CHAPTER II

REVIEW OF LITERATURE ON MICRO-TEACHING AND INTEGRATION

2.1.0 Introduction

> 'Every research project should be based on all relevant thinking and research that has preceded it. When completed, it becomes a part of the accumulated knowledge in the particular field and so it contributes to the thinking and research that follow. For any specific project to occupy this place in the development of a discipline, the researcher must be thoroughly familiar with both previous theory and research.'
>
> (Fox, 1969).

Microteaching, eventhough, evolved as late as 1960's, become extremely popular. It soon attracted the attention of researchers as a highly promising area for further exploration. Research in this area, during 1960's and 70's grew rapidly. Most studies in microteaching in the beginning were focused on developing the technique as an alternative to practice teaching. Later, it came as an handy tool to introduce teaching to a novice teacher through simulation before he encountered real class room teaching. Studies on different components of microteaching programme, i.e. skill refinement, try outs with different types of students teachers were later followed progressively. Integration studies to have been evolved are of recent origin and only a few studies have been undertaken.

Considering the type of researches in the field, the review is classified in three sections viz.,

1. A review of studies on microteaching programme that have relation with integration.
2. A review of literature on the concept of integration, and

3. A review of studies on integration of teaching skills.

While reviewing studies on microteaching and integration some studies conducted in the Indian context have been given importance over studies conducted abroad. The studies conducted abroad, though important, due to significant differences like, use of CCTV for feedback, simulation with real learners, long term programmes, have been of secondary importance for the present study within the Indian context.

2.2.0 Review of Studies on Microteaching Programme

Developing the ability of integration becomes significant after accepting microteaching programme as a major input for developing teaching competency. Microteaching programme is hence felt inadequate to transfer the skills to the class room situation. In general, any significant problem will have its deep roots in the basic primordial activities. Besides, the integration concept will have its close relation to the ways and means adopted, in microteaching programme used for developing teaching skills.

The nature of microteaching programme accepted as a model has to be closely examined so as to arrive at a strategy of integration. Integration has two basic necessities, firstly, competency in skills to a certain essential level and secondly knowledge regarding relations between the skills and their use in the class room. It will be worth while to review the studies, from the point of how far microteaching programmes presently used are preparing the student-teacher with the essentials to enter

the integration phase. The type of skills selected and developed through microteaching is another basis to determine the nature of integration strategy to be applied. Considering the above refered aspects, it is decided to examine the reviews in microteaching which are directly concerned with the integration phase. Since the present study is to arrive at an integration strategy for the Indian Microteaching Model studies undertaken in Indian contexts have been emphasized while reviewing.

Microteaching has a few basic components viz. orientation, teach, feedback reteach and refeedback. Any variation in these components will make change in the nature of programme. A number of studies are conducted on different components. A schematic representation of studies is presented for reference in Figure 2.1. In the following pages studies in each component have been mentioned in detail.

2.2.1 Orientation

During microteaching programme each skill is introduced to the student-teacher through the orientation phase. Modelling, lecturing, demonstration, discussions, films and videos are some of the variations that have been used for orientation, following are the summary of reviews on these aspects.

Vaze (1975) studied the relative effectiveness of three types of modelling viz., symbolic modeling refered to written script, audio modeling presented in the form of listening mode, and

Fig.2.1 : SUMMARY OF STUDIES ON MICROTEACHING PRACTICE AND THEIR RESULTS

ORIENTATION

Variations : Symbolic(S),Perceptual(P) Positive Modelling(PM),Negative(N), Mixed(M),Video(V),Mediated(M),S.Live (SL), S.Audio(SA)

Studies:

Vaze(1975) S > A
Das et al(1977,79) S = P, S > P
Orme (197) P
Koran J.J.(1969,71) P
Borg et.al.(1970), P > S
White (1968), S = P
SA , S
Koran M.T.(1969) M > S
Godwin(1971) S > SLI
Young(1967) V
Myrick(1969) A > V

TEACH

Variations: Subject importance(SI) No SI(NSC),Large Time(LT)Small Time (ST).Tutorial(T),Real Student(RS) Peers (PS), Mixed (M)

Studies:

Das et al.(1977), R > P
1979 R = M, 1979 R = M
Butts (19) R > P
Levis (1973), P = R
Herner(1968), R > P
Levis (1973), R > P
Puintal(1981), NSI > SI
McIntyre & Puthier(1972) LT > ST
T

FEED BACK (F)

Variations: Supervisory (Su).Self(Se) Written(W),Oral(O),Peer(P),External Su(ES), Video(V), Audio (A), No Feedback(N), Discriminating Trg.(D),Fun lesson(FL)

Studies :

Young (1970) P = Su, Su/P/Se
Paintal et al.(1976) 2(P > Se) 3(P=Sc),(P+Su) SC
Das et al.(1977)(1979), 2(P/Se),2(P=Se),P+Sc>Sc
Baird(1967)(P+Su)
Pangotra(1973),Se>Su/ES)
Tuckmen et al(1968) P > N/Sup+P
Berg et al.(1970)Sup
Dugen(1967) Se
Orme(1966),D > FL/Se
Waimen,Ramsayer(1970) Sup = Sup + AV
Davis (1970), Se
Harrington(1970) P = Sup = Instructor
Sharma(1976),McIntyre(1971),Su=(P+Su)=P
Davis(1970),Sc
Johnson,Knoppa(1970)Su
McAlleese,Unwin(1970),S
Passi(1976), W > O
Dasagh(1974)(V+P+Se)
VetSc/V+Su+P)
Berg et al.(1970) Self > P/V
Acheson(1964)(P+V) > FL/Se
Wragg(1971) V
Bhattacharya(1975) A
Vaze(1975),A > Su

Reteach(RT) Refeedback(RF) Cycles(S)

Variations :
Different Topic (DT)
Same Topic (ST)
No Retent. = (NR)

Studies :
Paintal (1981) (NR / R) 6
Das et al (1979) DT / ST
Das et al(1979) 2C /1C/3C
Rurge(1 to 3½C)

Validation of Micro teaching approach	Studies	Results
Against concentional (C) Practice with G,TC Scale and ATT Scale	Joshi(1977),Passi(1976), Pantal(1981),Lalitha (1977),Singh(1976),Das et al.(1970),Malhotra (19),Jangira(19), Kallenkronch(1969), Marker (1972),Bell(1970),Brittan & Leith(1971),Word(1970), Harrison et al.(1970), Gonberg(1972),Macallo(1973), Legge Asper(1962)	All studies show Microteaching superiority except Schnek(1971) M = C and M
Against conventional practice with other tools	Bhattacharya(1979),Painter (1981),Dasagh(1975),Jangira (1980),Gordon Macleod(1969)	All studies show Microteaching superior
In general	Thew(1972),Legg and Asper (1962),Peek & Tucker(1971), Harris et al.(1970),Nagel(1970) Levis et al. (1973)	.. do ..
Against other practicing approaches.	Singh L.P.(1973),FIACS=M,FIACS > C , M > C Gordon Macleod et al.	

audio tape script of symbolic modelling, for presentation of skill lessons. Symbolic treatment appeared as the best treatment of the three for acquiring the skill of questioning whereas audio modelling when tried with predominantly language oriented groups of graduate teachers.

Das et al. (1977) conducted a national level project with fifteen teacher education institutes. One major objectives of the study was to try out microteaching technique with different variations so as to determine the differential effectiveness of various treatments. One of the variations studied is modelling with perceptual and symbolic modelling. Five institutes of the project reported that both perceptual and symbolic modelling tried out were equally effective in developing general teaching competency. One institute found perceptual and audio modelling were equally effective. The second national project by the same investigator has focused on the orientation variations. Three institutes studied the relative effectiveness of perceptual modelling with symbolic modelling and only one had the significant difference results indicating superiority of symbolic modelling, The other two institutes found no significant difference between the two types of modelling.

Allen, Mc Donald and Orme (1966) found that when specific skills of instruction were presented, trainee could adapt their own performance to that of the models without lessening their own individual creativity.

Orme (Mc Allese and Unwin, 1971) investigated six modelling arrangements using the microteaching format with teacher interns at Stanford. The most effective format was found to be the intern, viewing his two performance and the modelled performance with supervisor providing discriminative training.

Koran J.J. (1969) found videotape/perceptual models on questioning skills much more effective than the presentation of detailed written instruction in preparing students to write observation and classification questions. In another study Koran (1971) found symbolic modelling more effective in the case of weak students for acquiring the same skills.

Young (1967) studied the effectiveness of various types and combination of models on lecturing skills. One of the most effective modelling approach was a combination of video taped teaching with contingent focus and video tape illustrations.

Koran, M.T. (1969) revealed that film mediated models were significantly more effective than symbolic / written models in generating higher frequency, variety and quality of analytic questions by student teachers. No consistent indication was found for the superiority of perceptual models. The study also infers with the fact that skills easily describable can be effectively developed through other less expensive models.

Allen et al. (1967) tried out negative, mixed positive and negative, and positive models to find that skill acquisition was more effective when only positive models were employed. The

investigator in another study (Allen, 1967) reports questioning skill to be an equally effective symbolic and perceptual model.

Myrick (1969) found that in counselling the audio models were more effective than the video model in eliciting statements of self reliance. Further, he suggests that the audio symbolic model contains less irrelevant or distracting information than perceptual models.

Borg et al. (1970) reveals that perceptual models are more motivational than symbolic models. Most people would see demonstration of skill than the reading material provided.

Godwin (1971) evaluated the effectiveness of symbolic and symbolic live modelling against a control group using probing questioning. Symbolic model is found better than symbolic live model.

White (1968) tested the effectiveness of audio-tape model in teaching pre-service teachers to one indirect verbal behaviour and concluded that (i) students exposed with a model, perform those skill better than student not exposed at all. (ii) Symbolic modelling is as effective for teaching certain skills as in perceptual modelling (iii) Symbolic written modelling is effective in training fof certain questioning skills (iv) symbolic audio modelling is effective in training for certain non-verbal skills.

2.2.2 Teach-Session

During this stage the student-teacher, teaches a small content selected to practice a selected skill for which the participants are oriented. The teach-session is usually of six minutes with six to ten peers as simulated learners. The learner may be real or peers.

Paintal (1981) studied the effectiveness of microteaching programme on six groups through workshops, seminars and training camps. The study concludes that a majority of participants opined stating that giving much attention to subject interfers with questioning skills.

Mc Intyre and Dutheir(1972) reports that students tend to prefer larger teach lesson, and tutorial supervision. Das et al (1977) reports on a study replicated in five institutes to determine the comparative effectiveness of microteaching procedure under simulation with peer learners and under real class room conditions. Out of five, in three studies the student teachers trained under real class room condition scored significantly higher on general teaching competency scale compared to those trained through simulation with peer learners. The remaining two studies reported both the conditions equally effective.

Das et al (1979a) reports a similar study conducted comparing to situation of simulated and mixed conditions. The study reported no significant difference in the relative effectiveness of these

two conditions in developing general teaching competency in student teachers.

Das et al (1979b) presenting a report on second national research project on microteaching provides results conducted in three institutes. All the three studies show real students and peers as learners equally effective.

Words (1970) survey revealed that in secondary teacher education programme at U.S.A. peers were used as pupils in microteaching situation much more frequently than real secondary school pupil.

Butts (1968) reports a study in which reports microteach session with real students were significantly effective against peers used as learners. Study reports, that some skills can only be learnt teaching real students.

Levis et al. (1973) reveal that a microlesson for the skill of 'higher order questioning can be performed better with real students than peers. Besides, on skills, fluency and probing questioning there was no significant difference between two groups. Wood and Headly (1968) arrived with similar results as said above for the skill of questioning.

