CHAPTER I

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All educationists of the past and the present, no matter how different their concepts are, admit that inservice education and training of teachers is an essential ingredient for the qualitative improvement of secondary education. Bolam (1990) has conveniently defined the inservice education and training as:
"Those education and training activities engaged in by primary and secondary school teachers and principals, following their initial professional certification, and intended mainly or exclusively to improve their professional knowledge, skills and attitudes in order that they can educate children more effectively."

It seems plausible to remark that inservice education helps teachers get themselves acquainted with broadview of new researches, innovations, educational technology and latest strategies of instruction as related to their specific subject and allied fields in general. In fact even a highly proficient teacher well-versed in content matter of the subject concerned, also gains increments to his existing knowledge as the
process of self-learning is accelerated through interaction with other people with problems. At the same time, it is widely recognized, as Kraut (1985) has mentioned, that the structures and practices which have developed historically may not be the most appropriate for the final part of the twentieth century. Now it is imperative to ponder over that some facets of inservice education and training of the teachers need scientific analysis so that the present set up of inservice education programme be restructured in accordance with the latest innovations in the field of education.

Inservice education of teachers is a process as well as a stage of education. Banner (1960) contributed his ideas on development of cognitive processes in the process of education for which competent personnel need not be dispensed with. Ryan (1952) after conducting considerable researches on teacher characteristics observed that future research would yield data which would give valid answers to the question: "What are competent teachers like?" And Bridges (1986) says, "Incompetency is a term without precise technical meaning." Likewise competency is also rather a broad term comprising of aggregate of efforts of numerous factors influencing upon it. Inservice education and
training aims at developing teachers' professional competency, confidence and giving them the opportunity to enhance their knowledge and educational capacities in all fields of their work. Numerous scholars have tried to delve deep into the field and a brief account of a few explorations is given as under:

Samantaroy (1971) proved positive relationship between the variables of teacher attitude and teaching efficiency and also between the variables of teacher adjustment and teaching efficiency. Raina (1983) revealed that student teachers have more favourable attitudes towards teaching than the inservice teachers. Schorn (1976) concluded that attitude change about mainstreaming children with special needs was affected by numerous factors. They included the inservice format, the characteristics of the instructor, the characteristics of the participants, nature of the problem, nature of the change desired and the nature of the situation where the change was to take place. Purifoy (1980) concluded that the follow-up programme within a short period of time after completion of their initial training has a positive correlation with the encouragement of teachers for their teaching practices. McLaughlin and Marsh (1978) and
Joyce (1980) added that the successful implementation of the inservice education and training programme is better to be supplemented with written statements, packaged materials and lectures from experts.

Lippitt and Fox (1971) concluded that the main factor responsible for low esteem in which inservice education is held by many teachers is its uncoordination of the working in this field. According to Eraut (1985), "Various forms of coordination are becoming an area which is ripe for future research." Guskey (1979) proved that the degree of positive change in student learning outcomes does appear to determine the degree of change in teacher's perceptions of responsibility for student learning.

The results of the study by Joslin (1980) indicated that inservice education is effective in changing attitudes of the teachers resulting in improvement of their skills and achievements. Bass (1980) also concluded that the techniques learned by the teachers during their inservice education programme contributed to change in pupil achievements.

Jarrettte (1980) concluded that inservice training
produced a positive change in teachers' pedagogical knowledge in the experimental group.

In the light of the aforesaid findings, it is obvious that in-service education and training does contribute to the various dimensions which may further be classified into process variables, structure variables and product variables. These variables contribute towards the quality of education. Hence it is quite apparent that the professional competency of the teachers, to a greater extent, depends upon the degree of success achieved in in-service training programmes. The success of the teacher, on the other hand, is the product of his inherited capacities, his knowledge in the field concerned and acquired skills and practical experience in the profession. Product as outcome of an activity depends mainly upon the structure in hand and the processes employed therein.

Barr (1948) has classified teacher effectiveness criteria on the basis of methodology used in obtaining the criterion measurements, that is, student teaching marks, principal's ratings or observations of teacher behaviour. Reamers and others (1952, 1953) suggest that criteria may be classified as either ultimate or proximate.
Thorndike's (1949) classification of criteria is in terms of immediate, intermediate and ultimate. Kelley and Fiske (1951) classified such criteria according to goal proximity as (a) product criteria, (b) process criteria and the (c) presage criteria.

In the present study the three types of criterion measures, viz. process variables, structure variables and product variables, have been used.

**PROCESS VARIABLES**

Process variables are described and measured in the teaching rooms in terms of conditions or typical situations involving the classroom interaction of the teacher and the taught. Flanagan's (1954) method for development of process criteria of teaching effectiveness is quite promising. However, in the present study the impact of inservice training upon professional competence and educational awareness of teachers has been studied in terms of any relative change in teaching effectiveness and educational awareness of teachers which are considered as process criteria.

