CHAPTER III

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The research literature on the development of professional competency of teachers as related to their inservice education is available mostly from the Western world, particularly United States of America, and comparatively much less in India. Perusal of the results of researches already attempted in this field have helped in bringing to focus some significant research trends and thus pinpointing the problem, formulating the hypotheses, applying the methods of research appropriate to the study of the problem and interpreting the results.

Inservice education of teachers has always been held in high esteem by educationists of repute. The problems and issues in this field were summarised by Stephen Corey (1957) who had further emphasized the need for conducting planned programmes in contrast to independent attempts being made by teachers to improve themselves. Richey (1957) also referred to tremendous but largely unfilled need of inservice education for even modestly educated and professionally trained teachers. Goreheim (1959) and Cory (1959) found that teachers accepted and valued inservice education programmes which
were planned carefully, locally and cooperatively. Taylor (1961) identified that the need for continuing education was felt by the teachers already in service. The comparative study of Chilana (1967) in this area has brought out some features of the programmes of inservice education of elementary school teachers in India and the Philippines and reported that the organisation of these programmes is more centralised in Philippines.

Some of the noted studies are given trendwise as follows:

TEACHING EFFECTIVENESS

Black (1961) found out that inservice education influences the knowledge and skills of the teachers. Openshaw (1962) concluded that the greater the participation by the teachers in inservice education programmes the better the learning which is likely to result. Johnson (1962) held that no better or more practical opportunity can be offered to the individual teacher in keeping him abreast of the latest findings in the field and for examining his philosophy and practices than guiding and counselling and alert student teacher. Herman (1962) indicated that planned programme could bring about decided changes in the teaching of
Flanders (1962) investigated the use of interaction analysis of inservice training of teachers who did show significant changes in their classroom behaviour which were consistent with the intent of the training.

Moffitt (1963) emphasized that due to the continuing obsolescence of knowledge and methods of teaching among the working teachers, the planned programmes to upgrade their performance are very much needed. Lewin (1963) ascertained through a sampling of 200 educators (deans, representatives of state departments of education, city school superintendents and presidents of secondary education associations) that these individuals believed in and recommended the cooperative and democratic approach in developing a philosophy of inservice education and in organizing and administering a programme. Lucas (1963) and Schwalenberg (1965) concluded that the most successful orientation programmes were those which derived their bases and objectives from teacher needs and which were based on the knowledge of the background of teachers. Singer (1963) held that an effort was needed to be made to narrow the gap between research and practice by establishing a proper liaison between the working teachers and in the field of education. Rosser (1963) emphasized the practicality of inservice education through
the relationships between student teachers and classroom supervisors. DeVlta (1963) formalized a procedure which allowed teachers in a given school to observe other teachers for observation sake only. Many of the more experienced teachers were surprised and delighted to see many fine practices being followed by their colleagues. New teachers found this experience extremely stimulating and helpful. Harmonious reactions from the professional staff gave encouragement to further action research of this type. Karbal (1963) undertook an evaluation of a workshop and its effects as a process in the inservice education of teachers by appraising the way by which programmes and schools were affected. Evaluations by co-workers indicated that the key teachers had grown as professional colleagues and had gained much more from the experience, their colleagues also indicated that they were now able to exert a positive influence on the rest of the faculty.

Dale (1964) held that the inservice education programme should be sensitively based on the needs of the beginning teacher. Schild (1964) ascertained that most of the teachers voiced a need for objective methods to be used in inservice programmes. Duncan (1964) attempted to
identify some of the factors which proved to be instrumental in the successful operation of programmes of inservice education of teachers. He recommended that the existence and operation of inservice programmes should be governed by policies adopted by the board of education. Local administrators and the members of the instructional staff should identify their respective roles in an effective inservice education programme. Such programmes should be organized giving adequate consideration to such factors as continuity, time of meeting, resources and participation of the professional staff in programme planning, operation and evaluation. And along with this careful consideration should be given to the relationship of inservice education efforts to the improvement of instruction. Rubin (1964) summarized the strategy for curricular change and inservice education, wherein the teacher has to play the pivotal role. Brandon (1964) indicated that it was feasible to use competent secondary school teachers as inservice instructors for elementary classroom teachers. Reed (1964) found that beginning teachers needed specific help in meeting some urgent problems of schools e.g. provision for talented students' evaluation and classroom control of discipline. Haan (1964) stressed upon the psychoanalytical approach for the development of sound
interrelationship of teachers among themselves and with the students.

