CHAPTER - TWO

REVIEW OF LITERATURE

REVIEW OF LITERATURE

2.1 INTRODUCTION

Since 1930 when researches in educational psychology started gaining momentum, the psychologists and educationists went ahead concentrating their efforts to know the question of what makes a teacher effective. While the researchers tried to find answers to this question on variables such as teacher personality, his education, age, experience, sex, socio-economic background etc., they could not agree upon an unified criterian on which to evaluate the effectiveness of the teacher on the basis as to what is believed traditionally the good characteristics of a teacher are present in him or not. Later on they tended to rely on whether students secured more marks or not in the subject taught by the teacher. Gradually they started realising the importance of teacher in shaping the personality of the students, of which getting marks in the examinations is only a part. Thus the Expert Committee on the criteria of teaching effectiveness appointed by the educational research association 1952-53 stated that the teacher effectiveness must ultimately be defined in terms of effects on pupils more specifically of changes in behaviour.

Thus a teacher could be judged to be effective or not on the basis - what his students are after interacting with him minus what they were before they came in contact with him. Since this dictum has been accepted, a number of investigators attempted

to identify the behaviours of teachers which have desirable or effective impact on students in shaping their personality and those behaviours which develop in turn undesirable characteristics among students.

These are some researches done with observational techniques to assess the spontaneous behaviour of the teachers. The analysis of the spontaneous teacher behaviour involves the development and standardization of a system of categories that an observer can use to note the frequency of qualitatively different acts.

The ultimate goal of studying teacher influence in the classroom is to understand teacher-pupil transaction and in particular to specify conditions in which learning is maximized. To study this, researches were conducted in classroom climate. The word classroom climate refers to generalised attitudes towards the teacher and the class that the pupils share in common inspite of individual differences. The attitudes which are developed due to outgrowth of classroom activities, pupil soon develop shared expectations about how the teachers will act, what kind of person he is, and how they like their class. These expectations colour all aspects of classroom behaviour creating a social atmosphere or climate that appears to be fairly stable, once established.

Researchers have shown relationship between several dimensions of teacher behaviour and the various criteria of teacher effectiveness. One tendency shown is to be friendly,

warm, supportive, non-threatening and emphatic. Teachers who exhibit this tendency are thought to be more effective because they produce inter-personal relations favourable to learning in their classrooms.

2.2 EARLY RESEARCHES

An examination of several of the many research studies dealing with classroom interaction analysis and modification of teacher behaviour, and teacher effectiveness, may help in finding out a number of variables of teacher behaviour related to affective aspect as well as cognitive aspect of teaching-learning process. Anderson (1945, 1946, 1959) might be considered as one of the pioneers in researching the affective environment of the classroom. Withall (1949, 1951) pointed to importance of the social and psychological climate of the classroom. He categorized the teacher statement into seven classifications and came to conclusions that:

i) Dependence of the learner upon the teacher is not desirable,

ii) Offering opportunity for the learner to make free choices is desirable, and

iii) With the verbal expression of understanding by the teacher, problem - solving is enhanced.

Perkins (1951) discovered that differences in social-emotional climate of the classroom promoted significant difference in group learning. Medley and Mitzel (1959) reported

positive correlations between the emotional climate of classroom and rapport in pupil and teacher and group problem - solving. Investigations of Burell (1951) and Beauchamp (1952) showed that pupils exposed to teachers trained in group processes and emotional needs of children made greater gains in achievement than the pupils exposed to teachers not so trained. Studies by Furst and Amidon (1962, 1965) and Giammatteo(1963) were related to the teaching styles of teachers. Investigations by Amidon and Giammatteo (1965) and Soar (1966) revealed that teachers with more indirect teaching styles produced greater evidence of growth in reading comprehension. Powell (1968) found similar results in arithmetic achievement. Furst (1965) discovered a positive relationship between greater achievement and: (i) indirect teacher influence, (ii) amount of student talk, at an average rate of teacher-pupil interaction.