Hoerner (1969) tried to developing teaching ability and self confidence through the microteaching approach with use of peers or pupils. Seventy percent teachers indicated the preference for teaching pupils as satisfactory.

Levis et al. (1973) reported that student teachers generally preferred to teach school pupils. They agreed that (i) teaching peers did, not inhibit their performance and that it was not difficult to play the role of a peer pupil. (ii) peers provided more effective feedback than school pupils and their acting as pupil sensitized them to the skills under practice.

2.2.3 Feedback Session

During this stage the student teacher is provided with feedback about his performance. It is usually conducted for a duration of six minutes. Different modes are used for feedback viz. self feedback, peer feedback, supervisor feedback, listening to his own audio recording viewing his video cassette recording and combination of more than one.

Sharma (1976) studied the relative effectiveness of three types of feedback viz. discussion, oral and written feedback. It is found that, all the three types of feedback improved the teaching competence of student teachers. The feedback by supervisor is found more effective than that of peer and self feedback, when compared on general teaching competency scale. Sex as variable show effect with reference to feedback in the study. The effect of feedback is more for higher age group student teachers. Similarly the effects were more for science teacher than for arts teachers.

Paintal, Joshi, Seth (Das et al. 1976) conducted studies in their respective institutions in order to determine the relative effectiveness of feedback provided by college supervisor and peer supervisor. They reported that there were no significant differences in the relative effectiveness of these two sources of feedback with regard to developing general teaching competence in student teachers.

Das et al. (1977) reports a comparison between relative effectiveness of peer feedback and self feedback through audio tape. The study revealed no significant difference in the two sources of feedback for developing general teaching competence in student teachers. The investigator (1977) on the second national level project on microteaching titled relative effectiveness of variations in microteaching component reports the following briefly : Out of six studies conducted in six institutions, one study shows peer feedback superior to self feedback with significant difference. Three studies show no significant difference between peer feedback and college supervisor feedback. One study reports superiority of peers along with college supervisors to that of self using the tape. Another institute reports superiority of peer supervisor feedback with that of college supervisor.

Baird (1967) reports that the use of peer supervisors and assesors tend to sensitise the trainee, requiring fewer microteaching experiences to accomplish a particular degree of proficiency.

Mc Aleese and Unwin (1970) reports that after one years' experience, the trainees accept self evaluation favourably. Investigator infers that untrained supervisor may be a drawback in helping modify teacher behaviour.

Pangotra (1973) studied the effectiveness of different types of feedback viz. self, college supervisor and external observer. Here observations were done on the FIACS schedule. It is found that self feedback proved better than other sources. Supervisors and other feedback was better compared to that of the control group.

Dosaj (1974) compared different type of feedback for modifying teacher behaviour through microteaching with technical teachers. The types of feedback were (i) video tape and supervisor (ii) video tape, supervisor and peers (iii) video tape, supervisor peer and self. Out of the three, the third combination showed maximum improvement.

Bhattacharya (1975) conducted a study to find the feasibility of the use of audio tape a recording device for obtaining feedback. It was found that audio tape helps in producing indirectness skills and development of attitude towards microteaching.

Vaze (1975) found that audio modelling was a better technique as compared to the symbolic model for the development of the skill in questioning.

Tuckmen and Oliver (1968) studied four types of feedback viz. (i) pupil feedback at one (ii) supervisor's feedback alone

(iii) both pupil and supervisor feedback (iv) no feedback. Both treatments involving pupil feedback produced significantly greater changes than the other two treatments. Feedback by the supervisor alone and no feedback produced a greater negative shift in the teacher behaviour, away from the direction suggested by supervisor.

Harrington (1970) studied feedback by students, fellow - instructor and supervisor to be equally effective in terms of improving teacher competency. The study is cited by Sadkar and Cooper (1972).

Young D.A. (1970) found the peer supervisor to be as effective as the regular supervisor.

Borg (1970) concludes that the perceptual modelling and the video tape feedback of self evaluation as desirable practice.

Dugas (1967) reports self evaluation as helpful to professional growth in the later stages of microteaching.

Davis (1970) considers self analysis as an important objective of the teacher education programme.

Waiman and Ramsayer (1970) found that students who received audio visual feedback but no supervisory feedback did not differ in their ability in self evaluation from those students who received supervisory feedback but no audio-visual feedback.

Mc Intyre (1971) compared relative effectiveness of approaches to microteaching supervision (i) individuals with supervisors (ii) group of three students with tutor (iii) student group only. No significant difference was found between groups with supervisor and without supervisor.

Johnson and Knaupp (1970) indicated that student expect their supervisor to give them expert help in planning, conducting and evaluating their microteaching lesson and also an opportunity to master their own teaching style.

Borg et al. reports a skillful supervisor can diagnose the reasons for failure in individual cases and prescribes alternative training.

Orme (1966) studied effects of self feedback and reinforcement on the acquisition of the teaching skill involving reinforcement of pupil participatory response. It is found that the most effective variable was a form of self-viewing, accompanied by prompting by one experimenter during self-viewing. No significant difference was found between groups receiving perceptual model and supervisory feedback. In another study the investigator studied four treatments viz. (i) view-replay and instructions on lesson (ii) self feedback and instruction on pupil participation and reinforcing behaviours (iii) reinforcement and instruction on lesson and (iv) reinforcement and descrimination training. The fourth showed greater gains. No significant difference was found between the other three treatments.

Acheson (1964) compared relative effectiveness of three types of feedback : (i) supervisory (ii) pupil and video tape and (iii) self evaluation. Video tape variation was the most powerful amongst the three types.

Similar studies were conducted by Baker (1970); Wragg (1971), Borliver (1969) and Leonard et al. (1971) conducting video as an powerful component of feedback.

2.2.4 Reteach and Refeedback

This is a repetition phase of teach and feedback for further improvement by incorporating the feedback comments. The refeedback is to help him reinforce gain in teaching.

Paintal (1981) studied the effectiveness of microteaching programme on six groups trained through workshops, seminars and training camps. The study concludes that a majority of teacher trainees opined to eliminate reteach and refeedback session.

Das et al. (1979) reports of an investigation into the effects of change in the teaching unit in 'reteach' session of the microteaching procedure revealing no significant difference in general teaching competence of student teacher. The investigator presenting the report of second national project on microteaching refers to a study with reference to reteach component. The study was aimed to, study the number of cycles required to reach the satisfactory level of skill competence. The range of one to three and half cycles were found necessary for acquiring the desirable mastery level. Two microteaching cycles were sufficient for 82 % cases for acquiring the accepted mastory level.

2.2.5 Validation of Instructional Material

For developing skill competency through microteaching, instructional material packages are produced and tried. The materials

are both to be used by supervisors, and student teachers type.

Passi, B.K.(1976) conducted a study to validate instructional material with the preparation of the first draft, preliminary tryout and main field testing. These were the methodological steps adopted for the purpose. The experimental groups had an instructional material and skill based feedback for presenting the skills namely (i) introducing lesson (ii) achieving closure (iii) fluency in questioning and (iv) reinforce. Finally the experimental group exhibited better performance than the control group in the four areas mentioned above.

Joshi (1977) conducted a study on similar lines for skills (i) stimulus variation (ii) skill of illustrating with examples (iii) skill of silence and non-verbal cues and (iv) skill of recognising attending behaviour and found instructional material synchronised with microteaching approach as effective.

Paintal (1981) studied the effectiveness of microteaching programme on six groups through workshops, seminars and vacation courses. This study significantly differs from usual micro-teaching programme adopted in colleges with reference to practice time, teach and reteach and performance evaluation. The study concludes with instructional materials produced by Joshi (1976), Passi (1976), Lalitha (1976) contributing significantly to the programme.

2.2.6 Validation of Skills

The skills to be practised for teaching should contribute to the general teaching effectiveness. To what an extent the set of skills formulated contribute in forming teaching complex requires emperical validation.

Rama Mathew (1978) studied the factorial structure of teaching competencies among secondary school teachers. The sample for study comprised 23 teachers for pilot and 130 teachers for final study. The standard progressive matrice A to E, Teacher Attitude Scale, Teacher Self Rating Scale, Observation Schedule and Student Liking Scale, and the Interview Schedule were the tool used to collect the data. The analysis was carried out by adopting the principle component factof analysis method. The study has resulted in fourteen factors which accumulated 68.30% of total variance. They are general teaching competency 16.75%, Concern for students 12.05%, Using A.V. aids 11.03%, Professional perception 8.68%, giving assignment 8.43%, Illustrating with example 8.05%, pausing while introducing 5.46%, logical explanation 5.12%, class room management 4.27%, Blackboard work 3.43%, Attending behaviour 3.43% and Achieving closure 3.06%.

2.2.7 Microteaching Programme Validation Against Conventional Practice Teaching, Using General Teaching Competency Scale as Criterion Tool

Earlier studies concentrated on this aspect to emphasize -

can microteaching effectively replace the earlier part of traditional practice teaching wherein a student teacher is directly sent to schools for practice ? The general Competency Scale is a rating on 21 teaching skill. The rating will be by supervisors observation during classroom teaching.

Jangira (1980) studied effectiveness of microteaching programme for improving the general teaching competency of inservice teacher and found it significantly differing the scores from pretest to post test.

Kallenbach and Gall (1969) found that the use of microteaching in pre-service teacher training programme did not result in significant higher ratings of teacher than conventional means.

Allen (1969) reports during first year at Stanford students trained with microteaching required 10 hours of instruction per week to reach a certain level of competence, whereas conventional practices needed 25 hours per week - to reach the same standard competence.

N.S.Marker (1972) studied effectiveness of microteaching against conventional practice teaching with 5 skill viz. questioning, response of pupils, and reinforcement, set induction, stimulus variation and skill of closure. The study used video tape for feedback. Thus, microteaching was found effective against conventional method.

Bell (1970) did a study in home-economics education at Texas Technical University to determine the effect of training upon specific skills with a sample of 22 student teachers. The skills were, establishing set, reinforcement, questioning, achieving closure, framing references. The programme was found relatively more effective in teacher preparation than the usual form of training.

Jangira et al. (1981) studied the effect of training in teaching skills through microteaching on skill competency and general teaching competency of inservice science teachers and pupil perceptions of teaching. It is observed that the means of teacher scores on the competence to use the skills of probing questioning, reinforcement, stimulus variation, illustrating with example, and increasing pupil participation as well as gain in teachers scores on general teaching competency before and after training in teaching skill using microteaching differ significantly at 0.01 level.

A large number of studies have been conducted with parallel group design with the Indian Microteaching Model to validate the development of skill competence measured by general teaching competency. The studies predominantly show significant difference between microteaching and traditional practice teaching favouring

the Indian Microteaching Model (Joshi 1976; Passi 1976, Lalitha 1976, Singh 1973; Das et al.1979a, Don et al.1979b Malhotra ,1979, Jangira 1981).

Britton and Leith (1971) studied relative effectiveness of microteaching with the traditional method. Feedback was provided - by 56 first year students selected as the sample. Evaluation was carried out by video tape during the next term when teacher trainees were engaged in realistic teaching. Evaluation was a product of a supervisors impression and the school staff. Tutors used rating instrument describing categories of teaching. Both sets of rating showed that students who practised in microteaching achieved higher mean scores than those without such experiences.

Ward (1970) conducted a survey of microteaching courses being used at the secondafy education in U.S.A. According to him microteaching helps in developing teaching competency of both student and teaching staff. Their attitude towards education was found to have improved considerably.