Childress (1965) emphasized that the continuing education of the individual and of the profession is essential to maintain and to improve educational programmes and classroom instructions. Stent (1965) found that teachers who participated in the inservice education programmes improved their skills and were able to solve immediate problems more realistically. Cooksey (1965) evaluated that classroom practices of the experimental group of English teachers in teaching grammar, usage, and mechanics had a significantly greater role of change than the classroom practices of the control group teachers did.

Dutton and Hammond (1966) analysed that the inservice education programme proved more useful if it provides sufficient opportunities for individual teachers to work on specific difficulties rather than to repeat work that had been studied before. Venditti (1966) found that inservice education promotes national integration by way of developing genuine rapport among participants.

Hina Roy (1970) found that the sex of the teachers in general is unrelated to the ratings received. However,
the difference if any between women and men trainees, faded away in service as regards their effectiveness as teachers. Jackson (1971) contrasted two approaches to inservice education of teachers - the 'defect' approach and the 'growth' approach - and his findings went in favour of growth approach. Lipitt and Fox (1971) stressed the need for proper evaluation of inservice education programmes and improving accordingly. McGuire (1971) proved that the workshop model developed appeared to increase the knowledge and use of effective teaching strategies and methods, and to assist teachers in identifying teaching strategies from instructional methods dictated by material. Awareness of new developments in a field such as social studies brought about increased concerns, understanding and discrimination in teachers relative to content, teaching methods and teaching competencies. And consequently changes in teacher behaviour and attitude towards teaching materials appeared to occur. Scharles (1971) investigated that statistical evidence indicated that an intensive short-term inservice teacher training programme is effective in contributing to the cognitive aspects of teacher effectiveness. Carr (1971) proved that there is no significant difference between the achievement of students...
of teachers who participated in the inservice education programmes and students of teachers who did not participate in the inservice programme and that there is no significant difference in the attitudes of students of teachers who participated in the inservice programmes and students of teachers who did not participate in the programme. Girman (1973) studied that a significant difference existed in the verbal behaviour of the middle school teachers on the post-test results and the teachers did change in their verbal behaviour by using more learner centred statements when they were made aware of it through inservice programmes. Estelle (1973) observed that more teachers of the experimental group perceived that the instructional practices of the 'New Social Studies' are essential for teachers to use than do the teachers of the control group. And there was a significant difference between the experimental and control group in the variable of the new social studies curriculum content.

Arieno (1974) found that elementary teachers rated inservice programmes planned by teachers more highly than did secondary teachers, but the group of teachers indicated a positive perception of such programmes. Adams (1974) found that teacher educators can help teachers learn new approaches. And procedures for teaching can be identified
and labelled as strategies with specific names - development strategy, individualized strategy, mastery strategy and orchestration strategy. A forum for teachers to practise newly acquired skills were found through the development of mini lessons.

Arends et al. (1978) observed that dependence on the technology of needs assessments may also be ill-advised given the narrow perspective of traditional inservice education, the aversive connotation of the term 'needs,' the limitation of survey methods and the difficulty of expressing priorities. Gordon (1979) concluded in the form of a design and a set of guidelines for the implementation of a teacher centre in a rural district.