The results of Flanders' (1960-a) first studies revealed that pupils learned more from indirect than from direct teachers. Weber (1967) disclosed that pupils of indirect teachers received higher creativity scores than pupils of more direct teachers. Also using pupil's ideas involves powerful affective as well as cognitive components. Emmer (1968) found that teachers who increased their use of pupil's ideas elicited increased pupil initiation. In the study by Soar (1966) teacher's use of pupil's ideas did not have a significant correlation with any of the achievement measures. Similarly Snider (1966) and Furst (1967) did not find significant results. But Lashier (1965) obtained significant results. This variable has not been singled out for intensive study as yet.

Studies related to cognitive aspect of teaching are difficult to compare. Smith and Meux (1963) were two of the first researchers who carefully considered the logical aspects of teaching behaviour whereas Write and Proctor (1961) proposed that mastery of subject matter is a key to teacher effectiveness. Bellack, et al (1963) were concerned with the meaning of language used by teachers and learners in the classroom. Taba and her associates (1964) focussed their research on the thinking process of children. The cognitive aspect of teaching has received comparatively little attention. There are only two aspects namely, the frequency of questions and types of questions which can be isolated in the area of cognitive behaviour. Gonners and Eisenberg (1966), Wallen (1966), Harris et al (1968) and Rosenshine (1969) studied that frequencies of any type of questions were associated with higher achievement. Thompson and Bowers (1966) and Furst (1967) found evidence for the superiority of variation in questioning.

2.3 TEACHER EFFECTIVENESS

2.3.1 Efforts with Little Success :

Orleans and others (1952) found the knowledge of criteria of teacher effectiveness and the means to measure them still missing, despite the large number of studies that have been made. Morsh and Wilder (1954), while reviewing quantitative studies on teacher effectiveness, failed to discover even a single, specific observable teacher act whose frequency of occurence was "invariably and significantly" related to pupil outcomes.

Johnson (1955) found a wide margin of error in evaluation and prediction of teacher effectiveness, despite the overwhelming attention of the research workers it has attracted. Mitzel (1960) pointed out the absence of acceptable criteria of teacher effectiveness. Fattu (1962) lamented that the lack of meaningful measurement of commonly agreed upon teacher effectiveness using predictor or criterion variables has reached a dead end. Medley and Mitzel(1963) considered much of this work on teacher effectiveness as irrelevant either because valid criteria of teacher effectiveness were not used or because objective measures of teacher behaviour were not taken.

There appears to be persistent thaw permeating research on teacher effectiveness. Salient reasons attributed to the prevalent pessimism plaguing the area are given by different reviewers. They are:(i) lack of adequate conceptual framework (Smith,1962; Ryans, 1960, 1963; Biddle, 1964, 1957; Soar, 1964; Gage,1967; and Turner, 1971), (ii) lack of agreement on teacher competence (Orleans and others, 1952; Johnson, 1955; Medley and Mitzel, 1963; Biddle,1964), (iii) absence of objectives and reliable tools to assess teaching behaviour (Ackerman, 1954; Howsam, 1960; Medley and Mitzel, 1963; Biddle, 1964; Soar, 1964), (iv) inadequate Methodology (Orleans and others, 1952; Ryans, 1960; Medley and Mitzel, 1963; Gage,1963, 1967; Biddle, 1964; 1967; and Rosenshine, 1971), and (v) complexity of the problems (almost all the reviewers).

2.3.2 Growing Consciousness :

Growing consciousness about the limitations of research on teacher effectiveness and the compelling need to achieve the much needed break-through to meet the emerging challenge of

teaching effectively stimulated concerted attempts to salvage the complicated problem. It appears that advice of Ackerman (1954), and Medley and Mitzel (1963) regarding the development of reliable and objective tools to observe, record and analyse teaching behaviour was well taken. Recent developments are pregnant with optimism. Gage (1965) justified the review with the hope that recent upsurge in the amount of quality of research on teaching might have rendered the earlier research obsolete. He selected five desirable behaviours which seem to be components of effective teaching. They are: (i) Warmth, (ii) cognitive organisation, (iii) orderliness, (iv) indirectness and (v) problem-solving ability.

Amidon and Simon (1965) reviewed studies on teacher-pupil interaction and the tools used for its measurement. They concluded that there were definite patterns of teacher-pupil interaction in the classroom; that these interaction patterns could be objectively measured and characterised; that achievement, perception, and classroom climate were apparently related; and that the relationship between teacher personality and teacher behaviour was uncertain. Flanders and Simon (1969), reviewed research on teacher effectiveness from 1960 to 1966, they expressed cautious optimism, marshalling a number of studies showing significant positive relationship between teacher's acceptance and use of ideas and opinions expressed by pupils, on the one hand, and pupil achievement, attitude and other variables on the other.

