

CHAPTER V

\*  
\*  
\*  
\*  
\*  
\* \* \* \* \* REVIEW, FINDINGS AND SUGGESTIONS

=====

- 5.1 Introduction
- 5.2 Review
- 5.3 Major Findings
- 5.4 Educational Implications
- 5.5 Suggestions for Further Work

=====

### 5.1 Introduction

In the preceeding chapters, the researcher has given the background leading to the development of the innovative technique of microteaching in teacher training programme, has reviewed the researches done in the area, has given in detail the procedure of the study and has given the results of the analysis of the collected data along with the inferences drawn from the results of the analysis. The present chapter gives a brief review of the preceeding chapters, as well as the major findings of the study and suggests how the obtained results can lead to further research in the area.

### 5.2 Review

With the attainment of independence in 1947, India faced a tremendous task of monitering a change into a democratic nation which required the great as well as the small citizens, that constitute the living substance of a nation, to move towards the set goals of the nation. This created a demand for highly trained personnel in the varied professions of life. But, with the explosion of knowledge, it became important, not only to provide them with expertise knowledge, but also to train them to act as experts in any sponteneously aroused new situation.

Thus, the country became conscious of the strategic importance of education in the present era.

With the ever-widening horizons of education, teacher education acquired a new importance. The traditional aim of education was the preservation of the quantum of knowledge but with the changing of times, the main task of education became keeping pace with modern advances in knowledge. This required a new outlook for teacher education programme, and, considering these new requirements, it was evident that (i) the teachers must have a sound philosophy of education, (ii) they must have adequate functioning psychology, (iii) they must have a dynamic sociology, (iv) they must be helped in keeping abreast of the new developments, (v) they must be prepared for their role as potential contributors towards better international understanding, and, (vi) they must be provided with and encouraged to achieve various job-skills required in their profession.

Thus, a sound teacher education programme would consist of three aspects viz. philosophy of teacher education, know-how for teachers and job-skills for teachers. The philosophical aspect of the programme forms a base for the whole training set up, but the other two aspects, more generally known as content and method, are far more important in day-to-day activities of a teacher. Education Commission (1964-66) stresses that destiny of India is being shaped in her classrooms. It is equally important that the teachers who are the sculptors of this destiny must possess the

necessary tools and skills for this task. A qualitative improvement in teacher education programme became vitally essential; but, unfortunately, teacher education programme remained a comparatively neglected thing in the post-independence period. The present pattern of teacher education programme consists of two parts viz. theory courses and the practical training, and a number of studies have criticized the programme and have drawn attention to the flaws therein (University Education Commission, 1949; Secondary Education Commission, 1953 ; Education Commission, 1966; Pandey, 1969; Trivedi, 1969 and Lulla, 1969). The Education Commission (1964-66) has suggested several measures for improving the quality of teacher education in India, yet, the present condition is not upto the mark and is described by Buch and Yadav (1974) in words, 'Much dissatisfaction has been shown about the training provided to the teachers; the trainees are not satisfied, the consumers are not satisfied, and more than this, even the trainers are not satisfied with the training programme.'

Practice teaching is the backbone of teacher-education programme as it is directly connected with the development of skills that a teacher will use in his future work in a classroom. The task of practice teaching programme is to provide adequate and effective experiences for student-teachers through vigilant and stimulating supervision and to help them acquire skills and competence for meeting various teaching-learning situations. In actual practice, however, as revealed by many studies in the area,

one comes across many flaws in the practice teaching programme viz. (i) organization of content with the approach to teaching is not proper, (ii) practice teaching tends to be a mechanical way of following pre-laid steps, (iii) background of students and related demographic variables are not taken into account while chalking out the programme, (iv) continuous evaluation of teaching is not achieved, (v) remarks of the supervisors are vague and lacking in specific feedback, (vi) there is more emphasis on telling rather than on discussing and (vii) practice teaching is only perfunctory, fulfilling only the official requirement. Passi and Shah (1974) have suggested that there is a great need to make student-teaching programme more effective as it is the pivot of teacher education programme. A need has arisen to frame student-teaching programme on sound empirical basis and to find out alternatives for the traditional programme. It has become necessary that the art of teaching is analysed into its various components and is put on a more scientific basis.

The programme of training the student-teachers through practice teaching hinges on two aspects viz. classroom teaching by student-teachers and the observation of their performance and feedback given by the supervisors. Teaching is a complex process and if an analytic approach is tried in practice teaching, the approach will naturally depend upon the analysis of the process of teaching into various component skills and specifically defining these skills to provide for effective feedback. Teaching constitutes

of a number of verbal and nonverbal acts like questioning, explaining, accepting pupils' responses, rewarding, smiling, nodding to pupils' responses, movements, gestures, etc. These teaching skills can be looked upon as a set of related verbal or nonverbal acts or behaviours performed with an intention to facilitate pupils' learning.

The complex task of teaching has been analysed into limited but well-defined components called teaching skills or technical skills that can be taught, practised, evaluated, predicted, controlled and understood. Gage (1968) has defined technical skills as specific instructional techniques and procedures that a teacher may use in the classroom. They represent an analysis of the teaching process into relatively discrete components that can be used in different combinations in the continuous flow of a teacher's performance. Allen (1966) has pointed out that the identification of representative skills and devotion of time in teacher education to these relatively narrow skills will help teachers, not only to become adept in skills themselves but, also to improve their general competence as well.