Schuck (1971) reviewed pre-service microteaching programme in a number of American institutes. Some reported that micro-teaching inspires teaching competence more than the conventional training method. Others reported microteaching and conventional methods result in equal competence.

Harris et al. (1970) indicated the value of microteaching is more in producing significant changes in prospective science teachers. The microteaching group developed better in terms of

skills and overall ability than the usual practice teaching ones.

Ginburg (1973) concluded that elementary science teachers trained in questioning skills and self evaluation of their own tapes, asked fewer basic and more probing type questions when compared with the control group.

Macallo (1973) also worked with science teachers and concluded that the microteaching group did better than the traditional group.

Legge and Asper (1962) found that microteaching group performed better than control group in evaluating the aims, planning and presentation of a 45 minutes videotape teaching sequence.

2.2.8 Microteaching Programme Validation Against Conventional Practice Teaching Through Different Dimensions of Teaching Effectiveness other than GTC

A few studies have been carried out, where the results are presented in terms of different characters of effective teaching.

Legg and Asper (1962) found that microteaching can improve significantly the aspect of teacher-pupil relationship.

Peck and Tucker (1971) found that the microteaching group did significantly better with regard to determining readiness, involving pupils and evaluating pupil responses, it made greater

use of pupil ideas, used more questioning and evaluated more pupil responses and initiation than the control group.

Davis and Smart (1970) studied the relative effectiveness of microteaching with conventional practice with 140 secondary teacher trainees. It is found that the microteaching group differed significantly with high scores as compared to the traditional group. The microteaching group asked more divergent questions and probing questions. Besides their pupils interacted, responded and were more supportive than the non microteaching group.

Harris et al. (1970) found that the microteaching group did better in skills and overall ability to provide background information, by responding effectively to peers and letting students develop their own conclusion than a control group who taught a large group only once.

Nagel (1970) concluded that microteaching was effective to prepare supervisors for group participation and observational methods which took less time.

Anderson and Aules (1972) found microteaching method to be effective for preparing teachers of 'culturally diverse children' and that those trained in the microteaching technique had more positive reactions to the experiences than those in the former treatment.

Levis et al. (1973) reveals that in the acquisition of questioning skills the microteaching group performed better in the

use of probing questioning and higher order questioning. Skill of fluency had no difference.

Thew (1972) found that microteaching helped in developing more complex learner centred and learner supportive skills of teaching. Marked success is found in developing essential dimensional skills of interaction between teacher and pupil. They include (i) flexibility of teaching roles (ii) organisational skills for the structuring and varying of lesson strength (iii) Interpersonal social interactive skills which assist class members to become a functional social group.

2.2.9 Microteaching Programme Validation against Practice Teaching Programmes other than Conventional Practice Teaching

The effectiveness of microteaching against conventional practice teaching has been validated with a very high degree of confidence with repeated studies at different parts of the world with a variety of student-teachers and education courses. A few studies have also been conducted to validate microteaching against other developing practice teac_hing approach.

Singh, L.P. (1973) studied the relative effectiveness of three practice teaching approaches viz. micro teaching, Flanders interactions category system (FIACS) and conventional practice teaching. Both FIACS and microteaching changed significantly better as compared to the conventional and microteaching which changed significantly when further compared to training through FIACS,

2.2.10 Microteaching Programme Validation with Tools other than General Teaching Competency Rating Scale

A few studies are conducted to validate using tools other than those of the general competency rating scale which are basically rating scales, rated by the supervisor in course of observing one or two lessons after the microteaching programme. The validation with other tools of measuring teaching effectiveness will support the results obtained through rating scale.

Bhattacharya (1974) studied the effectiveness of micro-teaching programme with FIACS tool. The control group had a conventional practice teaching approach and experimental group had microteaching approach. It was found that the microteaching technique would be more suitable to develop teaching skill indirectness than the conventional practice.

Paintal (1981) studied the effectiveness of microteaching programme on six groups through workshops, seminars and training camps. The study concludes that a majority of the teachers trained for skill of probing questioning were reported to have observed a significant better level of pupil participation in normal classes.

Dosajh (1975) tried to study the change of teaching self concept through microteaching. Evaluation was done by CCTV and compared with the supervisors evaluation. It was found that

there; was a significant change in teaching the self concept and was found to be in close relation with the supervisor.

Jangira (1980) studied the effect of the Indian Micro-teaching Model for training inservice science teachers. One of the criterion tool used was pupil perception. Ten out of fifteen items showed a significant change towards favourable direction at 0.01 level.

Goldman (1969) found that microteaching developed a better regard for themselves and became more critical of teaching cliches and other educational concepts.

Gordan Macleod et al. (1967) in his study tried to correlate the specific performance measure as microteaching with those of global ratings of teaching performance carried out eight months later and interrelate these specific performance measures to determine whether emperical support could be provided for the concept of skill.

The microteaching performance data of this study were derived from subjects performance on an eighteen minutes criterion lesson carried out at the end of the semester programme of microteaching in which students were introduced to various microteaching skills viz. variation, explanation and questioning. The subjects were asked to attempt practice in all three skills and systematic coding of performance was carried out by three observers. In the preceeding semester course students attended the individual tutorial with one of the three experimentors in

which the video tape of criterion lesson was viewed, and feedback was provided. Besides, students also undertook university based practice teaching with fourth grade non-certificate pupils. At the end of second semester, approximately 8 months after teaching their criterion lesson, students embarked on their secondary teaching practice. For this practice grades were assigned both by university supervisors and supervisory teachers,

To determine more clearly the relationship between micro-teaching performance and university supervisors grades a multiple step wise regression analysis was carried out in which eight significant single correlation of grades were included as independent variables. Some of the findings obtained in the study are as follows :

(1) Lesson marked by variation, by avoidance of under-explanation, but by a high frequency of any level of questions received high grade,

(2) Three of the skill components account for over 50% of the variance in grades, whilst the other five components add little to the variance accounted for.

(3) The relationship between single skill components and pre-defined sets of skill components was analysed by factorial analysis relating to five factors viz.

(i) frequency of questioning follow up, lower order, non-followup questions (0.52, 0.84 and 0.99)

(ii) Variation with use of audio visual aid (0.44)

(iii) Clarity of explanation with its four components out of six,

(iv) Three negative components out of four components on explanation, and

(v) Higher order questions, follow up questions and verbal pupil participation

2.2.111 Validation of Microteaching Programme against Conventional Practice Teaching with Reference to Attitudinal Change Towards Microteaching and Towards Teaching in General

A large number of studies had used attitude scales viz. teacher trainees attitude toward microteaching approach and towards classroom teaching. The studies predominantly favour that student teachers have a highly favourable attitude for practice through microteaching approach and can also develop a positive attitude towards classroom teaching. The studies supporting the refered conclusion are as follows :

Joshi 1977; Singh 1973; Pangotra 1973, Vaze 1975; Passi, 1976, Don et al. 1976a, Don et al 1976b, Dosajha 1978, Jangira et al.1980; Dugas 1967; Perrott and Duthie 1970; Levis et al. 1973; Bloom 1969; Gibs 1973; Woods 1970; Keafney 1970; Hughes 1969; Kohn 1970; and Waldrop 1970.

2.3.0 Review of Literature on 'Integration of Teaching Skills' as a Concept

In this section it is intended to review various view points and conceptualisation given by different investigators for the integration of skills. The concept 'integration' being of recent origin for microteaching field, diverse meanings are

attributed. The review presented here are not necessarily tried out with empericsm, but are to be taken as hypothetical constructs for emperical validation in order to arrive at a refined conceptual structure for integration.

Griffith (1972) perceives integration as an arrangement of learning experiences to bridge the deliberately structured difference between micro and school teaching situations so as to encourage transfer of acquired skills. Griffith proposes the summative model of integration as post microteaching phase.

Hargie et al (1979) Ulster College presents miniteaching as an extension of microteaching. The introduction of miniteaching approaches offers an opportunity to students, to bridge the gap between microteaching and macroteaching. The author however, does not explain the conceptual details, but provides an operational procedure with certain salient features as follows :

(i) The reteach phase has been replaced by integration inputs at certain stages throughout the programme. By this the student teacher is encouraged to regard these skills as interactive components rather than completing discreate.

(ii) The teach-lessons have been gradually increased by five minutes to thirty minutes, the progress again emphasis on the building up of skills training to approximate real situation.

(iii) The number of students gradually increased from five to twentyfive. To began with the micro elements are emphasized but this has systematically decreased. In the final lesson the student teacher will teach a whole lesson to a full class of pupils in the college environment. This occurs not in the microteaching clinic but in the class room, workshop, gymnasium or laboratory depending upon the teaching course involved. The lesson is further video taped and the student teacher given both video and tutorial feedback.

(iv) When student teachers are diagnosed as having difficulty using certain teaching skills they are included in the centre specifically on the basis of their weaknesses with an attempt to improve their use of the selected teaching skills.

'The miniteaching format also has an advantage i.e. it is more acceptable to the educationist who does not have a behaviourist outlook. It is by circumvent that many controversial issues, which have been raised by the oponents of microteaching.' (Spelmen and St. Jhon Brook (1973). Teaching skills are regarded as techniques which the teacher can choose and further utilise as and when he deems fit. On the whole the teacher by himself is still a decision maker.

E.J.Donald (1976) hypothesizes that it is a pattern of practices rather than single teaching skill practice, which account for effectiveness. Development of such patterns and use whenever required necessitates the development of ability in the teacher to integrate these skills. A search for pattern formation is the next task, that a student teacher has after he develops teaching skills.

Joshi and Kumar (1983) describe integration as follow. Integration is developing the ability of decision making. This decision making does not mean cumulation of teaching skills. In a particular teaching situation it refers to the use of a set of teaching skills with a specific proportion of each skill in a particular sequence. If such a decision making ability has to be appropriate with respect to maximisation of achievement of instructional objectives set by the teacher, the decisions are to be made, about the set of skills, proportion and their sequencing. A teacher before entering the class room has a reportoire of teaching skills, objectives of teaching the lesson and his perceptions about the class room situation with regard to learners, their characters background, their interests, the physical set up of the class room etc. Based on this analysis of teaching-learning situation he makes a selection of skills from his reportiore that could be appropriately used in the situation. Further, he takes decisions regarding the sequence and proportion of teaching skills to be used. During the teaching-learning process he matches his performance with his earlier perceptions and decisions. Then he interprets and diagnosis the reasons for the type of matching that has occured and modifies his decisions regarding the use of teaching skills and also the objectives of the lesson. The occurance of teaching skill takes place in quick succession. This process also continues in the classroom teaching-learning situation.

Considering the nature of decision making ability it would require the provision of various opportunities wherein the trainees have to take decisions regarding the suitability of the use of various skills. When trainees are able to solve such problems frequently and take decision repeatedly by critically examining the correctness of their judgement in the light of feedback from their supervisor. They will then on their own develop the ability of decision making.

Das et al (1982) presents a series of models for integration specifically formed for the Indian Model of Microteaching. These models were presented in a National level seminar held at Indore for refining and tryout for arriving at emperical evidences. Before presenting the models a brief out line of the integration process is presented in succeeding pages.