Rosenshine and Furst (1971) found the process-product studies to be fruitful in generating some of the best variables on relationship between teacher behaviour and student achievement. The reviewers identified eleven such variables. They are: clarity, variability, enthusiasm, task oriented or/and business like behaviours, student opportunity to learn criterion material, use of structuring comments, type of questions, probing and level of difficulty of inspiration. The review also gives limitations of the work accomplished and outlines the directions along which second generation of research workers should direct their efforts.

2.4 REVIEW OF REVIEWS

Bennett in his book Teaching Styles and Pupil Progress (1976), under heading Does Teaching Style make a difference, had mentioned some review of reviews that: Gage and Unruh (1967) among theorists of different persuations who talk past each other in seemingly autistic disregard of what the others say'. This effect can be seen in recent reviews of research on teaching. Dunkin and Biddle (1974), although addressing their book to students of education who seek scientifically derived knowledge about instruction, restrict their review to systematic observation of teaching inclassrooms. Similarly Medley (1972), in tracing the history of research on teacher behaviour, deliberately excludes experimental evidence arguing that experimental studies generally ignore differences in teacher behaviour other than those prescribed by the method adopted, or to best regard them as a source of error, and claimed that such an approach is not likely to add to our understanding of teacher behaviour and its effect on pupils.

The term 'experimental and comparative survey are both used rather loosely to refer to studies on teaching in which classroom observation has not been undertaken. In experimental studies the researcher is ideally able to compare the performances of random or matched samples of pupils in relation to specified differences in teaching behaviour. This is not true of comparative surveys.

2.4.1 Systematic Observation :

Researches on teaching has had a respectably long but, according to Gage (1972), a regrettably inglorious history. In sketching this history Medley (1972) discerned three phases. The first of these phases, extending from the beginning of the century to the early thirties, was concerned with factors involved in effective teaching. In the earlier studies students were requested to describe their most effective or best teachers. The culmination of these studies were lists of characteristics of 'good' teachers. This line of research was not particularly successful, possibly because the typical student has no more insight into the dynamics of teaching effectiveness than anyone else. Researchers then turned to the opinions of educational experts, thereby producing other lists of 'good' teacher traits, which were even less useful than those produced by students.

A third approach was the use of rating scales. Among the most popular areas rated were instruction, classroom management, and professional attitude. The limitations of this approach were that there was little consensus about the areas to be rated, or about the behaviours thought important in any given area.

The second phase identified by Medley was a dormant, interim period, lasting until the early 1960s. But the explosion of interest did not take place for another twenty five years.

Hundreds of studies were carried out on the problem of teacher effectiveness in the period covered by these two phases, but they yielded disappointing results, and were usually lacking in educational or psychological meaning. Gage (1963) and Wallen and Travers (1963) both concluded that change in pupils seemed largely uneffected by style of teaching. In other words there was little evidence that teaching methods made any difference (Baldwin 1965, Stephens 1967).

There are four classes of variables; presage, context, process and product. Mitzel argued that the best hope of improving research on teaching lay in the study of process variables, and this appears to have been largely accepted by most researchers in this area. So too has the premise that measures of pupil growth are the ultimate criteria for research on teaching effects (Rosenshine and Furst, 1973).

The problem with reviews is that all studies are considered together, irrespective of the age and sex of the samples, the type of content covered, and the product measures used, the implicit assumption being that there is one best way of teaching everything to everybody. What follows is therefore a resume of research restricted to the context of this investigation - process - product studies at primary level.

All the studies mentioned in this resume were carried out in the United States, which reflects the greater emphasis on this type of research in that country.

This would seem to indicate that the relationship between teacher behaviour and pupil growth could vary by grade level, and there is other evidence to support this argument. In Flanders research, studies using upper grade students tend to show a positive relationship between teacher sustained acceptance of pupil ideas and pupil cognitive growth, but in a second grade came a negative relationship at first and third grade.