Teaching skills can be identified through various approaches viz. (i) by observing teachers in a variety of classroom situations, (ii) by analysing the teaching act through interview and discussion, (iii) by analysing the curriculum and its objectives and thinking out the best teaching skills to achieve

them, and (iv) by conceptualizing a model of good teaching based on the opinions of teachers, pupils, headmasters etc. The first approach of identifying the teaching skills has been a more rewarding one and Baral et. al. (1968) have evolved through this approach a taxonomy of teaching behaviours at Stanford Centre for Research and Development in Teaching. This idea of viewing teaching as consisting of various component skills was first taken up at the Stanford University teacher training programme and Allen et al. (1969) list 14 teaching skills tried at Stanford.

Analysing teaching into various skills necessitated a new training approach as the old traditional training took into account all skills at a time simultaneously. Various methods of training teachers in particular skills have been demonstrated but the most applicable and the most investigated method is micro-teaching. Basically, microteaching is a scaled down teaching encounter in which a teacher teaches a group of about five pupils for a period of five to seven minutes and practises one skill at a time. A general pattern of microteaching training that evolved at Stanford follows the undermentioned steps :

- (1) A particular skill is defined in terms of a pattern of teaching behaviour.
- (2) A film or a videotape of teachers using the particular skill is shown. A commentary on the specific instances of the use of the skill is given side by side.

- (3) The trainee plans a lesson for using the skill and teaches a group of pupils.
- (4) A videotape feedback is provided and the trainee analyses his performance with the help of the supervisor. His attention is drawn to the effective use of the skill and also to instances where the skill could have been used.
- (5) The trainee replans the lesson and the revised lesson is retaught to a different group of pupils.
- (6) Feedback on 'reteach' is provided through videotape and if necessary, teach-critique-reteach-recritique cycle is repeated.

Thus, it is apparent that microteaching is teaching in a relatively simple and non-threatening context, the trainee can focus his attention on clearly specified aspect of his behaviour and provision is made for much fuller and more objective feedback.

Microteaching, as an innovative technique of teacher training, provides a useful tool to help the trainees in developing teaching skills under laboratory conditions. The importance of microteaching approach is revealed through the five essential propositions given by Allen et al. (1969) viz. (i) microteaching is real teaching, (ii) microteaching lessons the complexities of normal classroom teaching, (iii) microteaching focuses on training for the accomplishment of specific tasks, (iv) microteaching allows for increased control of practice and (v) micro-teaching greatly expands the normal knowledge of results or feedback dimension in teaching.



Initial training of teachers in pre-service training is a highly complex task and microteaching provides an answer by making the training process more scientific. It prepares the trainees for their initial teaching experience and bridges the gap between their formal study of classroom teaching and actual classroom teaching practice. Introducing microteaching in colleges of education can help the training process and its administration in the following ways :

1. It can initiate the trainees to analyse and develop teacher behaviours under laboratory conditions.
2. It can land novice teachers gradually in the real classroom after gaining enough confidence.
3. It can impart intensive training in the component skills of teaching.
4. It can help involve the trainees in the feedback process.
5. It can help lessen the workload of teacher educators with the involvement of the peer supervisors.
6. It can help lessen the burden upon the practicing schools.
7. It can help explore the human resources to the maximum and can help economise time, money and material.

Microteaching aims at developing teaching competence through the development of various component skills. Travers (1975) however, criticises this competency based teacher education programme on the ground that teaching is not merely a sum total of various skills but involves something more in the form of personal variables of a teacher. Demographic variables have a

direct bearing on the success and resourcefulness of a teacher in classroom. Classroom teaching is a process of interaction between the teacher and the students and the teacher's personal variables affect his personal perception, information feedback, stereotyping, sensitivity to pupil needs, social skills in specific contexts and his expectations of the pupils. Study of teacher-pupil interaction highlights the effect of demographic variables and Runkel (1958) has suggested a simple model of interaction which consists essentially of two identical components ( Figure 2 ). Researches have also focused upon the importance of personal characteristics of the teachers at pre-service as well as in-service level ( Cohen, 1969; Gowan, 1955; Warburton et al., 1963; Morrison et al., 1973; Getzels et. al., 1963; Gupta, 1976; Nair, 1962; Bell, 1968 and Das et al., 1978).

Studies conducted in India in the field of microteaching indicate that microteaching is an effective technique for modification of teacher behaviour. Studies by Tiwari (1967), Chudasama (1971), Marker (1972), Passi and Shah (1974), Singh (1974) and Das et al. (1976) have shown that microteaching is a better technique of training than the traditional training approach. Suggesting for further studies in the area, Trott (1977) has suggested aptitude X treatment interaction studies to try to provide optimal training procedures for teachers with different abilities, interests and backgrounds.

Microteaching is on the way to becoming an established thing for the teacher training colleges; yet, further investigations are necessary. The present study evolved out of the contemplations of the following aspects of microteaching and its implementation in training colleges :

- (1) Most of the practice teaching work is done in the traditional manner even when microteaching is added as a slight recent development. A system of auto-instruction along with traditional pattern may yield a better dividend. Handbooks in different skills can be used as autoinstructional material and thus symbolic modelling may help development of general teaching competence through traditional practice teaching.
- (2) Trainees' personal variables should be considered as important  $\Delta$  covariates in the development of general teaching competence.
- (3) A comparison of two microteaching approaches viz. microteaching in simulated condition and microteaching in real situation is necessary if optimum returns are to be obtained from introducing microteaching.
- (3) Factors like availability of facilities in schools for real situation work and adjustment of microteaching training time table with the school time table need be considered in implementing microteaching as a regular feature.