Kyros (1980) observed that the critical use of conceptual frameworks based on system models can be helpful in improving the understanding of social systems in general and inservice teacher education in occupational education in particular. Martin (1980) found that attention to the degree of commitment, need and involvement of the target group should be considered before the initiation of inservice programmes so as to ensure its cost effectiveness. Fullan (1980) stated that all studies
of inservice education have indicated that lack of time and energy for participating in professional development is a fundamental barrier to success. Howey (1980) concluded that unless we alter significantly the basic conditions of schools in many situations, we will do little to advance the notion of continuing education in general and school focused inservice specifically. Joslin's (1980) findings on the basis of meta-analysis of the research evidence related to inservice teacher education indicated that across all types of inservice treatment the teacher receiving some type of inservice treatment and of the 50th percentile of the treatment group would be equivalent to a teacher at the 68th percentile of the untreated group. Purifoy (1980) suggested that in terms of the amount of reinforcement used, the follow-up support programme encouraged teachers receiving the follow-up assistance to increase the use of reinforcement and that without follow-up support assistance teachers will return to or fall below base line behaviour within a short period of time after completion of initial training. Gareoute (1980) concluded that inservice training produced a positive change in teachers' pedagogical knowledge in the experimental group of teachers. Moulin (1980) conjectured that inservice educators should be selected from among
specialists with recent classroom experience and that learning opportunities should be diversified in order to satisfy differences among participants. Falougi's study (1980) indicated that it would be helpful for developing countries to establish professional development centres which would provide opportunities for teachers to have dialogues among themselves and to try innovations in a non-threatening atmosphere.

Echevarria (1981) recommended that a need-assessment procedure should be carefully established before an inservice programme is formally adopted. Bolam's useful summary (1981) of the relevant research concludes that a small minority of schools uses the problem-solving model for much of their work and that quite a large minority uses it for at least a part of their work. Henderson (1981) has argued for the incorporation of an evaluation dimension into all inservice education activities. Inservice education is so context-based that it may be more profitable to think in terms of building an evaluation component in the inservice training institutions than of employing an expensive cadre of evaluation specialists.

Boyd (1961), Winsor (1961), McKee (1962), Kerns (1962) held that the use of television as an educational
instrument becomes significant if it is supplemented with other teaching efforts such as seminars and individual study etc. Tarbet (1963) and Rubin (1964) stressed the need for a special inservice education programme if television is to be used successfully as an asset in the learning process.

TEACHING ATTITUDE

Flanders (1962, 1963) indicated the positive aspects that experience in group relations may have on teachers' attitudes and activities and how new attitudes can be developed through inservice education. Dossett (1964) found that workshop on mathematics contributed to the development of mathematical understanding and to a change in attitude towards arithmetic. Todd (1965) evaluated a special course in mathematics for teachers and found that the course resulted in significant improvement in the understanding of arithmetic and attitudes towards arithmetic for those completing it. McLeod (1965) found similar results in an inservice programme conducted to remedy deficiencies in mathematics. Srivastava (1967) attempted to locate the strengths and weaknesses of inservice programmes with reference to their impact on teacher attitude which had been found subject to change depending upon the quality of inservice programmes.
Samantaroy (1971) proved positive relationships between the variables of teacher attitude and teaching efficiency and also between the variables of teacher adjustment and teaching efficiency.

Jones (1972) concluded that a significant change in percent of teacher-student talk without direct practice or patterning on a model is an indication that Flander's interaction analysis has a potential as a broad measurement instrument: (a) to measure change in attitude; (b) to serve as a broad random sample of conceptual understanding; (c) to measure change in teaching methods. Lazarus (1972) found that inservice programme of study in mathematics education has positive effect on teachers' attitude towards teaching mathematics. Manning (1972) concluded that utilizing a mathematics laboratory approach with the mathematics inservice education of teachers is an effective way to bring about positive changes in the mathematics attitude and achievements of their students.

Hargrove (1973) concluded that courses and inservice training appeared to be positive factors in influencing favourable attitudes toward teaching readings in the content areas. Neale (1973) showed that there was a significant positive change in teachers' attitudes towards
teaching in general as measured by the Minnesota Teaching Attitude Inventory.