There are also indications that there may be an interaction between teaching style and ability levels. Schantz (1963) found that high ability pupils exhibited greater growth under indirect than direct teaching, while there was no difference in the effect of teaching style for low ability pupils. Calvin, Hoffman and Harden (1957) also found that permissive teaching led to greater growth for high I.Q. pupils, but handicapped subjects with average I.Q.

The evidence from observational studies at the elementary level can be summarised as follows :

(1) Although the evidence is equivocal it would appear that indirect (and/or less hostile) teacher behaviours are generally more conducive to pupil growth on most achievement measures.

(2) There is a possibility that these relationships may vary or be non-linear, depending upon (i) the task complexity

of the achievement measure (ii) grade level and (iii) level of ability of pupils.

(3) There is evidence that these relationships may be mediated by the anxiety level of the pupil.

(4) Indirect teaching behaviours appear to generate more positive attitudes to school and school work.

2.4.2 Experimental Studies :

To disregard such studies is to disregard many investigations relating teaching method to educational outcomes, since a number of experiments have compared progressive or activity schools with their traditional counterparts. The most extensive of these was conducted under the auspices of American Progressive Education Association in the period 1933-39, though this study concentrated on students in secondary and tertiary education.

One set of experimental studies has attempted to assess the interaction between pupil personality and teaching styles. (Bracht and Glass, 1968; Groanback and Snow 1969; Bracht, 1970; Berlinger and Cahen, 1973; Gustafsson, 1974). So far results have generally been disappointing, Trown (1973) found little evidence of interactions between teaching method and extroversion. There is evidence to indicate that extroverts perform better in unstructured discovery treatment and introverts in highly structured ones. Such interactions are thought to be one reason why compurisons between teaching methods in the past have produced results indicating no difference. It is not that the different methods are interchangeable, rather that

each is successful and unsuccessful with different kinds of pupils (Leith, 1972).

2.4.3 Pre-Service and In-Service Teacher Training :

A number of investigations are centered on the use of interaction analysis with student-teachers and in-service training programme (Flanders, 1960 (a), Storlie, 1961; Flanders 1963; Hough and Amidon, 1964(a), 1964(b), Kirk, 1964; Amidon, Furst, Simon, Hough, Kirk and Zahn, 1965; Amidon, 1966; Hough and Ober, 1965; Moskowtiz, 1966; Simon, 1966; and ober and Hough, 1967; Zahorik 1968; Mood, 1972; Calonico, 1972; Moskowitz and Hayman, 1974. Generally the results of these investigations indicate that student-teachers trained in the use of interaction analysis; (i) stimulate a greater amount of student initiated verbalisation; (ii) offer fewer directions; (iii) utilize more indirect teaching pattern; and (iv) more frequently accept and use pupil ideas.

Teacher educators and researchers who are involved in pre-service and in-service education of teachers want to know whether the training to increase the use of certain behaviours and decrease the use of others results in modification of teacher behaviours or produces gains in pupil's learning. For answering these questions, experimental studies must be conducted and reviewed. But certain types of experimental studies are relevant to this question, in which: (i) a number of teachers were trained to teach a class of pupils in a certain manner; (ii) observational measures were obtained to verify that the teacher behaved as intended; and (iii) and of experimental measures were obtained.

2.4.4 Classroom Experiments in Indirect Teaching :

Some relevant experiments, such as those by Amidon and Flanders (1961) and Schantz (1963) were conducted. As only one teacher was used in those experiments the findings could not be generalised to teacher training programme. Rosenshine (1970) has reviewed the following four studies which meet the above criteria.

In the study by Miller (1964, 1966) four teachers each taught four lessons in a "responsive manner" and in a "Directive manner". Findings relate that the pupils in the responsive conditions viewed the lessons more favourably and exhibited significantly higher levels of thinking than did pupils in classes taught under the directive conditions.

Gunnison (1968) made an experiment with ten student-teachers whose teaching styles were predominantly direct. The five randomly selected teachers in the experimental group received six-hours of instruction in interaction analysis. The experimental teachers used significantly more indirect influence and had classrooms with significantly more student talk. The pupils in the classes or experimental teachers gave them significantly higher ratings on eight of fifteen items on the attitude questionnaire.