Thus, the development of general teaching competence is closely connected with the personal background of the trainees, administrative facilities for the training technique to be adopted and the selection of the training approach. Figure 3 gives this flow diagram for the development of general teaching competence.

It is clear that the teacher-trainees under the influence of their personal demographic variables and according to the administrative facilities available, pass through different training programmes with an ultimate goal of developing instructional skills which in turn lead to the development of general teaching competence. The present study attempted to analyse the effect of different training approaches on the development of general teaching competence and also the effect of demographic variables on such development.

Keeping in view the facts about the effectiveness of micro-teaching as revealed through the studies in the area and the effect of personal variables of trainees that contribute to the development of general teaching competence, it was decided to study the development of general teaching competence of student-teachers through three training approaches viz. traditional training coupled with autoinstructional material, microteaching training in simulated condition and microteaching training in real situation, and also to study the effect of some demographic covariates like sex, intelligence, SES, nAch, teacher attitude, anxiety and personality factors on this development of general teaching competence.

Thus, the problem for the present study was taken up as follows :

'Developing Instructional Skills in Teachers Using Auto-Instructional Material and Using Microteaching Approach under Simulated Condition and Real Situation - A Comparative Study.

The topic of the study refers to certain terms which were used in their special context. Instruction skills refer to those components into which the task of classroom instruction is analysed, and which can be taught, practised, evaluated and controlled. The skills selected for the present study were : (i) introducing a lesson, (ii) stimulus variation, (iii) silence and nonverbal cues and (iv) achieving closure.

The teachers for the present study were the trainees of Shri Rang Shikshan , Mahavidyalaya, Bilimora.

The term auto-instructional material encompasses a broad category of devices ranging from programmed instruction from a machine to paper sheets, folders etc. The term here referred to symbolic modelling in the form of written description of teaching skills.

Microteaching approach referred to the system of specific skills training which was developed at Stanford and followed a general cycle of teach-critique-reteach-recritique. Simulated condition referred to the situation in which the peers acted

as pupils in the microlessons. Real situation referred to the situation where real pupils from a school were taught in micro-teaching settings.

The study was delimited in certain ways. The locality selected for the study was Bulsar District in Gujarat and the sample was from only one training college viz. Shri Rang Shikshan Mahavidyalaya, Bilimora. The practice teaching was limited to teaching of Science only in Gujarati medium. The skills selected for practice in microteaching were only four skills viz. introducing a lesson, stimulus variation, silence and non-verbal cues and achieving closure. The feedback technique was the simplest available viz. feedback by supervisor as well as peers.

The present investigation attempted to study the effect of the three different training approaches on the acquisition of general teaching competence and also the effect of demographic covariates on this acquisition. Thus, the objectives of the study, in brief, were :

- (i) to study and to compare the effects of the three training approaches on the acquisition of general teaching competence;
- (ii) to study and to compare the effect of microteaching alone in two approaches and microteaching followed by macroteaching on acquisition of general teaching competence; and,
- (iii) to study the effects of covariates like sex, intelligence, anxiety, SES, teacher attitude, nAch and personality factors on the development of general teaching competence through the three training approaches.

Considering the three training approaches and the other covariates under study, several null hypotheses were formed. In brief, the hypotheses stated that :

- (i) there is no significant difference in the acquisition for general teaching competence by the TRT group, the MTR group and the MTS group;
- (ii) macroteaching that follows microteaching has no significant effect on the acquisition of general teaching competence by the two microteaching groups; and
- (iii) sex, intelligence, SES, anxiety, teacher attitude, nAch and personality factors have no significant effect on the acquisition of general teaching competence through the three training approaches.

The sample for the present study was the trainees who had offered Science as one of their special methods of teaching for B.Ed. degree during two successive years viz. 1976-77 and 1977-78. During 1976-77 there were 30 trainees in all, 21 male and 9 female. During 1977-78 there were 24 trainees; 12 male and 12 female. Thus, the whole sample consisted of 54 trainees.

The following tools were used in the present study :

- (1) General Teaching Competence Scale ( Appendix 2 ).

The scale was adopted from the Baroda General Teaching Competence Scale and was modified to make certain items more specific and to make it more suitable to the scheme of evaluation of student-teaching followed at the training college where this study was undertaken. Reliability of the scale was found to range from 0.62 to 0.83.

## (2) Observation Schedules for the Skills (Appendix III )

These schedules were prepared at the CASE, M.S. University of Baroda and each schedule gave behavioural components for the skill to be practised. Relating to the four skills taken up for the training through microteaching, four schedules of the category type were used in the study.

## (3) Madhooker Patel's Intelligence Test ( Appendix IV )

## (4) Sinha's Anxiety Scale ( Appendix V ).

## (5) Minnesota Teacher Attitude Inventory ( Appendix VI ).

## (6) Socio-Economic Status Scale ( Rural ) prepared by Udai Pareek and G. Trivedi ( Appendix VII ).

## (7) Socio-Economic Status Scale ( Urban ) prepared by Kuppuswami ( Appendix VIII ).

## (8) Thematic Apperception Test adapted by Mehta (1969) from the original for trying out on Indian sample and used for measuring need for achievement ( Appendix IX ).