**STRUCTURE VARIABLES**

Structure variables imply an idea of personal inherent qualities of the teacher who is receptive to
the effects of the environment all around. These variables are comparable with the presage criteria having been used in studies in teaching effectiveness. Presage variables discussed as criteria are four in number, viz. (1) teacher personality attributes, (2) characteristics of teachers in training; (3) teacher's knowledge and achievement; (4) inservice teacher status characteristics. However, Eraut (1985) has made an alert about the most appropriates of the prevalent structures and practices in the field of inservice education. And the structure variables taken in the present study are: (1) teacher attitude and (2) rigidity and flexibility, which are considered as criterion measures for studying the impact of inservice training upon professional competency of teachers.

**PRODUCT VARIABLES**

Educationists have long believed that one of the more relevant criteria of teaching competence is pupil change in terms of gain or growth in learning. Product criteria depend for definition upon the teaching goals which are most economically stated in terms of changes in student behaviour. Rabinowitz and Travers (1953) and Ryans (1949, 1953, 1957) as well as Remmers (1952, 1953)
have given convincing arguments in favour of assessing teaching effectiveness through such effects on student gains. Ryan (1952) while discussing teaching effectiveness has pointed out the difficulties in this regard as (i) multiplicity of change; (ii) pupil maturity and (iii) other influences. Besides, some negative factors such as lack of directions and guidance from administrators and supervisors, interferences from social and political pressures groups, ambivalent feeling of society towards the role of teachers, frustration of teachers with their status and service conditions etc., hamper the professional growth of the teachers. On the other hand, there are some other factors like (i) increase in the teaching experience, (ii) betterment of academic and professional qualifications, (iii) any special incentive like state award or national award and (iv) mutual discussion among the faculty members etc., which contribute towards the professional growth of the teachers. Due to the influence of such factors, it becomes difficult to ascertain the exact outcome of inservice training alone. However, the product variables in the present study are: (i) school results of the teachers and (ii) scores on achievement test for teachers.
Besides an opinionnaire to study the impact of physical structure of inservice institutions on teaching competence and a questionnaire to study the comparative impact of inservice training on professional competency were used.

It is, of course, clear that neither process measures nor product nor structure variables alone can explain successfully the impact of inservice training programme for determining teaching competence of trainees who are exposed to such educational environments. Hence the issues relevant to successful educational environment with respect to process and structure variables in the present problem entitled "Development of professional competency of social studies and mathematics teachers as related to process and structure variables of educational environment in Government Inservice Training Centres," which are emerging out of the foregoing discussion are given as follows:

1) What are the criterion measures of professional competence of teachers?

2) Is there any unique combination of process or structure variables that can contribute maximum to the development of professional competence of teachers?
NEED OF THE STUDY

The study of the process and structure variables as determinants of professional competency of the teachers exposed to inservice training seems to be a positive step towards the qualitative improvement in the field of education. In this regard, All India Council for Secondary Education which was established in 1955 and charged with the responsibility of bringing about qualitative improvement in education at the secondary stage had accepted educational extension as one of the chief measures for the fulfilment of its goal and adopted this measure as a hypothesis that it should bring about qualitative improvement in secondary schools.

Education is undergoing revolutionary changes now-a-days. According to Taba (1968), "These changes are profound enough to cause a serious gap between what teachers are now doing or can now do and what is expected of them. Furthermore, if one considers the continuing explosion of knowledge in all content fields and in the use of the media of educational technology, it seems that the need for retraining of teachers will be continuous rather than a temporary phenomenon."
Inservice training has to play a vehement role in the context of new dimensions of rapid shift in all aspects of education today. It has to implement change generated elsewhere and act as an agent of change in particular school systems. Techniques and organizational patterns of inservice training need be updated in the would-be-context of tomorrow. Only a scientific analysis of both the current and the anticipated needs of inservice training can help improve the planning and functioning of training programmes. Taba (1968) again stressed, "Inservice training is needed not only for the teachers who had entered the profession sometime ago but also for the teachers who are entering the profession now partly because the teacher education institutions are slow to respond to change and partly because the introduction of innovations on all fronts of education will cause a rapid obsolescence in teaching techniques, no matter how adequate the pre-service preparation." The same idea was put forth in "Challenge of Education - A Policy Perspective' (1985) as:

"There is general acceptance regarding the need for reform of pre-service teacher training arrangements and also an increasing realization regarding inservice training or continuing education of the teaching community."
National Policy on Education (1986) has also highlighted the importance of inservice education as it is considered in it that teacher education is a continuous process and its pre-service and inservice components are inseparable and that in the new programmes of teacher education, special emphasis is sure to be given to the continuing education.