In a study by Herman, et al (1969) ten teachers were selected, teachers were matched according to I/D ratio and divided into two groups. Each group taught six week long

two social studies units; one unit was taught in a teacher-centred manner and the other unit in pupil-centred manner. Direct observation confirmed that the treatments were operative at least two-thirds of the observed time. The trend appeared to favour teacher-centred instruction in one unit and student-centred instruction in the other unit.

Carline (1970) experimented with elementary school teachers. They were trained to use more indirect teaching behaviour. The in-service programme was successful in modifying the behaviour of the experimental teachers toward more indirect teaching but there was no significant difference in the achievement of pupils in both the groups. These experimental results stand in sharp contrast to the conclusions which Flanders and Simon (1969 (a), 1969 (b)) drew from correlational types of studies.

Although the results of these experimental studies on indirect and direct teaching are disappointing, it is through experimental studies that it may be determined whether teacher training procedures lead to modification of teacher behaviour and enhanced student achievement (Rosenshine, 1970).

2.4.5 Presage and Process Variable :

After an observer has watched some teaching and wishes to make a suggestion, it is difficult to decide what can be said to the teacher in order to help him act differently during his next performance. How are the observations to be recorded? How can they best be displayed so that the

trainee can understand? How much change occurs from one trial to the next? Here the presage variables are one or another kind of training programme, kind of feedback, or pre-teaching experience. The process variables are measures of teaching behaviours (Flanders and Simon, 1969-b).

Flanders and others (1963) investigated the effects of teaching experienced teachers how to analyse their teaching behaviours using interaction analysis. The purpose of the project was to increase the flexibility of teacher influence, to increase the use of those teacher behaviours which support pupil participation in classroom learning. The two in-service programmes were differently administered through two different types of role the instructor was to perform. It was hypothesized that a teacher would gain most from in-service training when his type of teaching was compatible with the one used by the training instructor. The teachers spent thirty hours in formal training sessions. Feedback was provided on the basis of interaction analysis. One training programme was shown to be more effective in producing change in most of the teachers than the others.

2.4.6 Conclusion :

Thus reviews of research on teacher effectiveness started with efforts with little success persisting for a long time. But in the recent years, an growing consciousness in the reviews is discernible. However, these reviews also have stressed the need for more work in the area of teacher effectiveness. A number of studies cited above report effective use of feedback based on interaction analysis, in modifying the behaviour of the

pre-service and in-service teachers in the intended direction. This implies that the Analysis of Classroom Transaction training envisaged for the present study should take into account the rationale provided by the research efforts reviewed above.

2.5 STUDIES IN INDIA

Educational research being still in its infancy in the country, classroom research is yet in its embryonic state in India. It is only in recent years that the studies based on systematic classroom observation have been initiated. Related to the problem and process of teaching, research studies have been conducted to investigate into the causes and consequences of teacher behaviour. Below is given an overview of such studies.

Teaching behaviour studies include the input-process-output ideas. The input or presage variables relate to the teacher or pupil characteristics which are supposed to pay a role in the teaching-learning process. The variables that pertain to the interaction between the teacher and the taught in the classroom are referred to as process variables. The output or the product variables deal with the extent of achievement of pupils on various dimensions like achievement in knowledge, gain in skills, change in attitude, etc., which occur as a result of the process in the classroom. The studies under teacher behaviour have been divided and presented in order to provide greater clarity.

2.5.1 Presage Studies :

The studies by Adaval (1952) and Kaul (1972) fall under this category. Adaval (1952) aimed at finding out the specific qualities needed to make the teacher successful in the profession and the motives of persons to take up teaching as their profession. The study revealed that intelligence was an important factor in determining one's aptitude for teaching. Kaul (1972) studied the differentiating personality traits and values of popular and not popular teachers. The popular teachers distinguished themselves as more outgoing, intelligent, emotionally more stable, sober, venturesome, toughminded, shrewed, placid, controlled, and relaxed. They were significantly high on theoretical, social, political, and religious values and were significantly low on economic and aesthetic values.