## (9) The 16 PF Test by Dr.Cattell and Dr.Eber (Appendix X ).

The system of training and data collection adopted in the present investigation is given below. The planning of the training procedure was done with a view to blend it smoothly with other routine traditional training programme of the college. The training arrangement was made easier due to the fact that the group of Science trainees formed a disjoint set and could work separately without disturbing the training in the other methods of teaching. The successive training and evaluation stages followed in the study were as under :



- (i) The trainees were familiarized with the objective based lesson planning and were trained in preparing plans for lessons.
- (ii) The trainees were acquainted with the General Teaching Competence Scale on which their performance was to be evaluated. Each item of the Scale was explained with suitable examples.
- (iii) A programme of demonstration lessons followed wherein the trainees observed Science demonstration lessons of three supervisors.
- (iv) All the trainees gave two Science lessons and were evaluated on GTC Scale. An average of these two lessons gave pre-training score for each trainee. On the basis of these pre-training scores, the trainees were divided into three groups viz. (i) the group that was to receive traditional training coupled with autoinstructional material i.e. the TRT group, (ii) the group that was to receive training through microteaching under simulated condition i.e. the MTS group and, (iii) the group that was to receive training through microteaching in real situation i.e. the MTR group. The groups were equated on the basis of mean and standard deviation.
- (v) The trainees in the TRT group were given autoinstructional material which consisted of handbooks which described the four selected skills, gave teaching episodes based on the use of the skills and explained the behavioural components of the skills. The group was asked to study the handbooks and to see that they implemented the skills in their future practice teaching lessons. As for the trainees in the two microteaching groups, they were oriented in the microteaching approach through explanation about microteaching and micro-teaching cycle, discussion of the four skills and demonstration of microlessons based on these skills.

- (vi) During the next stage of the programme, the trainees in the TRT group gave eight practice teaching lessons. The trainees in the MTS group gave eight microlessons under simulated condition and the trainees in the MTR group gave eight microlessons in real situation. The complete microlesson cycle was of 35 minutes and the trainees gave two microlessons in each of the four selected skills. All the trainees completed a total of ten practice teaching lessons at this stage.
- (vii) All the trainees gave one practice teaching lesson of the traditional type. This was their 11th practice teaching lesson and their performance was evaluated at this stage on GTC Scale. Their scores on GTC Scale gave post-treatment score of the first stage and also gave gain in general teaching competence from the pre-training to the 11th practice teaching lesson level i.e.  $G_{1-11}$ .
- (viii) During the next stage, all the trainees gave four practice teaching lessons in traditional type. This completed their 15 practice teaching lessons. Subsequent to this, the trainees gave their 16th practice teaching lesson and their performance was again evaluated on GTC Scale. This evaluation gave post-treatment score of the second stage and also gave the gain in general teaching competence from the pre-training to the 16th practice teaching lesson level i.e.  $G_{1-16}$ .

The complete programme of training and evaluation was arranged in accordance with the routine programme of the college and was spread from the middle of June to the middle of February. The above programme of the year 1976-77 was repeated during the year 1977-78 for the validation of the results as well as to increase the number of subjects to make the findings of the

study more reliable. So far as data on the other covariates was concerned, the Anxiety Scale, the Teacher Attitude Inventory, the TAT and the 16 PF Questionnaire were administered in the beginning of the year. Data on SES Scales and Intelligence Test were collected at convenient time during the year.

In the present investigation, the independent variable was the treatment given in the form of the three training approaches. The dependent variables were the gain in general teaching competence at the 11th and 16th practice teaching lesson level i.e.  $G_{1-11}$  and  $G_{1-16}$ . Along with the independent variables of the three training approaches, sex, SES, intelligence, anxiety, teacher attitude, nAch and personality factors, were taken as covariates. The analysis of the data was done through the statistical techniques of t-test, analysis of variance, analysis of covariance and Duncan's multiple range test.

### 5.3 Major Findings

The primary aim of the present investigation was to study the development of general teaching competence through the three training approaches viz. traditional training coupled with autoinstructional material, microteaching under simulated condition and microteaching in real situation. The investigator also studied the effects of covariates mentioned before on this development of general teaching competence. The following two sections give separately these findings of the study :

5.3.1 Development of GTC : This part of the study was related to the effect of the three training approaches on the acquisition of general teaching competence at two levels viz. the 11th and the 16th practice teaching lesson level. The analysis of the data have dealt with the three groups as whole i.e. the TRT, the MTS and the MTR groups. Important findings under this head are as follows :

1. The greatest increase in GTC was for the MTR group and the least for the TRT group. Main development in GTC in all the three groups was during the initial phase of the training i.e. from pre-training to the 11th practice teaching lesson level.
2. Variability of the groups was affected by the training approaches. For the TRT and the MTS groups, the variability had increased and for the MTR group, the variability had decreased but the change in variability was significant in the TRT group only; the increase in SD being significant at 0.05 level.
3. The development of GTC was almost uniform from the pre-training stage to the 16th practice teaching lesson level for the TRT group whereas the development was greater during the initial training phase i.e. from pre-training to the 11th practice teaching lesson level for the MTS and the MTR groups.
4. Development of GTC from the 11th to the 16th practice teaching lesson level i.e. during the latter phase of the training was similar for the TRT and the MTR groups but was greater for the MTS group. Gain GTC during this phase of the training for the MTS group differed significantly from that of the TRT and the MTR groups.