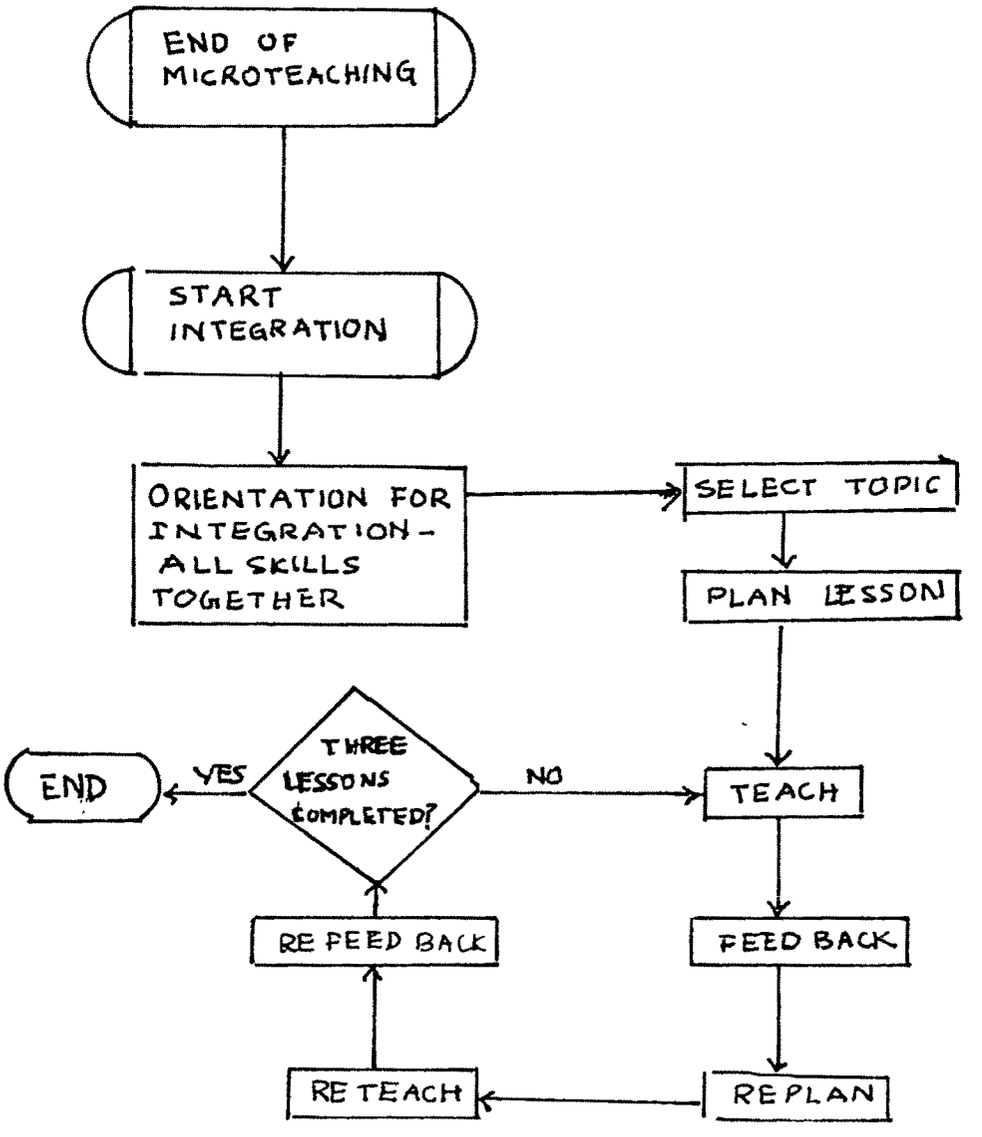
Teaching requires an ability of the teacher to (a) percieve the given teaching situation. (b) examine the reportiere of the component teaching skills with him. (c) select and organise them into sequential patterns of component skills so as to realise the instructional objectives (d) use the component of teaching skills in the desired sequential patterns with ease and fluency. The integration of the component skills in this context refers to a process by which a teacher acquires the ability to select and organise teaching skills in the desired sequence. These sequences can form effective patterns for realising the specified instructional objectives further and can be used with ease and fluency.

For a student teacher, the shift from single skill training through microteaching to the real teaching situation is an abrupt one. In order to smoothen this abrupt shift, this gap has to be bridged smoothly. It can be done efficiently through training in graded integration exercises based successively on an increased number of the component skill till the component skills culminate into actual teaching. Practice in individual component skill using microteaching technique prepares the student teacher for teaching while integration exercises smoothen the transistion from a simple laboratory training situation to the complex teaching situation in natural setting. This implies that the integfation stage is located somewhere between the microteaching and the actual teaching situation. The organisation of training in an integration of a particular skill appear to be a difficult task. This is due to the highly specific teaching decisions that a student teacher is required to take in particular teaching situation. But despite the serious limitation, this integration exercise appears to be indispensable so as to help the student teacher by way of (a) smoothening the transfer from the laboratory training situation to an actual teaching situation, and (b) providing practice in making decisions regarding the synthesis of the component skills in selected teaching situations. Further Das et al presents four models fiz. (a) Vicarious integration (b) summative integration (c) additive integration strategy and (d) diode integration strategy.

(a) Vicarious Integration : This is also refered as 'no integration strategy' or 'spontaneous integration'. Here the student teacher proceeds directly from a microteaching setting to a real teaching setting. Besides, he is not provided specific interventional training in the integration of skills. He attains the ability to integrate the teaching skill in a real class room setting.

(b) Summative Stratagey : In this stratagey training is provided to student teacher to integrate the individually mastered skill in microteaching setting by adding all the instructional skills, at one time. The time duration of this training exercises is however, increased depending upon the number of teaching skills to be integrated. For instance, if student teachers have mastered five teaching skills individually viz. S_1, S_2, S_3, S_4, and S_5 the training is provided to integrate these five skills in controlled setting. In this training exercise time duration of the lesson is increased from five minutes to 15 or 20 minutes. Since time duration is increased, the length of the lesson is increased accordingly. This lesson is further observed to provide suitable feedback. This training exercise continues till the student teacher acquires a reasonable level of mastery over the integration of the said number of skills. After mastery in the integration of these skills is attained the teacher trainee is asked to practice in a real classroom setting. A diagramatic representation is presented in Figure 2.2.

FIG:2.2 SUMMATIVE MODEL OF INTEGRATION



In this pattern any criterion can be fixed to suit the affiliative character of instructional skills, if maintained, it can be of great help for the teacher trainee. Besides, there is economy of time in the summative pattern as compared with other patterns.

(c) Additive Strategy : This strategy is different from the summative strategy. In this strategy, training is provided to a student teacher to integrate the first two mastered skills before he proceeds further to muster another skill. For instance, when a student teacher has mastered two teaching skills - reinforcement and probing questioning (S_1 and S_2), he is provided further training to integrate these skills before he under goes practice to master the third skill i.e. the skill of stimulus variation. This training exercise continues till he acquires a reasonable level of mastery over the integration of these two skills (S_1 and S_2). There after he practices to master another skill i.e. the skill of stimulus variation. After mastering this skill, he undergoes further practice for the effective integration of three skills namely the skill of reinforcement, skill of probing questioning and the skill of stimulus variation. After attaining mastery over the integration of these skills, he proceeds further to master another skill i.e. the skill of illustrating with examples. He then undergoes practice for acquiring the ability to integrate the four skills. This process continues till he is effectively able to integrate the desired number of skills. In this strategy the time duration

FIG:2.3 ADDITIVE MODEL OF INTEGRATION

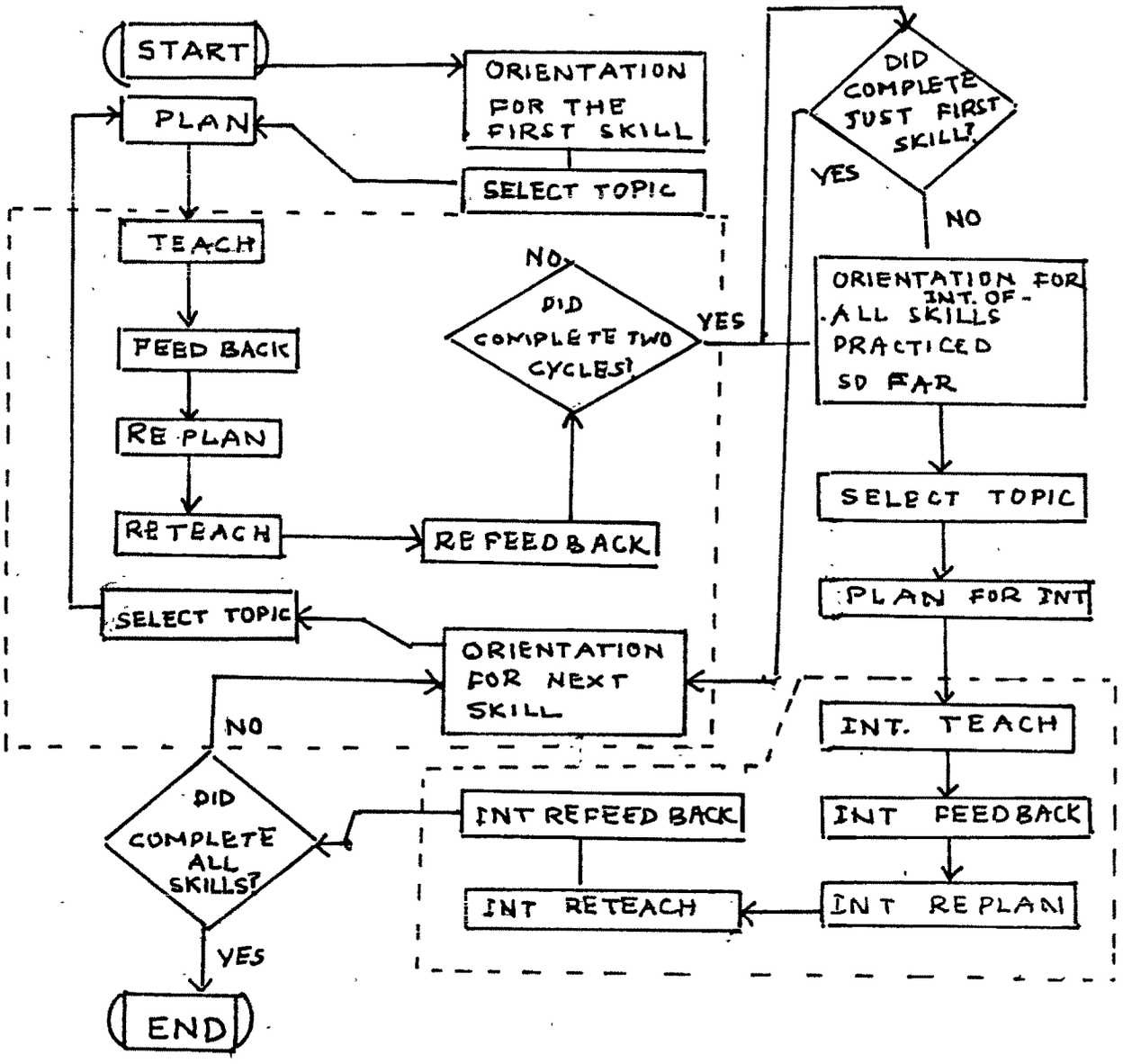
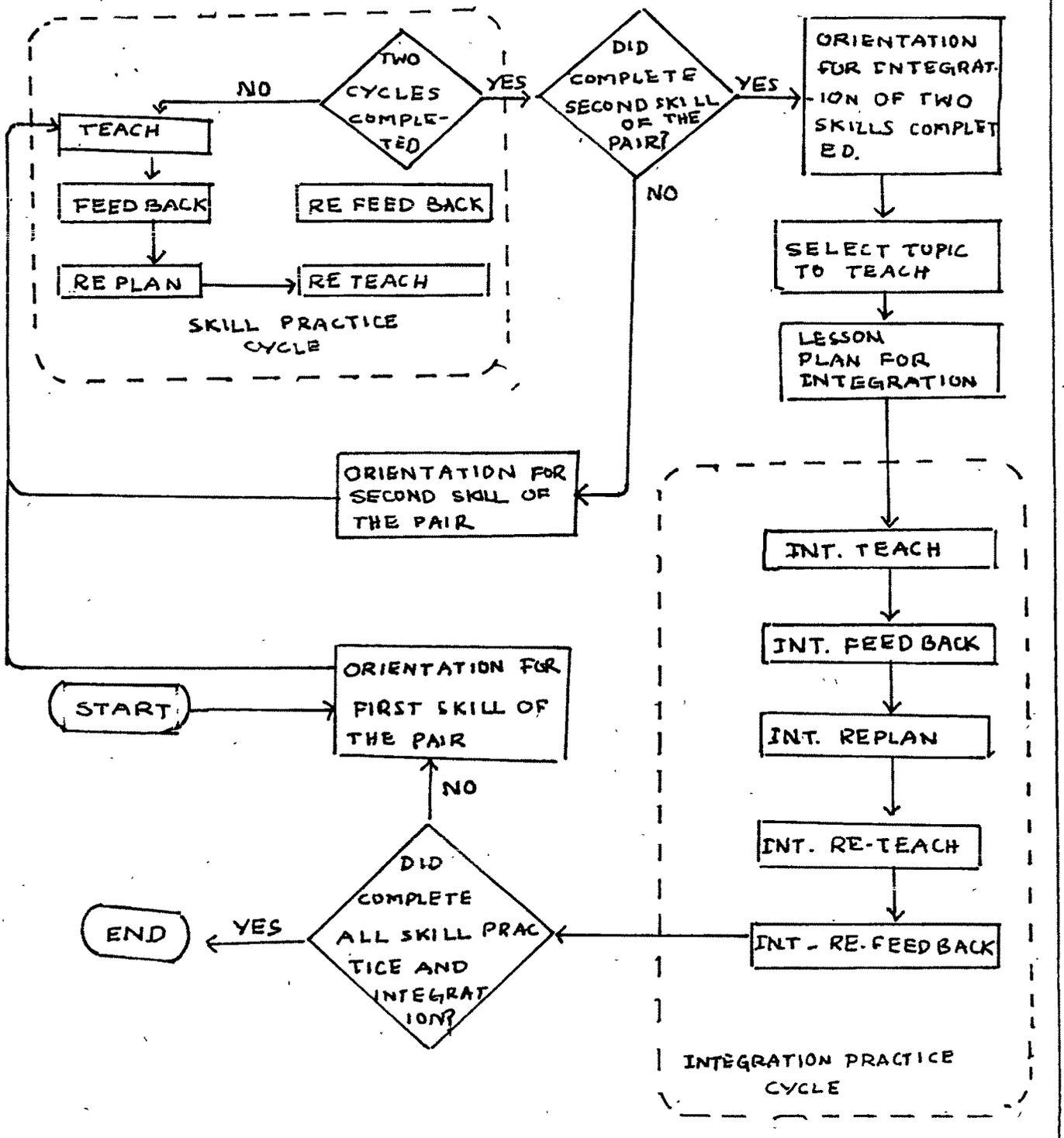