2.5.2 Process Studies :

The studies of Roy (1970), Mehta (1972), Pangotra (1972), Singh L.P. (1974), and Vasishtha (1976) which fall under this cluster, have concentrated on process variables. All other studies except that of Mehta (1972) attempted to modify the teacher behaviour in the predetermined direction. In this attempt, Roy (1970), Pangotra (1972), and Vasishtha (1976) have used the Flanders Interaction Analysis Category System (FIACS) as the research tool. The results indicated that it was possible to change the teacher behaviour by using the FICAS. Singh (1974) has gone a step further by not only using FIACS but also trying to compare its efficacy with the

microteaching technique. He found that the microteaching technique was more effective in changing the teacher behaviour than FIACS, when the criterion was indirect teacher behaviour.

Mehta (1972) factor-analysed the teaching ability of 489 pupil-teachers of Maharashtra. 'Teaching ability' found as a factor highly loaded with achievement variables of training.

2.5.3 Presage - Process Studies:

The studies which have attempted to establish a link between the presage variables and the process variables have been clustered under this. Dosajh (1956) attempted to show that imagination and maturity were indicative of success in the teaching profession. Suraj Balram (1965) attempted to find out the relationship existing among teacher trainee's intellectual efficiency (IE), self-acceptance (SA) and teaching skills (TS). The study showed that the coefficient of correlation was significant between IE and TS with respect to predictive value. Deva (1966) tried to find out the status of intelligence, social adjustment, personality adjustment, socio-economic status, and academic achievement as the predictors of teaching ability. The beta coefficients for the different predictors were found to be 0.0855 (intelligence, not significant), 0.3627 (social adjustment) and 0.1506 (academic achievement). Singh (1970) aimed at locating certain intellectual and non-intellectual variables related to the teaching skills of the teacher trainees. The predictors of performance in teaching skills were found to be ascendance, extroversion, intelligence, and early academic

achievement. Debnath (1971) tried to find out some determinants of teaching efficiency. The coefficients of correlation between the teaching efficiency and age, experience, academic achievement, and training were found to be 0.21, 0.24, 0.19 and 0.31 respectively.

Samanta Roy (1971) tried to find out the nature of relationship among teacher attitude, teacher adjustment and teaching efficiency. He found that (i) the Pearson's r of 0.49 between teacher attitude and teacher adjustment was significant, and (ii) teacher attitude and teacher adjustment were each related positively to teaching efficiency.

Quraishi (1972) studied the relationship between four dimensions of teacher behaviours, viz., proportion of indirect behaviour to direct behaviour - I/D ratio, proportion of motivating behaviour to controlling behaviour - i/d ratio, proportion of teacher behaviour to student behaviour - T/S ratio, and teacher behaviour of accepting student's ideas and student initiation, with certain personality traits and attitudes of teachers. He found that the personality of the teacher did not relate to his/her teacher behaviour in the class. Santhanam (1972) studied the relationship between teacher's age, recency of training, experience, sex, marital status and the subject taught by the teacher with the indirect behaviour of the teacher in the classroom. The investigator concluded that age, recency of training and experience did not relate to indirectness of the teacher in the class, whereas sex and marital status did affect some aspects of indirectness. Also subject taught affected indirectness of the teacher in the class.

Gurbaksh Lal (1974) studied the effects of creative thinking and vocational anxiety on the success in teaching of 300 teacher trainees. He found that (i) high vocational anxiety was inversely related to teaching success, (ii) interaction effect of vocational anxiety and creative thinking on teaching success was significant. Nair (1974) aimed at finding out the impact of certain sociological factors like family background, caste, religion and sex on teaching ability of teachers. The study revealed that age had a positive relationship with teaching ability, whereas teacher's parental socio-economic conditions had a negative influence on teaching ability. Sex, locality of the school, caste and religion were found to be not affecting the teaching ability. Singh S.K. (1974) aimed at determining the relationship between observed behaviours and measures of teacher's attitude of student-teachers. He found that there was a significant relationship between attitude towards teaching and the various components of classroom verbal interaction as measured through FIACS.

A look into the studies under this category indicates that more than one type of tools are used to measure the process variables. Nevertheless broad generalisations would be risky in the absence of replications.

2.5.4 Process - Product Studies :

Studies under this category have attempted to find out the effect of the process treatments on the product variables.