5. The differences in  $G_{1-11}$  for all the three groups among themselves were significant at 0.01 level. The values of  $t$  were 11.98 for the TRT-MTR difference, 5.88 for the TRT-MTS difference and 3.45 for the MTR-MTS difference.
6. The values of  $t$  for differences in  $G_{1-16}$  were 11.82 for the TRT-MTR difference and 7.08 for the TRT-MTS difference and both these values were significant at 0.01 level. As against this, the difference in  $G_{1-16}$  for the MTR-MTS groups was not significant, the value of  $t$  being 2.03 only.
7. Year-wise comparison of the development in GTC of the three groups showed that similar and consistent results were obtained from year to year for all the three groups at both the levels of acquisition of GTC.

5.3.2 Effect of Covariates : To study the effect of co-variates on the development of general teaching competence through the three training approaches, the three main groups were sub-divided into six groups according to higher or lower score on the concerned covariate. The six groups thus formed were examined for differences among them through analysis of variance, analysis of covariance and Duncan's multiple range test. Major findings under this head are as follows :

1. Sex :

- (a) Sex was effective as a covariate in differences among  $G_{1-11}$  means in microteaching groups only. The MTS.M group differed significantly from the MTS.F and the MTR.M group but the MTS.F group did not differ from the MTR.F and the MTR.M groups.

- (b) Sex difference was not effective at  $G_{1-16}$  level.
- (c) Sex did not contribute as an effective factor during the development of GTC from the 11th to the 16th practice lesson levels.

## 2. SES :

- (a) SES level as a covariate was not effective in differences among  $G_{1-11}$  means and  $G_{1-16}$  means in the TRT group.
- (b) SES level was effective in differences among  $G_{1-11}$  means in microteaching groups. The MTR.H and the MTR.L groups did not differ significantly from the MTS.L group but differed significantly from the MTS.H group.
- (c) SES level was effective in differences among  $G_{1-16}$  means in microteaching groups. The MTS.L group differed significantly from the MTR.L group but not from the MTS.H and the MTR.H groups.
- (d) Development in GTC from the 11th to the 16th practice lesson level showed a reversal of the order of group means in the MTS group. Development of GTC during this phase of the training was higher for the higher SES group but the difference was not significant.

## 3. Intelligence :

- (a) Intelligence as a covariate was effective only in the microteaching groups. The MTR.L group has the highest group mean which differed significantly from the other means.
- (b) Intelligence as a covariate was equally effective for the MTS.H, the MTS.L and the MTR.H groups for the acquisition of GTC at both the levels of acquisition.

- (c) High and low intelligence groups in the TRT group did not show any significant differences.

4. Anxiety :

- (a) Anxiety levels in the trainees did not affect their gain in GTC through traditional training coupled with autoinstructional material at both the levels of acquisition.
- (b) Anxiety levels were effective in the microteaching groups. At the 11th practice teaching lesson level, the MTS.H group did not differ significantly from the MTR.H and the MTR.L groups but the MTS.L group differed from the two.
- (c) At  $G_{1-16}$  level, all the microteaching groups i.e. the higher and the lower groups for the MTS and the MTR groups did not differ significantly.
- (d) Though not significantly better, the low anxiety group in the MTR group only showed a higher group mean at both the levels of acquisition of GTC.

5. Teacher Attitude :

- (a) The group mean for the MTR.L was the highest at both the levels of acquisition of GTC and differed significantly from the other means.
- (b) The MTS.H, the MTS.L and the MTR.H groups did not differ significantly from one another at both the levels of acquisition.
- (c) Teacher attitude as a covariate was effective for microteaching training but not for traditional training.

#### 6. Need for Achievement :

- (a) Levels of nAch. affected significantly the gains in GTC for the microteaching groups but for the traditional training groups.
- (b) The MTS.H, the MTS.L and the MTR.L groups did not differ from one another but the MTR.H group had the highest group mean which differed significantly from the other group means at both the levels of acquisition of GTC.
- (c) Microteaching in real situation for the higher nAch. group of trainees was the most effective training for developing GTC.

#### 7. Personality Factor A :

- (a) Personality Factor A as a covariate was effective only when the students were trained through the microteaching approach and not through the traditional training coupled with auto instructional material.
- (b) Lower factor level group (A-) had higher group means in the MTS and the MTR groups but the differences were not significant.
- (c) In the microteaching groups, the MTS.L and the MTR.H groups did not differ significantly at  $G_{1-11}$  level but the MTS.H group differed significantly from the MTR.H group.
- (d) At  $G_{1-16}$  level, an overlapping pattern of differences of  $G_{1-11}$  level was reduced to a simpler form.

#### 8. Personality Factor C :

- (a) Training through the traditional approach was not affected by the higher or the lower levels of personality factor C. The TRT.H and the TRT.L groups did not differ significantly at both the levels of the acquisition of GTC.



- (b) In the microteaching groups, an overlapping pattern of differences was seen in the higher and the lower level groups. The MTS.L group did not differ from the MTS.H group but differed from the MTR.H group. Similarly, the MTR.H group did not differ significantly from the MTR.L group but differed from the MTR.H group.
- (c) The overlapping pattern of differences among the microteaching groups at  $G_{1-11}$  level was reduced to a simpler form when traditional practice teaching followed microteaching.
- (d) Though the differences were not significant, the higher factor level group ( C + ) in the MTS group and the lower factor level group ( C - ) in the MTR group tended to gain better at both the levels of acquisition of GTC.

