and nodding the head for accepting or rejecting pupils' ideas or feelings and showing surprise' of gestures, the differences were significant. On the other component skills : ' pointing towards things, to direct attention etc. - G_1', waving hands to indicate shape, size, movement, distance, symmetry, vagueness and irrelevance - G_2', 'movements of arms to emphasise and explain ideas and feelings - G_3', and ' making mimicry or dramatic representation for communicating ideas and expressing emotions - G_6' of gestures, results were found not significant. Further it was found that the self (micro-teacher) rated higher than the peer supervisor in both the skills and in their components except in the component skill : ' making mimicry or dramatic representation for communicating ideas and expressing emotions - G_6' where the peer supervisor rated higher as well as lower than the self.

These results have shown that self perception about the performance of the skill occupies a higher level than the peer supervisor's perception of the same performance on a skill. Thus hypotheses -

H_3 - ' Peer and Self do not differ in their rating of the performance for the skill of body movement', and

H_6 - ' Peer and Self do not differ in their rating of the performance for the skill of gestures',

are rejected.

Perceptual differences between the ratings of the peer supervisor and the self, can be taken into account on the basis of the following discussion.

The difference in the perceptual view of the observers, can be due to certain factors involved in the process itself. One factor perhaps can be that peer supervisors were more qualified and their expectations may be in the light of their academic background. Microteachers having low qualification might have different level of perceptual view for rating the performance. Second possibility can be that peer supervisor being in a comfortable position may rate the lesson at a lower level whereas self who actually has taught the lesson and experienced the trial, may rate the performance from his difficulty point of view at a

higher level. Third possibility can be, perhaps self does not want to rate himself as poor, so always, he may up keep his level or standard of performance. There may be another possibility that the peer supervisor may expect the ideal performance from the microteacher with regard to skill rather to view the reality in the context of time, conditions and material available at the time of practising the lesson.

Some of these views are duly supported by two studies conducted by Joshi (1974) and Sharma (1974). These studies reveal that peer rating on skill performance is always at a lower level in comparison to the rating by the self. In a slightly different context, Ginsberg (1973) studied the effect of self evaluation on videotape proceedings of the questioning behaviour of student teachers. It was concluded that self evaluation had made the subjects of the experimental group more sophisticated in questioning than the subjects of the control group. From the above discussion following conclusions emerge :

(i) The peer rating of his colleague's performance on the skill of body movement and gestures always differ from the self (microteacher) ; the peer rating always remains at a lower level than of the self.

5.2.0. ATTITUDE, EVALUATION AND FREE RESPONSES

During training at the laboratory stage data for the three experimental groups - E_1, E_2 and E_3 were also collected related to microteachers' attitude towards microteaching, self evaluation of microteaching programme and their reactions in terms of free responses. The data related to attitude and the self evaluation, were statistically analysed and data related to reactions, were qualitatively analysed. Following two hypotheses H_{11} and H_{12} related to attitude and self-evaluation of microteachers towards microteaching programme were put to test.

Hypothesis H_{11} - ' There is no difference in the attitude of three experimental groups - E_1, E_2 and E_3 towards microteaching programme,' and

H_{12} - ' There is no difference in the self evaluation of three experimental groups - E_1, E_2 and E_3 towards microteaching programme.'

The data on attitude were subjected to analysis of covariance. The two covariates were achievement (X_1) and pretest on GTCOS (X_2) and criterian variable was the scores on the attitude scale (Y_2) for three experimental groups - E_1, E_2 and E_3. The F - ratio of was found not significant. This shows that three treatment groups did not differ from each other with regard to their attitude towards microteaching programme. It shows that three feedback treatments could not

show any differential effect in the attitudinal change. Hence hypothesis H_{11} : ' There is no difference in the attitude of three experimental groups - E_1, E_2 and E_3 towards microteaching programme', is accepted. Issue can be raised that what are the reasons which can be attributed for no differential effect in the attitudinal change among three feedback treatment groups. Following discussion will explore the possible factors responsible for it.

The factors which are directly involved in this case and can be held responsible for attitudinal change, can be the skill, the lesson, the peer supervisor, the feedback treatment and the setting of the microteaching programme. Possibly these factors cannot be held responsible for bringing differential change in the attitude of the microteachers as things were kept uniform and constant except techniques of providing feedback. Though techniques of feedback alone could produce differential effect among treatment groups yet from attitudinal point of view, these might have not shown their tangible effect.