FIG:2.4 DIODE MODEL OF INTEGRATION



and the length of a lesson is gradually increased as the student teacher increases the number of skills to be integrated. A diagramatic representation of the above mentioned procedure is presented in Figure 2.3.

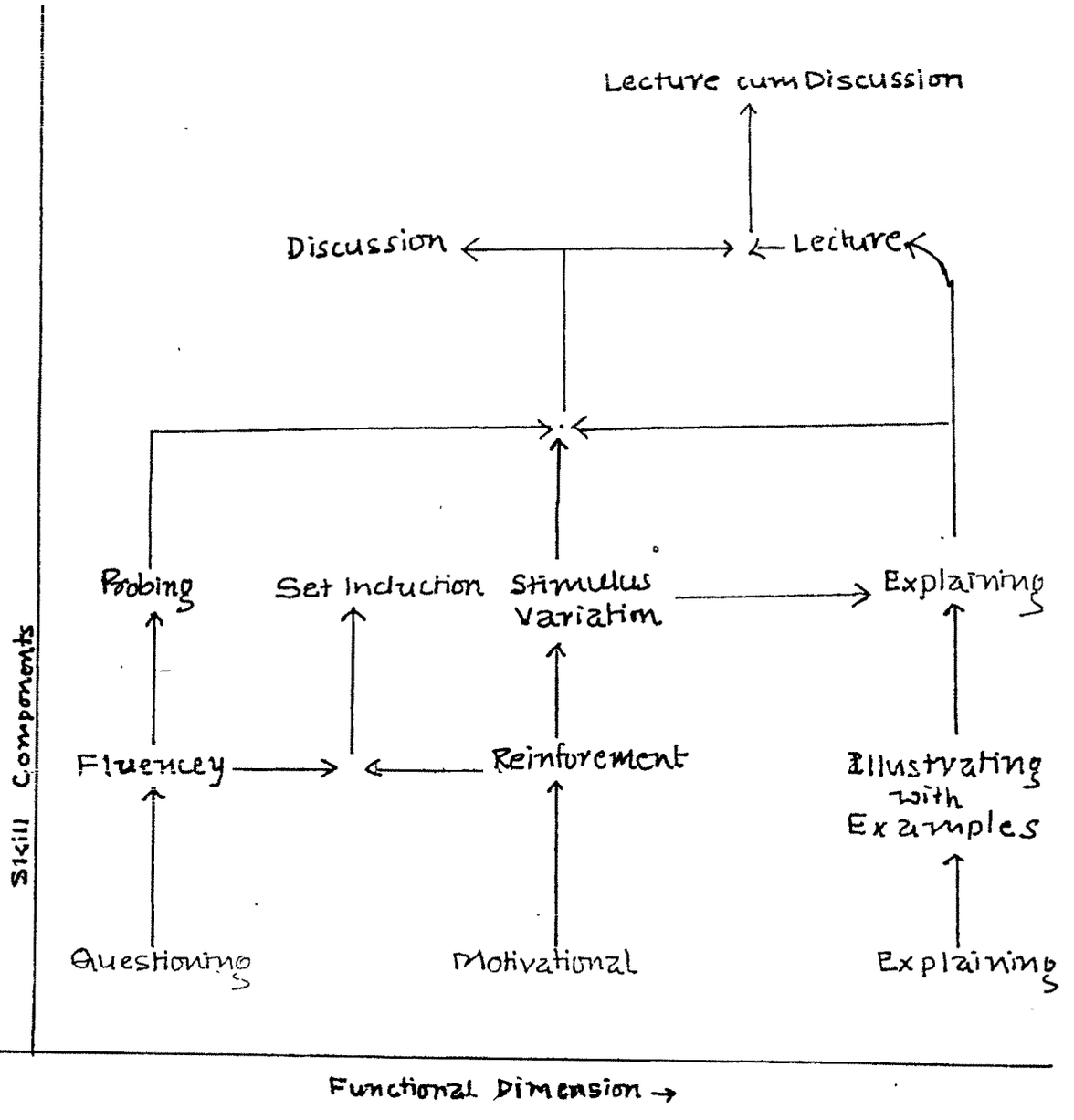
(d) Diode Strategy : In this strategy skills are integrated in pairs. After integrating the desired number of skills in pairs, all these skills are integrated. This strategy falls between the summative and additive strategies. While adopting the strategy of integrating skills in pairs, the time duration of lesson is also increased. This process continues, till finally all the desired number of,skills are mastered in pairs and integrated. After mastering the skills in controlled setting student teachers are asked to undergo practice teaching in real classroom setting. The diagramatic representation is shown in Figure 2.4.

(e) Subsumption Strategy : This stratagey is based on Gagne's heirarchial analysis of the learning task. It represents a vertical dimension of integrating teaching skills. In this stratagey, the presumption is that teaching is complex, and can be analysed into its simpler component skills. The component skills to be taken up in a particular class are arranged in the heirarchial order according to the levels of their complexity. This stratagey can be operationalised with an example from the area of classroom questioning skills.

The skill - subcomponents namely grammatical correctness, relevance and consciseness are the components of the skill of structuring questions. The next stage i.e., the use of these three skill sub-components will continue in structuring questions at this stage. Besides, the addition of voice and speed component will develop the component of the skill of fluency in questioning. The addition of the skill sub-components i.e. prompting, seeking further information, refocusing, redirection and increasing critical awareness will develop the skill of probing questions. The increasing levels of questions to be asked can also form one of the stages. Here each simple level gets subsumed into a subsequently more complex skill. Similarly, hierarchies can be established in respect of motivational and explainatory skills. The time duration of a microlesson and its length will increase progressively as the student teachers move towards to attempt practising more complex skills.

Subsumption - Additive Stratagey : This stratagey is eclectic in approach and accounts for the complex nature of teaching skills and their integration. In contrast to linear integration, the complexity of integrating a component skill has been represented in a diagramatic form shown in Figure 2.5. The basic presumption underlying the stratagey are illustrated in a brief description through diagramatic presentation.

FIG: 2.5 SEQUENCING OF SKILL COMPONENTS IN SUBSUMPTION ADDITION INTEGRATION MODEL



(i) Teaching is a complex skill which can be further analysed into simpler skill components for a particular learning task. Further these tasks can be arranged in a heirarchial order according to their levels of complexity which can be integrated as subsumption in dimension.

(ii) A skill can be grouped on the basis of functional areas like motivational, management, interactive, explaining so on. The shift from one area to another is the additive dimension.

(iii) The process of integration is not linear, but two dimensional which form a complex process of subsumption - addition.

Questioning (Q), motivational (M) and Explaining (E) fall on the functional area on horizontal dimension, while component skills fall on the vertical dimension. Fluency in questioning (FQ) integrates horizontally with reinforcement (Re) to develop the integrated component skills of set induction (SI), illustrating with example (IWE) and stimulus variation (SV) integrate into the explaining (Expl) skill. The explaining skill, probing questioning, stimulus variation and reinforcement integrate to form the discussion skill (D). The explaining skill through vertical integration forms the skill to lecture (L). The process of this type can further be refined through more exercise. The length of training lessons and the concept to be used will increase progressively as the process moves towards complex skills.

Passi, B.K. and Sharma, K.K. (1979) present a rationale and procedure for integration. According to them integration is a sequential step in between microteaching and real teaching. The rationale behind this step is a synthetic - analytic - synthetic scheme of teaching in the context of learning to teach, first, teaching in conceived as an organised whole. Then it is analysed into different component skills. Again component skills are integrated and synthesized to be viewed as an orchestreal unit. In order to give a discriminating and synthetic picture of teaching to a teacher trainee it is important to take him through these steps of analysis and synthesis. Integration requires an ability of taking decisions regarding a set of skills, their proportion and sequence. The author points out the following as lacuncy which teachers can persist after microteacher training programme.

(i) He may develop a dual teaching pattern exclusive to each one, one for microteaching situation for practice of component skills and the second for macro situation for teaching purposes only.

(ii) He may lack transfer of training in allied, related or similar situations.

(iii) Training stratagey and teaching stratagey introduced will not have any relevance with each other.

(iv) He will fail to appreciate the synthetic meaning given to instruction as an analytic-synthesis activity, and

(v) He may fail to develop certain instructional behaviours which otherwise would have contributed for developing behaviours suited for a real professional teaching carrear.