9. Personality Factor E :

- (a) Personality factor E as a covariate did not affect the development of GTC in the TRT group.
- (b) In the microteaching groups, an overlapping pattern of differences was observed among the higher and the lower factor level groups. The MTS.H group did not differ from the MTS.L group but differed significantly from the MTR.H group. Similarly, the MTR.L group did not differ from the MTR.H group but differed significantly from the MTR.L group.
- (c) Though not significantly different, the lower factor level groups ( E - ) had a tendency to gain higher during microteaching training, especially for microteaching in real situation.

10. Personality Factor F :

- (a) At the 11th practice teaching lesson level in the microteaching groups, the MTS.H group had the lowest group

mean and differed significantly from the other group means while the MTS.L, the MTR.L and the MTR.H groups did not differ significantly from one another.

- (b) When traditional practice teaching followed the micro-teaching training, the MTS.H group still had a lower group mean but it differed significantly from the MTS.L and the MTR.H groups and not from the MTR.L group.
- (c) The order of group means changed from  $G_{1-11}$  to  $G_{1-16}$  in the microteaching groups and showed an interaction effect of the second phase of the training.
- (d) The higher and the lower factor level groups at both the levels of acquisition of GTC did not differ significantly for the TRT group.

(11) Personality Factor G :

- (a) Personality factor G was effective as a covariate only to the extent that at the  $G_{1-11}$  level, the MTS.H group did not differ significantly from the MTR group.
- (b) Factor G had no significant effect on the development of GTC at  $G_{1-16}$  level for all the three training approaches.

(12) Personality Factor H :

- (a) Factor H was not effective as a covariate for the TRT group.
- (b) At  $G_{1-11}$  level in the microteaching groups, an overlapping pattern of differences was seen. The MTS.L group did not differ from the MTS.H group but differed significantly from the MTR group. Similarly, the MTS.H group did not differ from the MTR.H group but differed significantly from the MTR.L group.

- (c) At  $G_{1-16}$  level, the overlapping pattern of differences among the microteaching groups at  $G_{1-11}$  level was retained in a simpler form.

(13) Personality Factor I :

- (a) Personality factor I had no significant effect on the development of GTC through the tradition training coupled with autoinstructional material.
- (b) Effect of factor I was the most marked on the MTR.L group at  $G_{1-16}$  level where the mean of the MTR.L group was the highest and differed significantly from the other group means.
- (c) The MTS.L, the MTS.H and the MTR.H groups did not differ significantly from one another at both the levels of acquisition of GTC.

(14) Personality Factor L :

- (a) At  $G_{1-11}$  level, the MTS.L and the MTR.H groups differed significantly from each other as well as from the other groups.
- (b) The highest and significantly differing group mean was for the MTR.H group.
- (c) Microteaching training in real situation for the lower factor level group and microteaching training under simulated condition for the higher factor level group were equally effective at  $G_{1-11}$  level.

(15) Personality Factor M :

- (a) Personality factor M had no significant effect on the development of GTC through the two microteaching approaches at both the levels of acquisition.

- (b) Factor M was found to be significantly effective as a covariate in traditional training coupled with auto-instructional material. The TRT.L group had a significantly different and higher group mean than that for the TRT.H group.

(16) Personality Factor N :

- (a) Personality factor N was found to be effective as a covariate at  $G_{1-11}$  level only to the extent that the MTS group as whole did not differ significantly from the MTR.H group but differed significantly from the MTR.L group.
- (b) For the higher factor level group microteaching training under simulated condition was equally effective as microteaching training in real situation at both the levels of acquisition of GTC.
- (c) When traditional practice teaching followed the microteaching training, the group mean for the MTR.L group at  $G_{1-16}$  level was the highest and differed significantly from the other means.

(17) Personality Factor O :

- (a) Personality factor O was not found to be significantly affecting the development of GTC in the TRT group.
- (b) Microteaching training under simulated condition for the higher as well as the lower factor level group of trainees and microteaching training in real situation for the lower factor level group of trainees were equally effective at both the levels of acquisition of GTC.
- (c) The pattern of differences among the groups did not change from the 11th to the 16th practice teaching lesson level.

(18) Personality Factor  $Q_1$ :

- (a) Personality factor  $Q_1$  was effective as a covariate in the microteaching groups at  $G_{1-11}$  level of acquisition of GTC and an overlapping pattern of differences was observed. The MTR.H group did not differ from the MTS.L group but differed significantly from the MTS.H group. Similarly, the MTR.L group did not differ from the MTR.H group but differed significantly from the MTS.L group.
- (b) When traditional practice teaching followed the microteaching training, personality factor  $Q_1$  was not found to be effective as a covariate in the acquisition of GTC at the 16th practice teaching lesson level.

(19) Personality Factor  $Q_2$ :

Personality factor  $Q_2$  was not found to be significantly affecting the development of GTC through the three training approaches.

(20) Personality Factor  $Q_3$ :

Personality factor  $Q_3$  was not found to be significantly affecting the development of GTC through the three training approaches.

(21) Personality Factor  $Q_4$ :

- (a) Factor  $Q_4$  was not effective as a covariate in the TRT group.
- (b) At  $G_{1-11}$  level, the MTS.H group did not differ from the MTS.L group but differed significantly from the MTR.H and the MTR.L groups.