Scorn (1976) supported the thesis that an individualised inservice practicum for regular classroom teachers can have a positive effect on changing their attitude about mainstreaming children with special needs. The conclusions were that attitude change about mainstreaming was affected by numerous factors such as inservice format, the characteristics of the instructor, the characteristics of the participants, nature of the problem, nature of the attitude change desired and the nature of the situation where the change was to take place. Juskey (1979) determined special conditions under which inservice education for teachers results in change in teachers' attitude and perceptions as well as change in their actual teaching behaviours by using multivariate statistical procedures.

Raines (1983) revealed that student teachers have more favourable attitudes than the inservice teachers. He has also made comparison of attitudes of three groups of inservice teachers with that of three groups of student teachers and found that science students have more favourable attitudes towards teaching than those of art and commerce student teachers.
RIGIDITY FLEXIBILITY

Flexibility in teacher behaviour produces better results in the learning process of students as Flanders (1963) had made it evident from his research findings.

Bush (1971) concluded that craftsmen, however, can acquire new skills through training, even though the process is likely to be lengthy, but they do not make professional judgements and their flexibility does not easily extend to making adjustments to practise according to the different situations confronted. Joyce's (1980) findings also support this point of view. Apart from this, Bush (1971) has further observed that teachers in general are not flexible enough to make adjustments to the different situations which they face.

EDUCATIONAL AWARENESS OF TEACHERS

Fichey (1957) referred to the tremendous but largely unfilled need of in-service education for even modestly educated and professionally trained teachers. The need for such programmes to upgrade the performance of teachers has been stated throughout such works as Moffitt's (1963) where emphasis is placed on the continuing obsolescence of knowledge and methods of teaching.
ACHIEVEMENT OF TEACHERS

Studies on the effects of inservice education in specialized areas and academic fields have been conducted by Brown (1962), Weaver (1967) and Stent (1965), results of which proved that teachers who participated in the inservice education programmes improved their skills and were able to solve immediate problems more realistically. Grant (1973) applied analysis of variance and showed that attendance in the inservice classes improved teacher achievement over no attendance at the .01 level of significance. Stein (1979) found that the relationship between the use of knowledge gained in inservice education programmes and the other behavioural modality elements was positive. Garroutte (1980) concluded that inservice training produced a positive change in teachers' pedagogical knowledge in the experimental group of teachers.

SCHOOL RESULTS OF TEACHERS

Weaver (1962) analysed the effect on pupils of an inservice education programme for teachers. He found that the students who were in the classes under the experimental group of teachers made significantly greater gains in adjustment than students of teachers in the control group did. Selser (1962) also found that the students of
The experimental group of mathematics teachers made statistically higher scores on post-test than did students of the teachers of the control group. Florida (1971) stated that inservice education is to cause some, more or less, permanent changes in what a teacher knows, how he feels or how he acts that will have a positive effect on his pupils.

Carr (1971) proved that there is no significant difference between the achievement of students of teachers who participated in the inservice education programmes and students of teachers who did not participate in the inservice education programmes.

But the inservice training programme as described in the study by Jones (1972) did produce positive change in communication patterns between teacher and their pupils.

Medley and William (1957) states that some teacher behaviour does affect student learning and the teacher behaviour may be modified through inservice education programmes.

Bass (1980) concluded that techniques learned by the teachers in inservice training programmes contributed to change in pupil achievement.
Report on teacher policies (OECD, 1978) describes that there was general agreement among researchers, administrators and teacher educators about the urgent need for viable model and strategies for the evaluation of inservice programmes. Eraut (1985) has also remarked that inservice education and training is undertheorized and underconceptualized and hence it needs to be investigated perspective.

To conclude with, the review of related research findings tends to show in general that inservice education and training meant for working teachers has to play some role in developing their teaching effectiveness, changing their attitudes, making them educationally more aware, improving their achievements in the concerned areas and improving their school results. Carefully planned inservice training programmes do have better impact upon the teacher trainees. Besides, hitherto research findings do not show any prominent role of inservice education and training in making the working teachers more flexible enough to make adjustments to the different educational environments which they come across.

As regards the sex difference about the impact of inservice education and training on the working teachers, only a few research findings have been made which point
out that normally there happens to be no significant difference between males and females in this connection.