The author therefore presents teacher training through an analytical model as a three stage process viz. (i) perceiving the whole (synthesis) (ii) perceiving the parts (analysis) and (iii) perceiving the relationship between parts in a whole (synthesis). On the basis of this a five stage integration process has been designed. The first stage deals with perception of instructional process in class room by the teacher trainee wherein a student teacher observes the process of instruction presented before him. This matching helps to descriminate, initiate, identify and assimilate certain instructional behaviour at a conceptual level. The second stage deals with an analysis of instructional process in to smaller bits or elements formed as behaviours. The third stage deals with the practice of individual instructional skills in microteaching through simulation or in real situation. The fourth stage deals with the integration of components of instructional skills into a significant, meaningful and functional whole. At this stage he learns how to integrate the instructional skills so that they may be instrumental in achieving certain behaviours in relation to other behaviours practised under different component skills during the second stage of the model. In addition to this he starts looking at the achievement of instructional goals through integration. The fifth

stage in this model refers to the practice of instructional skills in real life like situations. The teacher trainee then learns to teach all the skills in real teaching contexts with pre-concieved instructional ends.

In the context of microteaching approach the integration strategy has to be unique on account of certain other variables involved and different ends to be achieved. The determining factors for this are listed below are as follows :

(i) appropriateness of the use of skills

(ii) adaptability to the varied situations and corresponding demands upon new skills

(iii) sequencing of skills while keeping proportion to the optimum level

(iv) composure and ease on the part of the teacher trainee with regard to practice

(v) discriminating closely to take effective decisions, and

(vi) Giving value judgement to different aspects involved in the process.

There are some factors which control and determine the quality of integration. They are :

(i) selected component skills and their impact on functional dimensions like motivation, control, organisation etc.

(ii) personality dispositions

(iii) sex

(iv) content

(v) situation

(vi) materialistic facility for teaching

(vii) The nature of objectives set
(viii) Sequence of skill
(ix) proportion of skills
(x) time given for practice in integration for different skills
(xi) class level for which the teacher is to be prepared
(xii) nature of evaluation tools and feedback.

Considering the process of integration discussed and related factors a few techniques are suggested for use in a laboratory situation as given below :

(1) Case Study : Any lesson (not necessarily good) either video taped or transcribed can be presented as case study to the trainee. Let him alone or with other teacher trainees, supervise, analyse and say how to maximise the achievement of the objectives set while using various instructional skills. Let him note down his observations and suggestions which can be discussed in a group if necessary.

(2) Self Analysis : Let the teacher trainee study his own audio taped or video taped lesson in terms of the appropriateness of the set of integrational skills being used. He can modify and reteach the same lesson to the point of satisfaction.

(3) In Tray Technique : The procedure begins by presenting the teacher trainee with a box containing either slips or slides having sufficient details about various teaching situations. Let the teacher trainee take decisions as to what instructional skills

he would use in those situations. Decisions can be noted on a specially prepared proforma. This can be followed by a group-discussion with other teacher trainees along with the supervisor, who have also analysed the same situation separately. This would give an insight into the appropriateness and the use of instructional skills in various teaching situations.

(4) Let the teacher - trainee teach the same lesson in a variety of widely distinct situations having variation in one or more aspects like type of school, grade, class size, subject to be taught, students of differential abilities and socio-economic background against the rest remaining unchanged.

(5) Descrimination - Integration Training in Real Situation :

Let the teacher trainee teach in real varied situation whose main parameters he is aware of. Let the lesson be recorded on audio tape/video tape or the impression may be recorded on paper (evaluation proforma) by the peer/college supervisor so that the teacher trainee can review for descrimination and integration purposes. This situation can also be solved to some extent by having multiple observations. It involves a number of peers, supervisors, each observing a particular instructional skill for its appropriate use in the given situation. Self feedback got both during and after the lesson and also feedback got from external observers would sharpen his descriminative and integrative ability in the appropriate use of the instructional skills.

Tansey and Unwin (1969) have suggested a sociodrama technique for teacher training. Cruickshank (1968) has developed a teacher training system which can present the teacher trainee with thirty one different simulated problems related to teaching. The purpose of his 'Teaching Problem Laboratory' is for the participant to identify the problem and factors influencing it, locate the relevant information, suggest an appropriate alternative course of action, communicate and compliment a decision.

Malhotra and Sharma (1979) suggests an integration stratagey to be modelled depending on the use of skills in the real classroom. This depends upon the nature of skills themselves to be integrated. The stratagey has to be specific with reference to the set of skills to be integrated. The authors suggest three types of basic forms as mentioned below

(1) Assimilated - Integrated Skills : This includes such type of integration wherein one skill comes automatically with other. If such type of integration is broken the very idea of skill itself goes off, for instance, the skill of questioning is very much integrated with the skill of pausing. After questioning, there will be definite duration depending upon the nature of question high order, middle order and low order.

(2) Invariable Integration : Some skills get integrated in class room invariably depending on the teacher. This type has been further classified into three different types. Type (i) the

integration when two skills are used at a time, for instance, questioning may be followed by reinforcement. Type(II) the integration where three skills are integrated at a time for instance skill of explaining follows skill of stimulus variation which may further follow skill of blackboard work. Type (iii) Such integration of skills where more than three skills are integrated at a time, for instance, questioning may be followed by probing questioning which may further be followed by explanation and class room management. Such skills automatically get integrated in the behaviour of the teacher without entering into new activity or effect. Assuming a teacher is making effective use of questioning then probing, reinforcement then class room management will automatically persue his behaviour. Then there will be no need of using the skill of class room management seperately.

(3) Non-integrated Skills : Such skills which rarely can be integrated in the class room, for instance, at the time of giving home assignment, the teacher will not be expected to make use of questioning or illustrating. Thus the skill of giving home - assignment will not integrate with skill of questioning and skill of illustration with example.

Yadav and Roy (1977) suggest a few techniques and considerations derived through the experiences gained form the application of microteaching programme in teacher education stated as follows.

Granting that the various steps generally followed in microteaching technique are suitable for the development of instructional skills, one more initial step would perhaps make the process of skill development more effective. This suggested step is to make the trainee observe lessons in real class rooms and identify for himself various instructional behaviours of the teacher. After going through these observation sessions the trainee may arrive at different skills as related sets of teaching behaviour with the help of discussion. The need for including this step lies in the fact that a majority of trainees are freshers without any teaching experiences. Even if there are experienced teachers under training this would help them in seeing through their teaching behaviours, and further analyse these experiences into meaningful skills of teachings. The net results of this initial step in the microteaching technique would be that, it would create readiness on the part of a trainee to undergo the process of skill development with a clearer understanding.

In order to enable the trainee to see the relevance of a particular teaching behaviour observations should be made systematically. Besides making observations the trainees should be oriented in how to observe classroom situations for e.g. they may follow a few very general points for the purpose. Further they should not be burdened with any rigid schedule of observation at this stage since the basic purpose of this activity is to make the trainee aware of the fact that

teaching behaviours can be observed and analysed in terms of any related set of behaviours. As already mentioned, the trainee will also discuss instrumental skills with the trainee will also discuss instrumental skills with their components. This will lead to succeeding steps of microteaching technique to be followed smoothly.

The author further comments on the following aspects regarding post-microteaching process of integration.

In any instructional situation there would be several contingencies that would arise and they would seen peculiar in dealing with a situation effectively or may otherwise even be overlooked. The teacher would, thus be called upon to vary his response every now and then, and thereby, decide what skills to use and in what combination. Since there would be innumerable types of teaching situations the teacher will have to face, it will be very difficult to envisage a training programme for the development all the aspect. However, in a teaching - learning situation the learners behaviour is modified through interaction. In fact, the whole process is such that it brings into play cognitive and emotional aspects of behaviours of participants, i.e. teacher and pupils. In order to maintain the dynamic nature of the teaching - learning situation, it may not be desirable even to attempt that any two teachers develop a uniform teaching behaviour even when two identicle contents are to be presented.

What can therefore be attempted through a training programme is to make the trainee undergo certain experiences in teaching situations wherein he can see for himself it becoming more appropriate to use certain skills in a certain combination in a given instructional situation, and thereby develop the ability to change his response as and when the situation demands. This would mean that the trainee would develop the ability to descriminate between various teaching situations, and decide which combination of skills to utilise for response in a given situation. When a trainee has reached this stage of decision making in the process of development of teaching ability, one can say that he has been able not merely to apply a particular skill but also to make an on the spot decision as to what set of skills should be put to application while responding to a teaching-learning situation. It is this aspect of teaching ability that has made it challenging and tremendously difficult to bring it into the fold of any training programme. At the same time it is this quality of teaching that imparts dynamism and creativity to it. Naturally, therefore, no student teaching programme would be considered adequate and effective unless it attains success in developing this ability in trainees at least upto an average working level.

The authors suggest a few activities to be undertaken for developing decision making ability as follow.

(a) In each subject there are topics which will call into play certain combination of skills to a large extent. If a trainee

makes a selection of a number of such topics that distinctly differ from each other, then decides a tentative set of skills to be utilised for teaching there, and then also teaches these topics in actual class he will clearly see the need and scope of co-ordinated display of various skills. Thus, practising teaching in an actual class room will be to see the adequacy and appropriateness of different skills and their combinations with respect to content and the instructional objectives, which will be one of the processes of integrating instructional skill.

(b) Practising teaching similar content to students of various background and other personal characteristics will bring home to the trainees the need for varying their behaviour in response to demands of the teaching learning situation. For example, a trainee may be made to teach similar topics to both, children from rural and urban schools, children of same grade from two very different types of schools within a city and children from different grades in the same school. A few lessons of this type could help trainees realise the need for change in teaching behaviour in actual instruction, and thereby sharpen his descrimination ability with regard to the selection and utilization of various skills.

(c) Practising teaching for the whole period but with small groups, say 15, 25, 35 or above 35 will help the process of integrating of skills. As the trainee would be teaching for the full period, he might get the facility to exercise his ability

to use different skills with a small group better in an integrated way, and adjust to teaching situations and thereby develop his own teaching style.

(d) In sets of activities proposed under a, b, and c it has been argued over how the process of integration is effected by differences in training situations arising out of difference in content, instructional objectives, environmental background of students, availability of resources and class size. After gaining experiences from microlessons in real settings he may be able to teach for a full class hours duration in actual classroom situations over a considerable length of time. During these lessons, the trainee will get practice to sufficiently combine skills and see the need for flexibility to be displayed under different teaching situations. Through this practice the trainee would ultimately find a way to evolve his own teaching style.

W.F.J. Inglis (1980) refers integration as link practice and provides a model. The model he has presented is based on the one used at Stirling University in Scotland which proposes to use real students for integration. The class should be divided into two, thus by creating two classes, each lesson should take half the normal class period. Such an arrangement facilitates the supervisor to carefully observe a lesson and the trainee to organise small group for observations feedback.

As the teacher trainee develops the lesson he should be encouraged to practice the skill the students have learnt, through a manner appropriate to the content of lesson. No attempt

should be made to use each skill in every lesson, but trainees when planning should consider the skills appropriate to each phase of the lesson carefully. Moreover, during link practice it is possible to introduce other skills, for example, set induction and closure if required. But with regard to skills we should not loose sight of the general strategey adopted by the trainees when teaching the series of lessons. Throughout the lesson series trainees should bear in mind the overall objectives and should not become obcessed with one lesson at a time. At the end of each lesson a review should be attempted with the tutor, not only of the lesson taught but also of the general stratagey of the set of the lessons to be practiced. If possible care should also be taken to ensure that trainees do not employ the same approach, for example, starting with questioning and reacting. The trainees should also be encouraged to use different stratagies that are appropriate to their subject. Further a number of illustrations with sets of lessons in different subjects employing varied approach should be presented and commented upon.