- (c) Both the microteaching training approaches were equally effective for the lower factor level group of trainees.
- (d) Traditional practice teaching that followed the microteaching training changed the order of the group means. At  $G_{1-11}$  level, the group mean for the MTR.L group was the highest while at  $G_{1-16}$  level, the highest group mean was for the MTR.H group. The MTR.H group benefitted the most from the second phase of the training.

To sum up, considering the various covariates jointly, it seems that a combination of IQ ( + ), personality factor A ( + ) and L ( - ) would be the most effective for training through the traditional training approach. For microteaching training under simulated condition, a combination of anxiety ( + ), personality factor F ( - ), H ( + ) and L ( - ) would be the most effective one and for microteaching training in real situation, a combination of IQ ( - ), teacher attitude ( - ) nAch. ( + ), personality factor A ( - ), F ( + ), I ( - ), L ( + ), N ( - ) and  $Q_4$  ( - ) would prove the most effective for development of GTC.

#### 5.4 Educational Implications

Research studies in education, especially those pertaining to the teaching-learning process are aimed at determining the effect of various in-put programmes and ascertaining the effects of diverse variables on the out-put. The studies, giving the final results, endeavour to judge situation among persons and methods that is the best one for getting maximum possible output

for a particular programme. They hint at condition or a pattern of conditions that would substantiate the outcome of a practical classroom teaching - learning scheme. Such educational implications of a study suggest how the findings can be utilized for a better programme in practice. The present study was concerned with examining the effects of the three training approaches and other demographic covariates on the development of general teaching competence in student-teachers. The researcher gives below some salient educational implications that are contingent upon the findings of the study :

(1) Development of GTC was found to be the highest at  $G_{1-11}$  level for microteaching in real situation so it seems that the training programme should incline more to microteaching training in real situation. Conducting microteaching in real situation presents some administrative problems; hence, the choice for the next best should be microteaching under simulated condition. As discussed in the findings, microteaching under simulated condition when followed by traditional practice teaching will yield equally well gain in general teaching competence.

(2) Trainees with lower SES level showed better gain in GTC for all the three training approaches. If the student-teachers are trained through microteaching, it seems that microteaching training under simulated condition for the lower SES group of trainees will prove as effective as microteaching

training in real situation and will yield gains in GTC that do not differ significantly.

(3) So far as intelligence is considered as a covariate, the highest and significantly differing mean was for the MTR.I group. Thus, it seems that for obtaining the highest possible out-put in terms of gain in GTC for a particular programme, the combination of the lower IQ group of trainees and microteaching in real situation will prove an ideal one. Similarly, it also seems that microteaching training in real situation for the higher group will be equally effective as microteaching training under simulated condition. Generally, the teacher-trainees' IQs range from average to above average and in the present study, the lower IQ range referred to average IQ level to IQ upto 118. If training programme for different IQ levels is adjusted accordingly, it will prove beneficial in terms of gain in GTC as well as some administrative problems.

(4) Scores on teacher attitude can predict how well successful a teacher will be in the profession. So far as training is concerned, it seems that for the group of trainees having lower teacher attitude, microteaching in real situation will prove the most beneficial as it gave the highest significantly differing gain in GTC for the group.

(5) It was observed that the group of trainees who were mild, obedient and confronting ( E - ) showed a better gain



in GTC at both the levels of acquisition. Thus, it seems that the trainees who are low on personality factor E will benefit more from the microteaching training either under simulated condition or in real situation.

(6) It seems that for the trainees who are prudent, serious and sober ( F - ), microteaching under simulated condition will prove equally effective as microteaching in real situation. Thus, microteaching training under simulated condition for trainees scoring low on personality factor F will prove more effective in terms of gain in GTC as well as administrative ease.

(7) Study of personality factor L as a covariate revealed that the MTS.L and the MTR.H groups differed significantly from each other as well as from the other remaining groups. Thus, so far as microteaching training under simulated condition is concerned, it seems that adaptable, easy to get along with and trusting type ( L - ) of trainees will be more accommodated with the training approach and will benefit to a greater extent from the training. For microteaching training in real situation, this will be true for the trainees who are self-opiniated, hard to fool and not so ready to adopt things (L +).

(8) Apart from the innovative changes to some extent, most of the work in practice teaching is being carried out through the traditional training approach. Personality factor M was the only covariate that was found to be affecting the development

of GTC when the student-teachers were trained through traditional training coupled with autoinstructional material. The study has shown that the trainees who are careful, conventional, practical and regulated by external realities ( M - ) will benefit more from this training approach. As against this, it seems that traditional training for the trainees who are imaginative and careless of practical matters ( M + ) will yield a lesser gain in GTC.

#### 5.5 Suggestions for Further Work

Research in any branch of the human knowledge is never a closed book. There is always a need for finding solutions to new problems and testing the results of the older problems. Human nature is so complex that any combination of characteristics may not present a complete and final picture and problems may not be solved in the same fashion and may not reveal similar findings. This is the dynamism of human nature. Looking back upon the work done in the present study and the findings of the study, the researcher remembers many instances when he felt that further work was necessary in order to add to and shed new light to the work already done. There could be the following suggestions for further work relevant to the study :

- (1) The present study was limited to one teaching subject and four skills only. The skills were selected keeping in view the teaching of Science; and thus, the skills were practised through the teaching of topics in Science only. Thus, the findings

of the present study are limited by these two delimitations. A similar study can be taken up by selecting other subjects of teaching and skills related to them in order to see whether findings similar to the present study are obtained or not. Such a study can also encompass more than one teaching subject which can help broaden the scope for the selection of the skills and can also include more trainees which in turn may lead to more reliable results.