Perhaps all the three groups were very much motivated towards microteaching programme as it was evident from their reactions shown on the Free Response Evaluation Proforma. Therefore, the only hunch is that all the three groups liked microteaching programme equally. This fact is duly supported by other empirical studies done already in this context.

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Webb and others (1968) conducted opinion surveys of random samples from a group of 700 students. They found that in one instance 88 percent (N = 81) and in another instance 87 percent indicated positive attitude towards simulated microteaching. McIntyre and Dathie (1972) studied reactions to microteaching and reported that a great majority (N = 128) of students found microteaching interesting and valuable. Allen (1973) reported a study comparing microteaching and traditional method of instruction for improving performance of a manipulative demonstration in industrial education. There was an evidence of an overall significant difference in favour of the microteaching group as compared with the traditional method group. The skills that showed significant differences were : (i) developing main points, (ii) closure, (iii) varying stimulus, (iv) probing questioning, and (v) reinforcement. Studies conducted by Goodkind (1968); Fortune, Cooper and Allen (1967); Berliner (1969); Young and Young (1969); Wragg (1971); Ward (1969); Turney (1970); Perrot and Duthie (1970), Illingworth (1974) and DeMarte (1974) showed the positive attitude of the trainees towards microteaching. Some results have been reported by Abraham (1974); Joshi (1974); Sharma (1974); and Passi and Shah (1974) in India regarding positive attitude of the trainees towards microteaching programme. Therefore, it can safely be said that the group showed similar and positive attitude towards

microteaching programme. Hence, based upon the analysis and discussion of the results, conclusion appear to emerge. The student teachers under microteaching treatment showed favourable attitudes towards microteaching programme conducted in simulation conditions.

The data on self evaluation of microteaching programme were also subjected to analysis of covariance. The two covariates were achievement (X_1) and pretest on GTCOS (X_2) and criterian variable (Y_2) for three experimental groups - E_1, E_2 and E_3. The F-ratio was found not significant. This shows that three treatment groups did not differ from each other with regard to self evaluation of microteaching programme. Hence Hypothesis, H_{12} ' There is no difference in the self evaluation of three experimental groups - E_1, E_2 and E_3 towards microteaching programme', is accepted.

The above mentioned results obtained in self evaluation raise a question as what can be the reasons for no difference. One factor that seems to be the reason, can be the attitude. The training programme, in microteaching under simulated condition might have affected equally. Thus they might have given uniform evaluation of the

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programme. In brief, self evaluation of microteaching programme may be a function of an attitude a trainee is having.

Searching for evidences in the research literature, it was found that there are studies which support these views. Barbara (1973) reported a pilot study on a cooperative student teaching programme. The interns agreed that microteaching should be continued as a vital part of methods and student teaching programmes. A similar opinion was also expressed by the student teachers of both the Faculty of Education and Psychology of the M.S. University of Baroda and the student teachers of the Government College of Education, Ratnagiri.

In a recent Faculty experiment conducted at CASE, Baroda (1975) student teachers expressed to have micro-teaching in their method subject. Thus it is understandable to see no differential effect of self evaluation of microteaching programme among the three experimental groups. Hence conclusion can be drawn. Those student teachers who have undergone microteaching programme under simulated conditions had similar opinion towards the microteaching programme.

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The data collected in terms of free responses or reactions of three experimental groups were analysed qualitatively under twenty six categories. (See Appendix O). Further all these responses were grouped together under logical heads - twelve in number namely, microteaching as a training technique; stimulus variation; nonverbal behaviour; skills - body movement, gestures and shifting sensory channels; feedback system; supervisors - college and peer, playing the role - as pupil, as microteacher and as peer supervisor; model lesson - by college supervisor and peer supervisor; microteaching - simulation and real; practice periods; opinion - classfellows in microteaching, / not in microteaching and microteachers in the same experimental group; and liking / disliking and suggestions. Following conclusions can be drawn from the free responses of the student teachers who had the experience of microteaching.

(i) Microteaching is an effective and economical component skill approach of teacher training.

(ii) Stimulus variation is an important skill for the teacher to make his teaching more lively and interesting.

(iii) Nonverbal behaviour on the part of the teacher helps him to make certain ideas and concepts clear to pupils, to motivate pupils, to get their attention, to bring variety in the lesson. But nonverbal behaviour is more effective when its meaning is interpreted with verbal behaviour and in the context of culture.