2.4.0 Review of Studies on Integration of Teaching Skills

Studies

Although many articles, views, suggestions have appeared on microteaching studies, research in this area are conspicous by their absence. Moreover, the problem of integration is a

situational one, as far as the Indian Model of Microteaching (IMM) is concerned. This may not hold true for others models being practiced inside and outside the country. Because of such limitation the availability of researches specific to the Indian context are scarce. Because of scarcity all emperical evidences available are presented comprehensively so as to cover the major aspects, viz., perception of the problem by the investigators, approach followed, methodology adopted, tools used and major findings. A gestaltic outlook of all studies available are presented in the following Table 2.6.

Das et al (1982) studied the effectiveness of different stratagies of integration within teaching skills for developing general teaching competence of student teachers. The major purpose of the study was to study the effect of vicarious integration (no integration) stratagey and planned integration training as the general teaching competency of student teachers. The specific objectives of the study are :

(i) to determine the comparative effectiveness of

  (a) 'no integration stratagey' and 'summative model of integration',

  (b) 'no integration stratagey' and 'additive model of integration', and

  (c) 'no integration stratagey' and 'diode model of integration' of the teaching skills in developing general teaching competence in student teacher

(ii) To study the relative effectiveness of

(a) 'no integration stratagey' and 'summative model of integration'

(b) 'no integration stratagey' and 'additive model of integration' and

(c) 'no integration stratagey' and 'diode model of integration' of teaching skills upon integration of selected teaching skill.

Design : The field experiment involved sixteen colleges of education. The study was planned and designed in a national seminar organised at Indore University in 1980. Investigators of the study were experienced researchers who had conducted studies in microteaching earlier. All the investigators followed a parallel group in the pre-test - post-test design. The student teachers in the control group and the experimental group were equated on the basis of sex, age, qualifications, experience, teaching subjects, etc. The sample of the study consisted of 264 student teachers studying in thirteen colleges of education from different parts of the country. Twenty students were from M.A. education and rest from B.Ed. course. The skill development programme basically remains the same as the Indian Model of Microteaching as described in chapter section , Introduction. The skills taken for reference in the study were, skill of probing questioning, skill of stimulus variation, skill of illustrating with example and skill of explaining.

The tools used were (i) General Teaching (GTCS) Competency Scale (ii) Indore Teaching Assessment Scale (ITAS) (iii) Evaluation proformas for teaching skill and (iv) Ahluwalia's Teacher

Attitude Inventory.

Results : For the 'no integration stratagey' and 'Summative Model of Integration' none of the experimental groups out of the five studies examined had a difference of significance between the post microteaching cum pre integration scores and the post integration scores on General Teaching Competency Scales. One of the four experimental studies showed a significant difference on 't' test, when tested for the mean difference between the scores of pre microteaching and post integration scores. To summarise the results, the study of effectiveness of integration stratagey on the general teaching competency of pre-service teachers are not conclusive as in case of summative stratagey, results of one of the five studies is significant, while in case of additive stratagey results in both institutions are not significant. Besides, the results in respect of diode stratagey though significant cannot be taken for granted as only one institution was studied in this regard. Replication might have given different results as has been the case with two other stratagies where the experiment has been replicated in more than one institution. However, limited successes with the integration strategy in the summative and diode models of teaching skills strikes an optimistic note. It may, therefore, be desirable to conduct similar studies in more institutions for further examination of the effects. The results are to be considered as trends which need to be confirmed through further researches. The outcomes of the study are enlisted as given below.

(1) There is some evidence available now that planned effort at the integration of teaching skills following summative or additive model does not only help in improving the general teaching competency of the perspective teachers but it also helps improving the quality of integration. In other words the transferability of skill y competencies acquired through microteaching is better in some cases where planned integration strategies are followed. The trend can be considered as a little weak in the sense that it is discreanible significantly only in the case of a few institutions while the difference is not found significant in a majority of the institutions. It is therefore, desirable to conduct further studies for taking the functional decision, for or otherwise, of the integration stratagies.

(2) Only two institutes carried out experimentation for the comparative effectiveness of 'no stratagey' and 'additive model' of integration. Out of the two, none recorded any mean gain differences on the general teaching competency (GTC) as significant.

(3) Only one institute carried out experimentation for the comparative effectiveness of 'no integration stratagey' and 'diode model of integration'. The sample comprised M.A. Education students. The mean gain obtained as general

competency of the control group and the experimental group differ significantly at 0.01 level which implies that diode integration stratagey enhances G.T.C.

(4) Comparison of scores for integration of teaching skill is measured by Indore Teaching Assessment Scale (ITAS) for no integration stratagey and summative model of integration. Out of six institutional experiments, two experimental groups showed higher gain at 0.05 level of significance.

(5) Three institutions experimented 'no stratagey model' with 'additive model of integration' out of which in only one experimentation, the experimental group showed significantly higher gains compared to the control group at 0.01 level of significance for 'ITAS' scores.

(6) The results of an institute which compared the 'no integration model' with 'diode integration model' were not significant at 0.05 level for integration of skill scores on ITAS.

Joshi, S. and Kumar, S. (1983) studied the effect of skill based approach and decision making ability on the development of teaching competence. The objectives of the study were (i) to find the relative effect of two skill based approaches on the development of teaching competence (ii) to find the effect of the skill based approaches on the development of 'Attitude Towards Teaching'.

The investigators selected two approaches of integration of skills which were defined as training decision making abilities for use of teaching skills in real class room situation. The decision making ability was refered to as the use of a set of teaching skills with a specific proportion of each skill in a particular sequence so as to maximise achievement of instructional objectives set by the teacher, the decisions are to be taken about the set of skills, their proportion and sequence. The decisions are dependent upon the reportiore of Teaching skills the teacher has the objectives of teaching the lesson and his perception about the class room situation with regard to lessons, their characteristics background, interests, physical set up of class room etc. Based on their analysis of teaching - learning situation he makes a selection of skills from his reportiore that could be used in the situation. Further he takes decisions regarding the sequence and proportion of teaching skills to be used. During the teaching - learning process he matches his performance with his earlier perceptions and decisions. He interprets and diagnosis the reasons for the type of matching that has occured and modifies his decisions regarding the use of the teaching skill and also the objectives of the lesson. This process continues in the classroom teaching-learning situation.

The decision making ability remained similar for the two approaches and selection of skills. No differences were arrived at. One approach had the additive model as the basis and the other had the summative model.

The experimentation was done with twentytwo student teachers undergoing one year B.Ed. course at the Faculty of Education and Psychology, The M.S. University of Baroda, during 1982-83. The experimental design was a matched group test. The groups, each, comprising eleven students were matched on the basis of age, sex, intelligence score, academic qualifications, and previous achievement. The post-test was based on two tools viz. (1) observation schedule to measure the decision making ability (ii) A scale to measure teaching competence.

The results of the study were as follows:

(i) The two groups means obtained differ significantly at 0.05 level when measured through the criterion scoring scales. The trainees who developed the ability of decision making through a gradual increase in the number of skills, time etc. (additive model), performed better so far as their teaching competence was concerned, compared to the summative model.

(ii) There was no significant difference in the attitude towards teaching profession of the student teachers when tried through these two differential approaches. Student teachers of both groups had highly favourable attitude towards the teaching profession. The treatments were able to maintain the highly favourable attitude called for towards the profession, but could not increase the level of favour in their attitude.

Lalitha (1980) studied the 'effectiveness of a stratagey of training for integrating teaching skills on the teaching competence of student teachers'. The objectives of the study were to compare the effectiveness of the experimental treatment with control treatments for training in integration of teaching skill in simulated conditions and in real school conditions, interms of the scores on General Teaching Competence Scale (GTCS) and Indore Teaching Competence Scale (ITCS).

The methodology employed , is pre-test - post-test control group design with pre-test scores and teacher attitude as covariates. Sixteen student teachers of a teacher training college constituted the sample of the study. The experimental and control groups had nine and seven student teachers respectively. The microteaching phase remained same for both the groups consisting development of skill viz. probing questioning, reinforcement, stimulus variation, explaining and illustrating with examples. During the integration phase the control group was provided with four regular lessons of forty minutes duration. Each lesson was presented in simulation with peer pupil followed by traditional feedback by the supervisor. The experimental group had orientation to the concept and need for integration of the five teaching skills through additive model.

During the second phase of integration the control group had eleven to twelve regular lessons of forty minutes duration using the traditional approach. The experimental group had the same number of lessons with supervisory feedback in terms of adequacy of the five skills and their integration based on GTCS and ITCS.

The mean difference between the experimental and the control groups with regards to scores on general teaching competency obtained after immediately following simulated integration is not significant at 0.05 level. Similar were the results on ITCS. From the results one can infer that both the experimental and the control treatments in simulation were equally effective in developing teaching competence among the student teachers, as measured through both GTC and ITC scores.

When the two groups were tested for the [illegible] obtained mean difference in order to find out the effectiveness of integration stratagey of teaching skills followed by real school situations. The scores on GTCS differed significantly at 0.01 level than the experimental group with higher scores. Whereas the ITCS scores did not differ significantly at 0.05 level even though the experimental group had higher scores.

After training for integration of teaching skills in simulated conditions the experimental group had made greater mean gains (significant at 0.05 and 0.5[illegible]) than the other group on teaching competence measured on GTCS (adjusted for initial

difference in teacher attitude), and there was no such difference in terms of teaching competence measured on ITCS. The same results were obtained even after the entire training for integration of teaching skills (simulated followed by real school teaching practice). But the difference in GTCS gains between the group was still more significant at 0.01 level of significance.

Mukopadhayay, Kathuria and De laney (1982) conducted an experiment on integration of skills for development of teaching competence. The study proposed to look for alternative training stratagies for teachers in order to improve their teaching competence. Two stratagies were tried out in an experimental setting. The objective was to study the effects of the two stratagies on two different groups of inservice teachers and also to identify the relative effectivity of the treatment simultaneously.

In both the treatment styles four instructional skills were selected for training. In treatment - I, regular micro teaching approach with plan-teach-critique-replan-reteach-recritique was used as the cycle for each skill. Treatment - II was a media package designed to incorporate the principles of auto-instruction of instructional skills. The instructional material prepared contained handbooks, taped model lessons, instruction sheets and a small diary. In treatment I training in different skills were given in isolation as mentioned for the Indian Model of

Microteaching and no integration stratagey was applied. They were directly tested for criterion test, and in treatment II skills training were given followed by integrated efforts in subsumption model. It should be noted that treatment II has no supervisor for feedback in simulation as well as in real class room. The feedback was obtained by audio cassettes and through the activity of recording in the observation diary.

The result reveal that both the groups gained significantly in teaching competence. This means that both the treatments were effective in developing teaching competence whereas t value in treatment - I was significant at 0.01 L.O.S. that in treatment II was significant at 0.05 L.O.S.In other words, both microteaching and media package with training in integration were useful in training inservice teachers of primary and middle schools. However, the difference of post treatment means of Group I and Group II is significant at 0.01 level. Hence treatment - I comes out in this experiment as a superior technique.

Malhotra et al. (1979) studied the effect of microteaching on teaching competences of teacher trainees. The study was conducted at the Technical Teachers' Training Institute, Chandigarh. The main objectives of the study were, (i) to ascertain changes in performance in respect of different teaching competencies (ii) To ascertain differences in performance in the teach and reteach sessions of microteaching in all the four skills and (iii) To assess and compare the performance in each of the sub-component of teaching encounter.

The experiment was designed with pre-test post-test single group design. The sample of study comprised 23 student teachers from electrical, mechanical and civil subjects. A scale was used to assess the overall teaching performance of the teacher.