(2) It was observed in the present study that the lower SES group of trainees showed a higher acquisition of GTC at  $G_{1-11}$  level and this tendency was maintained at  $G_{1-16}$  level by the TRT and the MTR groups. This tendency of the low SES group to acquire higher mean gain may be due to their desire to do better. As against this, Patel (1977) reports that SES had no effect on the performance of the student-teachers. It is also probable that the findings in the present study viz. the trainees having higher SES tended to score lower, can be a fact associated with the location of the present study where the population is generally believed to be comparatively more habituated to take things less seriously. It would be interesting to repeat the study at some other location and to see whether the findings corroborate the findings of the present study.

(3) It was found in the present study that the average intelligent group of trainees had a higher mean gain in GTC as

compared to the higher groups; in fact the MTR.L group had the significantly differing highest group mean at both the levels of acquisition of GTC. It was observed by the researcher during the training that the trainees in the higher IQ group were rather sceptical about the training approach and this might have resulted in their low acquisition. Further probe in this fact is needed through a study which would go deeper in the relation of the levels of intelligence of the trainees and their gain in GTC through various training approaches.

(4) So far as the effect of teacher attitude as a covariate is concerned, a curious fact was observed that the lower teacher attitude groups had higher group means for all the three training approaches. A common notion that success in teaching and higher teacher attitude go together has been supported by Samantroy (1971) and Gupta (1977). The findings of the present study show a marked deviation from the common trend and this can be explained by a probable reason that the persons that came for the training were attracted towards the profession not because of their positive attitude towards the profession but due to some other reasons. The researcher feels that it would prove more fitting if the effect of teacher attitude is studied by taking pre-training and post-training measures of teacher attitude and finding their relation with the development of GTC through various training approaches. Such a study may reveal interesting results.

(5) It was observed in the present study that the trainees who were reserved, detached, critical in appraising situations and cool (A - ) tended to acquire a higher mean gain in GTC at  $G_{1-11}$  level when trained through microteaching. Though the differences were not significant, the trend persisted even at  $G_{1-16}$  level. The reverse was true for traditional training where out-going, warm-hearted and participating trainees (A +) tended to acquire higher mean gain. It is a common observed fact that outgoing and warm-hearted persons would prove more effective as teachers. A further investigation into the relation of the levels of personality factor A and gain in GTC through microteaching training would help in better understanding of the effect of this factor on the development of GTC.

(6) While studying the effects of personality factors C and H on the development of GTC, it was observed that these two factors affected the gain in GTC through the two microteaching approaches in opposite manner. The trainees who were calm and could face realities (C +) as well as those who were spontaneous and venturesome (H +) tended to gain higher during microteaching training under simulated condition, while the trainees who were emotionally less stable and who could easily get upset (C -) as well as those who were shy and timid (H -) tended to gain higher during microteaching training in real situation. It seems a possibility that the trainees having lower factor levels of personality factors C and H will benefit more from microteaching

in real situation and this calls for a further probe into the effects of these two personality factors on the development of GTC through microteaching. The results of such a study may throw more light on the interaction effect of these two factors on the acquisition of GTC during the training.

(7) Teachers as a lot are usually conservative and the study by Gupta (1976) has shown that highly effective teachers scored lower on personality factor  $Q_1$  i.e. they were conservative and respected established facts. This fact was supported by observations in the present study that during microteaching training, the trainees who were conservative and respected established facts (  $Q_1 -$  ) tended to gain higher as shown by their higher mean gain and as against this, the trainees who were of experimenting type, were free thinking and critical ( $Q_1 +$ ) showed a comparatively lesser gain in GTC. It seems curious that, when a novel experimental training approach is tried, the experimenting type of trainees showed a lesser mean gain. A probable reason for this can be that they could not accept the new situation as it was, were critical about the training approach and thus showed a lesser acquisition of GTC. The researcher feels that this observation of the present study calls for further investigation about the way in which the levels of personality factor  $Q_1$  affect the development of GTC through microteaching.

(8) Teaching of various subjects calls for various combinations of teaching skills best suited for the subject. Even in teaching one subject only, different topics of same subject may require different skills or combination of skills to deal with the topic in the most effective way. A contribution of researches in micro-teaching can be made by identifying specific skills or combination of skills necessary for specific groups of topics in various subjects. Such a research will pin-point the 'when to use' and 'where to use' aspects of teaching skills and can help evolve specific teaching strategies for different subjects.

(9) The researcher in the present study used a GTC Scale which contained various skills to be observed during a practice teaching lesson. This tool can be modified to include undesirable teacher behaviours also. Evaluation of teaching performance on such a tool will lead to a more conscious elimination of undesirable teacher behaviours on the part of the trainees and thus lead to a more fruitful result of the training.

(10) In a study like this, intervening effects of human nature as well as other factors that go along with the experimental arrangement are hard to remove. Statistical control of such factors can be achieved to some extent but an ideal control calls for ideal laboratory situation in which such intervening effects may be removed to a great extent. Thus, it is required that researches in microteaching stress more on achieving such control, tryout new laboratory techniques and use more sophisticated hardware that are now being made available for using microteaching technique of training.

---