In the light of this discussion, the investigator has made declarative statements in concern with the impact of inservice training programmes upon teacher trainees and the criterion measures of teaching effectiveness, teaching attitude, educational awareness of the teachers, achievement of the teachers and school results of the teachers, whereas the null hypothesis has been formulated for the variable of rigidity and flexibility. On the other hand, concerning all the criterion measures of professional competency in relation to sex differences of the teachers, the null hypotheses have been formulated.

Again a recourse to the related research findings may be made wherein it appears that the different criterion variables of professional competency have exhibited to somehow interdependence amongst themselves. Also the strengths and weaknesses of the inservice education programmes affect the multidimensional professional competency of the teachers. Thus in the present study declarative statements have been formulated to study the conjoint effects of process variables and
structure variables on product variables respectively, and also to study the relative impact of physical structures of inservice training institutions upon three criterion measures of professional competency, namely, teaching effectiveness, achievement and school results of the teachers.

HYPOTHESIS

1. There is significant difference between any two of the four exposed groups in respect of the efficacy of inservice training programmes organised for social studies and mathematics teachers separately at Patiala and Jalandhar.

2. There is significant difference in respect of impact of educational environment between the teaching effectiveness of social studies and mathematics teachers exposed to inservice training and that of the teachers unexposed to any such training.

3. There is significant difference in respect of the impact of educational environment between the teaching attitude of the social studies and mathematics teachers having undergone the inservice training programme and that of the teachers not having undergone any such training.
4. There is no significant difference in respect of the impact of educational environment between rigidity-flexibility of the social studies and mathematics teachers exposed to inservice training and that of the teachers unexposed to any such training.

5. There is significant difference in respect of the impact of educational environment between educational awareness of social studies and mathematics teachers having undergone the inservice training programme and that of the teachers not having undergone any such training.

6. There is significant difference in respect of the impact of educational environment between achievement of social studies and mathematics teachers exposed to inservice training and that of the teachers unexposed to any such training.

7. There is significant difference in respect of the impact of educational environment between the school results of social studies and mathematics teachers having undergone inservice training programme and that of the teachers not having undergone any such training.
8. There is no significant difference between the social studies and mathematics male and female teachers exposed to inservice training and that of the teachers unexposed to any such training, with respect to the measure of teaching effectiveness.

9. There is no significant difference between the social studies and mathematics male and female teachers having undergone inservice training programme and that of the teachers not having undergone any such training, with respect to the measure of teaching attitude.

10. There is no significant difference between the social studies and mathematics male and female teachers exposed to inservice training and that of the teachers unexposed to any such training, with respect to the measure of rigidity-flexibility.

11. There is no significant difference between the social studies and mathematics male and female teachers having undergone inservice training programme and that of the teachers not having undergone any such training, with respect to the measure of educational awareness.
12. There is no significant difference between the social studies and mathematics male and female teachers exposed to inservice training and that of the teachers unexposed to any such training, with respect to the measure of achievement of teachers.

13. There is no significant difference between the social studies and mathematics male and female teachers exposed to inservice training and that of the teachers unexposed to any such training, with respect to the measure of school results of teachers.

14. The conjoint effect of process variables on achievement of teachers is higher than any of the individual correlations in a bivariate analysis and the process variables contribute differently to the criterion measure of professional competency.

15. The conjoint effect of process variables on school results of teachers is higher than any of the individual correlations in a bivariate analysis and the process variables contribute differently to the criterion measure of professional competency.
16. The conjoint effect of structure variables on achievement of teachers is higher than any of the individual correlations in a bivariate analysis and the structure variables contribute differently to the criterion measure of professional competency.

17. The conjoint effect of structure variables on school results of teachers is higher than any of the individual correlations in a bivariate analysis and the structure variables contribute differently to the criterion measure of professional competency.

18. There is significant difference between the negative and positive response categories of the teachers with respect to the impact of physical structure of inservice training institutions on professional competency of the teachers.