For skill measurements at teach and reteach sessions seperate performance based on skills were also used. An elaborate proforma than the first one was used to measure the performance on simulated lesson focussing on integration of skills. The procedure for experimentation was not similar to the IMM. One, forty-five minute macrolesson was given by each student in simulation which provided pre-test scores. The microteaching programme was introduced for practicing four skills, namely, skill of demonstration, communication (verbal), communication (non-verbal) and motivation, and closure. The skills were practiced one by one in isolation through simulated techniques with peers as students. Each student teacher practiced two lessons each of eight minutes duration for each skill. For the feedback video tapes, audio tapes along with tutor and peers were used. Plan - teach - feedback - replan (immediate) - reteach - refeedback was the cycle followed. After the microteaching programme the student teachers were exposed to model lessons of fortyfive minutes duration. The purpose of the model lesson was to demonstrate to the teacher trainee the way numerous skill in a teaching - procedure are integrated. Thereafter each student teacher practised teaching for six full lessons of fortyfive minutes duration in simulated conditions. The performance of students teacher were assessed at the end as post-test performance. At each skill, teach

and reteach, the performances were recorded for skill performance.

The mean difference from pre-test to post-test being 24% is positive and significant, justifying that microteaching enables the student teachers to gain a positive overall teaching competence. All the seven teaching competencies measured shows an increase from pre-test to post-test, irrespective of these competencies being specifically practical in skill training. The reactions of student teachers concludes that most of them could not focus as much as sub components at the simulated lesson stage. A single model lesson for integration and the type of feedback was found inadequate to integrate the developed skills.

Pankaja (1979) conducted a study to find the effectiveness of integration stratagey against no integration of skills on general teaching competence. The objectives of the study were as follows : (i) To evaluate whether the skills developed in isolation get automatically integrated and transfered to real class room situations (ii) $_{to}$ evaluate whether the students will be able to integrate the skills spontaneously (iii) To evaluate the effectiveness of training in integration of skills (iv) To compare the effectiveness of training in integration of skills and the non-integration of skills on general teaching competencies.

The two groups were matched on intelligence, subject, age, experience, pre-test post-test matched group was the design opted. Each group had eight students Introduction of lesson,

Probing questioning, Reinforcement, Explaining, and Illustrating with examples, were the five skills selected for skills developed. The Indian Model of Microteaching was used. Students of experimental groups had orientation about integration in the beginning along with orientation for microteaching. Later experimental group was given practice for integration after microteaching programme. The control group was given microteaching practice and a few traditional lesson practices in real class room teach before the final test. The performance is measured before microteaching immediately after microteach before integration, and after micro teaching with the Baroda General Teaching Competence Scale.

The results reveal that, (i) the training of skills through microteaching technique under controlled conditions had great influence on general teaching competence (ii) There was not much difference but great similarity between the performance of controlled group and that of experimental group in gain scores after microteach programme. (iii) The deliberate attempt to integrate skills under microteaching condition has a positive effect on general teaching competence (iv) The latencey period had no deterious effect on the skills already acquired.

Belliappa Asha (1978) conducted a study on the effect of integration of skills in stages and non-integration of skills under microteaching setting on general teaching competency and attitude towards teaching.

The design was pre-test post-test matched pair group. Students were matched on age, sex, subject experience and intelligence. In all, sixteen student teachers were selected. The pre-test was given after microteaching and before integration phase. The post-test was administered soon after the integration.

The training of skills through microteaching resulted in better teaching competency. The training of the student teacher in the skills with no integration, and with integration in stages, showed a great improvement on teaching competence.

Nasreem Begum (1978) conducted a study on the effect of simultaneous integration under microteaching and practice of skill under macro-conditions on general teaching competence.

According to the Single group design used for experimentation. The results arrived at indicated that training in simultaneous integration under microteaching condition and practice of skill under macro conditions has similar effect on General Teaching Competence. The training in integration of skills simultaneous improved general teaching competence.

George (1983) studied the effect of microteaching and integration of skills in Teaching Self Concept of Student teachers. Twenty student teachers of one year B.Ed. course were the sample for the study. Besides, a matched parallel group with post-test was the design adopted. Intelligence, sex, age, teaching experience and qualification were the variables

for matching. Skill of probing questioning, stimulus variation, reinforcement, illustrating with example and explanation were the skill competency developed. IMM was used for microteaching programme. Experimental group had a post microteaching integration treatment. The integration treatment comprised orientation, providing instructional material on integration skills, a demonstration lesson of twentyfive minutes by applying summative model. Every student teacher gave four integration phase lessons of twentyfive minutes each, with summative model in simulation. Feedback was provided for 10 minutes soon after teach session on the basis of ITCS. As a pre-test, the self concept scale was administered. The same self concept of teaching scale was readministered soon after integration and for two regular lessons in real classroom situation were used as criterion performance test.

Both the groups had significant difference from pre-test to post-test on self concept of teaching scale. Experimental group had higher means showing superiority of experimental group. At the same time measure of dispersion of self concept of teaching scale scores of the experimental group were high and 'r' was low, when compared with those of control group of student teachers. There was no significant improvement in the self concept of teaching due to summative stratagey of integration of skill. The self concept of teaching of student teachers can be enhanced significantly through microteaching practice in simulation.

Singh Gita (1982) made a comparative study of different stratagies of integration of teaching skills. The study basically aimed to compare the effects of integration practice through summative pattern with the effects of traditional practice teaching programme on three criteria viz. (a) attitude towards teaching, (b) integration of teaching skills, and (c) general teaching competence. Further the study also studied the differential effects of different sources of feedback on the three criteria variables. The study involved 48 B.Ed. students selected from 200 students in the Faculty of Education, Banaras Hindu University. The selected sample was divided into four parallel groups of 12 student teachers on the basis of their preservice training, subjects ✗ studied, academic qualification, sex and method subjects selected. The design involved for the study is pre test post test parallel group design.

All the four groups were initially given a pre test of teaching performance in real classroom teaching. The above referred three criteria measurements were used to record their performance. This was followed by the general microteaching treatment to all the four groups. The treatment followed the Indian Microteaching Model.

Jangira et al. (1980) studied, use of microteaching for improving general teaching competence of inservice teachers. In the design the Post-test II was to study the retention ability of the skills operation in real class room after a gap of eight weeks. The picture that emerges from the data and its analysis that, it is possible to improve the skill competence as well as general teaching competence of inservice social studies teachers through training in teaching skills using microteaching technique. Once the competency is acquired it is transfered to actual teaching situation when they go back to their designated teaching positions in schools. There is likely hood that these gains are not only retained but improved further.

Edmund T.Emmer (1971) studied transfer of instructional behaviour and performances acquired in simulated teaching. The study examined whether instructional performance acquired during simulated teaching with peer acting would transfer to a setting in which real pupils were students. Four rating and two descriptive measures were obtained for 44 prospective secondary teachers using the lesson taught to peers and to 6th, 7th, 8th grade students.

Comparison of the teachers rated performance including behaviours in the peer lessons and real pupils lesson indicated lesson using the peers as student and that the increased level of performance were maintained or improved when real pupils

were used. The results were interpreted as evidences for transferability of instructional behaviour across setting.

2.5.0 Review

The reviews of literature related to integration of teaching skills can be broadly classified into three sections namely, literature on microteaching, literature on conceptualisation of integration and studies conducted on integration of teaching skills.

The literature on microteaching broadly reveals that large number of studies are conducted to develop and validate the programme in the beginning. During seventies the researches were focused on defining the microteaching model and find relative validity of alternative components. These studies provided various shades of microteaching programmes that suited to local needs of the different types of institutes. Indian Model of Microteaching was evolved to suit the Indian context where non-availability of hardwares and one year training course were the major conditions met with.

During later part of seventies the problem of transferability increasingly caught the attention of researchers. The beginning of this area is marked by large number of conceptual papers published (Griffith, 1972 ; Horgie et al. 1979; Don et al. 1982; Passi and Sharma, 1978; Malhotra and Sharma 1979; Yadav and Roy, 1977; W.F.J.Inglis, 1980).

Fig.2.6 : Studies on Integration of Skills

Investigator	Instructional Material Structured or not, for Integration	Major Model	Experimental Design	Tools used for Validity	Results
1. Das et al.(1982) NCERT.National Level Project	No structured Material	-Vicarious (No integration), -Summative, and -Additive, Diode	Matched group Pre test Post test	-Rating Scales -General Teaching Competence - ITAS	No conclusive results. For summative model two out of six had significant results. For additive models diff. is insignificant for two out of three. For diode insignificant results. Only one institute did planned stratagey for integration. Show improved integration and general teaching competence.
2. Joshi,Kumar(1983) University Project	No structured Material	-Summative Model -Additive Models	Matched group Post test Design	-Rating Scale -General Teaching Competence (1) Decision Making (2) Non-skilled based	Additive model found better than summative with significant difference
3. Lalitha (1980) Institutional Project	No structured Material	-Vicarious -Additive Model	Matched Pretest Posttest Design	Rating Scale -General Teaching Competency - ITCS	Simulation was equally effective in both models. Testing after school practice did not show any difference. Gain seen on GTC for exptl., significant than control.
4. Mukhopadhya et al. (1982). Institutional Project	No structured Material	-Vicarious Skill development, -Modular Packages with Simulation Integration	Matched Pretest Posttest Design	-Rating Scale -General Teaching Competence	Both groups gained significant difference with Pre test Scores. No integration stratagey showed sig.-higher difference with Module
5. Malhotra et. al. (1978). Institutional Project	No structured Material	-Summative	Single group pre test Post test	-Rating performance on General Teaching Competence	Planned integration contributes significantly for integration
6. Pankaja (1979) M.Ed. Dissertation	No structured Material	-No Vicarious, -Summative	Parallel group, pre test post test design	Rating Scale -General Teaching Competence	No sig. difference between two groups. Both gained significantly better scores compared to pre test
7. Belliappa Asha (1978) M.Ed. Dissertation	No structured Material	-No integration, -stagewise	Pre test Post test	Rating Scale -General Teaching Competence	Planned integration contributes significantly for integration
8. Nasreen Begum (1978) M.Ed. Dissertation	No structured Material	-No integration -simultaneous with ~~material~~ Mtg.	Matched group Post test Design	-General Teaching Competence	Planned integration contributes significantly for integration
9. Singh Geeta (1982), Ph.D. Thesis,B.H.U.	No structured Material	-No integration, -Summative with Auto,Self,Peer Feedback	Parallel group pre test Post test design with Four Groups	-General Teaching Competence. - [illegible] Integration of Teaching Skill, and, ATT.	All the four groups show significant difference from Pretest to Posttest Summative and Control are equivocal.

The researches in integration of skills are limited in number as compared to the studies taken in microteaching programme. A few of the studies conducted reveal that the planned integration contributes to integrate the skills compared to that of spontaneous integration. (Don et al. 1982; Joshi, Kumar, 1983; Lalitha, 1980; Mukhopadhaya et al., 1982, Malhotra et al. 1979).

The skills involved for practice were, probing questioning, reinforcement, stimulus variation, explanation and illustrating with examples. Soon after the microteaching training the four groups were treated separately for integration phase. The control had no special treatment, they gave seven periods of classroom practice in real class amounting to 280 minutes training. The experimental groups were provided with summative integration for 280 minutes time. The three experimental group varied in their experimental treatment only in terms of feedback. The three differential feedbacks were autofeedback, peer feedback and supervisor feedback. As a post test all the four groups gave two lessons in real classroom. The observations were done on similar lines to the pre test.

The scores of teaching Achievement Scale did not show any significant difference between the control group and rest of the groups, concluding the summative and no integration stratagey being equal in developing integration ability. All the four groups show significant increase on all the three criteria when compared to the pre test scores.