Honorary Director of Extension Programmes for Secondary Education (NCERT) held a conference with Coordinators of Extension Services Departments in the year 1962 for assessing the work of the extension service centres/units working under its control and recommended:

"There should be a continuous evaluation of the programme of each extension centre in order to find out how far the main objectives for the establishment of the centres were achieved and also to locate the obstacles that hinder their achievement."

Following these recommendations, a countrywide assessment was carried out by NCERT through its sixteen assessment teams, one for each state. Major findings of the study were that the administrators were of the opinion that most valuable advantage derived from the inservice
activities of the extension centres was teacher growth in terms of subject matter, competency, new methods and techniques and increased professional interest, and that reliance should also not be based on just one formal assessment but it should be the continuous concern of all personnel using variety of techniques, and that case studies also contribute towards the understanding of the progress of the programme. In the case studies, the emphasis has to be laid on relatively cause and effects such that it tends to indicate what variables seem associated with each other and even to state the findings about processes involved that may have wider applicability. Thus it was realised that the existing processes and structures involved in inservice education need to be studied.

According to Corrigan (1979), "There is almost universal consensus among all persons involved that most inservice efforts are relatively ineffective." But Bolam (1980) had expressed his opinion as, "However, since the early 1970's there has been a considerable advance in thinking. There have been several notable experiments with new styles and approaches and the identification of key problems and issues in several
countries has been assisted by a long series of conferences and reports promoted by the Centre of Educational Innovation of the Organisation for Economics, Cooperation and Development." Eraut (1985) attracted the scholars towards research work to be done in the area of inservice education as he remarks, "This is an area where much more research is needed together with independent evaluation of some of the more interesting innovations which tend only to be reported by their proponents."

In 1975, the State of the Punjab had opened three Government Inservice Training Centres located one in every division at Patiala, Jalandhar and Ferozepur respectively. Since that time, no concentrated effort has been made to find out the efficacy of the inservice training programmes going on in these inservice training centres in the Punjab so far. Thus the need was felt to find out the effectiveness of the existing inservice education programmes in terms of process, structure and product variables as criterion measures of professional competency of teachers. New vistas of knowledge are likely to crop up in this field.

DELIMITATION OF THE STUDY

There is a variety of factors which seemingly
appear to be determinants of institutional effectiveness of inservice training centres for determining professional competence of teachers but it is not possible to consider these factors analytically and in a multivariate global way so as to arrive at a meaningful constellation of such determinants as go with professional competency of teachers in inservice training. Hence the present study is delimited in scope by the following considerations:

1. The investigation is confined to a study of only 480 teachers including males and females.

2. The investigation has been confined to two inservice training institutions, viz. Patiala and Jalandhar.

3. The study is delimited to two process variables, namely, teacher effectiveness and educational awareness of teachers; two structure variables, i.e., teacher attitude and rigidity-flexibility of teachers and two product variables, namely, two achievement tests (one achievement test to be used for social studies teachers and the other for mathematics teachers) and school results of the teachers. However, in the case of teachers exposed to inservice training, an opinionnaire was used
to study the impact of physical structure of inservice institutions on teaching competence and a questionnaire was used to study comparatively the impact of inservice training programme upon professional competency of social studies and mathematics teachers of Patiala and Jalandhar.

4. The study as will be evident from the subsequent chapters, has been delimited with regard to the selection of sample, methods and statistical techniques.

OBJECTIVES OF THE STUDY

1. To find out the comparative efficacy of inservice programmes organised respectively for social studies and mathematics teachers separately at Patiala and Jalandhar.

2. To study the relative impact of educational environment upon the teaching effectiveness of social studies and mathematics teachers exposed to inservice training and that of the teachers unexposed to any such training.

3. To study the relative impact of educational environment upon the teaching attitude of social studies and
mathematics teachers having undergone the inservice training programme and that of the teachers not having undergone any such training.

4. To study the relative impact of educational environment upon the rigidity-flexibility of social studies and mathematics teachers exposed to inservice training and that of the teachers unexposed to any such training.

5. To study the relative impact of educational environment upon the 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. To study the relative impact of educational environment upon the achievement of social studies and mathematics teachers exposed to inservice training and that of the teachers unexposed to any such training.

7. To study the relative impact of educational environment upon the school results of social studies and mathematics teachers having undergone the inservice training programme and that of the teachers not having undergone any such training.
8. To make the comparison of 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. To make the comparison of 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. To make the comparison of 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. To make the comparison of 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. To make the comparison of 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. To make the comparison of 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. To study the impact of process variables upon the teacher achievement as the measure of professional competency.

15. To study the impact of process variables upon the school results of the teachers as the criterion measure of professional competency.

16. To study the impact of structure variables upon the teacher achievement as the measure of professional competency.

17. To study the impact of structure variables upon the school results as the criterion measure of professional competency.

18. To find out the relative impact of physical structures of inservice institutions upon the criterion measure of professional competency.