(iv) Skills related to stimulus variation, play specific roles: body movement is helpful for class control, getting pupils attention, to encourage pupils and expressing ideas; but too much movement becomes distraction in lesson; gesturisation is helpful for making lesson interesting! making certain concepts clear, but relevancy in gesturisation is essential; and shifting sensory channels creates good classroom climate, involves maximum number of students, helps to communicate ideas in variety of ways, but the duration of shifts and variety among the channels may be properly maintained.

(v) Feedback system in microteaching is very effective because it is pinpointed and immediate and brings strong and weak points to trainee's notice. Discussion feedback seems to be the best out of three techniques but peer supervisors need understanding of various issues of a skill.

(vi) Peer supervisory feedback is very effective if peers are properly oriented. They understand the practical difficulties of their colleagues in a better way than a college supervisor can. Besides trainees can exchange these views frankly which is not possible with college supervisor. However college supervisors are needed at certain crucial points where expertise is needed.

(vii) Playing the role of a pupil is pedagogically sound provided it is played with all seriousness. Playing the role of a microteacher in simulation develops courage, confidence, helps in developing

teaching skills. It is enjoyable if played with all seriousness. Playing the role of a peer supervisor helps to make the peer more critical minded and responsible.

(viii) Model lesson by the college supervisor is essential at the initial stage for clarification and for standard of excellence of a skill. Model lesson by the peer supervisor provides an additional information because of variety in models presented before the trainees. Discussion after model lessons provides extra information to teacher trainees.

(ix) Microteaching in simulation may or may not be better than the real yet it seems to be good setting for skill learning. It helps to remove hesitation and shyness. Microteaching with real pupils should be followed by simulation.

(x) Regarding practice periods no one conclusion could be drawn due to mixed views.

(xi) Opinion of the student teachers in the three groups, is good towards microteaching except some cases who felt, it is boring and tiring. Opinion of the classfellows not in microteaching group, is good and they are anxious to see the programme. Opinion of microteachers in the same group, is that microteaching is a very good technique of skill learning.

(xii) Regarding liking or disliking towards microteaching it has been concluded that it is a good system of practice and of feedback. Regarding suggestions, real pupils should be involved, more college supervisors

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should join the programme, time of practice should be extended and it should be taken with all sincerity and seriousness. Further it has been concluded that peer supervisors should be properly trained, some lessons should be arranged in microsituation and all the trainees should undergo microteaching programme.

5.3.0. SCHOOL STAGE (GENERAL TEACHING COMPETENCE)

To compare the transfer of general teaching competence of student teachers to classroom teaching, trained through microteaching in simulation and conventional teaching practice, data were collected at school stage. These data were in terms of pre-test and post-test scores on general teaching competence when the student teachers were actually teaching the real school students. These data, collected before and after the selected techniques of training, were subjected to analysis of covariance. Following hypothesis H_{13} was put to test.

Hypothesis H_{13} - ' There is no differential effect of two different techniques of training - microteaching simulation and conventional teaching practice with regard to General Teaching Competence transferred to classroom teaching.

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The results of pretest and posttest of four groups - E_1, E_2, E_3 and C showed that F value was significant at 0.01 level. Further when t-test was employed to compare the adjusted mean scores of the four groups, it was found that all the three treatment groups scored significantly higher mean scores than the control group which was exposed to conventional teaching practice. Moreso, mean scores for General Teaching Competence for the groups - E_1, E_2 and E_3 did not differ significantly. Hence the Hypothesis H_{13}, ' There is no differential effect of two different techniques of training - microteaching simulation and conventional teaching practice with regard to General Teaching Competence transferred to classroom teaching' is rejected at 0.01 level.

The following discussion may be helpful to understand the fact for rejecting the hypothesis. The difference in the results obtained at school stage for the transfer of general teaching competence, poses a question as what caused the difference. One factor, which can cause difference, is the total structure of training technique. Both microteaching in simulation and conventional teaching practice are having different pattern of providing training. Microteaching is analytical in its approach whereas conventional teaching practice is synthetical. Further

difference may be that in microteaching, the structure is controlled under simulation condition (laboratory stage) whereas in conventional teaching practice (school stage), it cannot be controlled. Another reason may be that in microteaching in addition to the controlled practice relevance was duly maintained whereas in conventional teaching, because of low degree of structuring, the relevance is lost. Further, difference may depend upon the components of microteaching like feedback and reteach. Feedback being pinpointed and immediate, can be the reason for the difference. After receiving the feedback, same lesson is retaught by the microteacher. This provides a practice effect for learning the ~~right~~ appropriate teaching behaviour. This is not possible in conventional teaching practice. Moreover, in microteaching, one skill is practised at a time whereas in conventional teaching practice all the skills are practised. One skill if attended to, at one time, it is better learnt.

Tracing ~~further~~ the research studies, in the area of transfer of training, two different types of studies are available. One group of studies support the conceptual frame, and second group, though deals with this area yet has slightly different line of action with regard to transfer of training. A brief description of both the groups of

studies deserves mention.

Belonging to first group of studies, Turney (1976) brings following aspects of microteaching to the notice of researchers for maximum transfer of teaching competence.

(i) The ways of linking microteaching with practice teaching with a view to develop teaching competence.

(ii) Thinking regarding post-microteaching feedback schedules to sustain the performance of recently acquired skills in microteaching.

(iii) The ways of sequencing of teaching skills into microsituation using larger classes, groups and longer teaching episodes.

(iv) The problems encountered by teachers of different subjects and with different personal characteristics in transferring teaching skills to the classroom.

(v) The transferability of teaching skills developed in different sequences and in special group.

(vi) Thinking regarding the long term retention of skill developed through microteaching and the need for review and retaining procedures to keep skills at high level.

Bartley (1970) suggests that a prerequisite for successful transfer is a thorough understanding on the part of the student teacher of the training materials. Moreso, other factors namely, the nature of skill, modelling, process of feedback, setting of training, personnel involved,

taxonomy of objectives, nature of content, criteria developed for teaching competence are responsible for transfer.

Osgood et al. (1957) suggest that 'task similarity', that is, the similarity of stimulus - response relationship between the old and the new situations, is a condition for maximum transfer. In other words, transfer will be the greatest when the training conditions are highly similar to the 'transfer task', i.e. actual classroom teaching. The question is : how similar is microteaching to the real classroom situation ? Allen and Ryan (1969) have consistently asserted that microteaching is 'real teaching'. This view is reiterated by Cooper (1971) when he defines microteaching as 'a teaching situation which is scaled down in terms of time and number of students, but which is not synonymous with simulation, as the teachers, students, and lessons are 'real'. McAleese and Unwin (1971) unequivocally base their interpretation of microteaching on two concepts - ' simulation' and 'sensitisation'. Perlberg (1969) also states that microteaching contains elements of simulation and holds that although it is not a substitute for the real classroom experience, it is the next best approximation of this reality.

Belonging to the second group, on the other hand, some of the studies reveal doubt regarding transfer, as there is lacking correspondance between component skills and conceptual structure of curriculum content (Perrot, 1972). McIntyre and Dathie (1972) also comment on the lack of balance between curriculum seminar content and the component skills and student dissatisfaction with the lack of connection between psychological theory and the skills. It shows that 'task analysis' and fractionation techniques by which the component skills of microteaching are operationalised, has less relevance to actual classroom setting. Berliner (1969) says : 'Investigators still need to examine the nature of transfer... situational cues which through training may elicit desired teaching behaviours in microteaching, not be present in real school settings, and transfer of training may not occur. Through concern for reducing the complexity of the classroom... a situation yielding little transfer effect to the classroom may have produced.'

Diverging views show that there exists a gap between microteaching as a training technique and transfer of this training into real classroom because the demands of the real classroom are not sufficiently met out. But it can be safely said on the basis of the present study that

microteaching is certainly an affective training technique in comparison to conventional teaching practice. Though microteaching may not be helpful in providing teachers with all the skills required for professional competence yet it is instrumental for teachers, to practise behaviours, displayed by teachers in face-to-face encounters with pupils in the classroom. The skills which microteaching is designed to develop are, ideally, classroom behaviours that are specific, definable, observable, demonstrable, quantifiable and known to be causally related to desired pupil learning. On other side conventional teaching fails to provide the above mentioned merits.

Some individual studies on different skills like questioning, reinforcement, variability and so on have been conducted showing positive transfer of training to real teaching (Turney, 1976). Present study finds a place among these individual studies. Following conclusions can be drawn.

Microteaching in simulation is more effective a technique for transfer of general teaching competence to classroom teaching than the conventional practice teaching; microteaching in simulation produces same effect irrespective of the difference due to different techniques of providing feedback.

Summarised conclusions of the study related to Laboratory Stage (Training) and School Stage (General Teaching Competence), drawn in this chapter, are mentioned in the chapter VI alongwith their educational implications for better understanding.