A study conducted by Government college of Education, Jabalpur (1971) aimed at finding out the developed attitude of the pupils towards teachers who used indirect influence and those who used direct influence in the class. The study revealed that there was a trend, though not significant, among pupils to like teachers who used direct influence. Jangira (1972) studied the relationship between the 'Classroom Behaviour Training' imparted to the student teachers and the performance of pupils under their charge on adjustment to home, school, teacher and peers, their dependency level and classroom trust behaviour. It was found that pupils, taught by teachers who were trained to be indirect, scored higher on adjustment to school, adjustment to teacher, general adjustment, dependency, and classroom trust than pupils taught by teachers who were trained by conventional methods. Patel (1974) investigated into the effectiveness of the influence of teacher's classroom behaviour on pupil's personal anxiety, motivation and classroom organisation, attitude towards reward and punishment, attitude towards teacher, attitude towards school and the classroom climate and the development of independent behaviour on the part of pupils.

The three studies discussed above have investigated into the affective domain of the product variables.

The studies given below which happen to be experimental ones, have investigated into the cognitive dimensions of product variables. Lulla (1974) involved the teachers and students of municipal corporation schools of Baroda city to find out the

effects of teacher's classroom influence upon the pupil's achievement. The study revealed that the pupils taught by teachers trained to be indirect achieved higher than pupils taught by teachers trained otherwise. Roka (1976) experimented with nine inservice science teachers to find out the effect of certain verbal teaching behaviour patterns on the pupil's achievement at knowledge, understanding and application levels.

From the above studies an inference can be made that indirect teacher behaviour has a positive role in the development of certain affective, as well as cognitive abilities of the pupils.

The experimental studies by Sharma (1972) and Padma (1976) attempted to find out the effect of different teaching patterns on the cognitive attainment of pupils. Sharma (1972) found that a teaching pattern which involved narrow questions was more effective, than other teaching patterns in attaining the knowledge and comprehension objectives. It was not possible for both the investigators to identify a pattern of teaching which was superior to others in attaining the application objective.

2.5.5 Presage - Process - Product Studies :

Alone study under this heading happens to be that of Sharma (1971). It aimed at studying the relationship between characteristics possessed by teachers, and teacher effectiveness with a view to predicting teacher success. The product criterion happened to be the pass percentage of the students taught by the teacher. FIACS was used to observe the classroom interaction.

It was found that the teacher talk seemed to have negative correlation with scores on the Pandey's Teaching Aptitude Test and academic grades. The combination of five predictors, namely teaching aptitude, academic grades, socio-economic status, teaching experience, and age in order of their arrangements, appeared to be sound predictors of teacher effectiveness.

Studies abroad and studies in India regarding analysis of teaching behaviour, providing feedback and modification of teacher behaviour to be effective, mostly have used Flanders Interaction Analysis category system as a tool for the purpose. But in recent years many have closely examined the system and found some weaknesses. According to Gupta and Sharma (1977) who reviewed the system, have revealed that the system has some limitations. These are:

i) Flanders Interaction Analysis Category System (FIACS) does not give a complete picture of classroom happenings. Flanders (1970) himself admits that FIACS is an inappropriate tool when the verbal communication is discontinuous.

ii) Flanders has emphasised the recording of only spontaneous interaction. Since a teacher's role is to provide situations for better teaching and learning in the classroom, much of the interaction in all the situations may, best, be described as being 'deliberately' or 'apparently' spontaneous. Hence, the assumption that the interaction is spontaneous in the classroom is doubtful.

iii) Fifty to eighty percent of all that goes on within a classroom as spontaneous verbal interaction is nothing but the teacher's lecture. As it is, all types of teacher talk - whether meaningless or meaningful, relevant or irrelavant, narrow or elaborate, are categorized under 'lecturing'.

iv) The occurrence of tallies in some of the Flanders categories is very low and their accurate coding is difficult. Flanders (1970) has himself drawn the attention of researchers towards the rare occurrence of tallies in category, due to the difficulty in identifying the acceptance of emotional tone of the students even by a trained observer.

v) The meaning and interpretation of results from FIACS are not free from cultural variations. For example, rare occurrence of tallies in category 1 is attributed by Flanders himself to the fact that most persons in our 'culture' (teachers and pupils) tend to suppress both positive and negative emotional reactions in the classroom. Similarly, the pupil's initiation in a country like India is likely to be considerably low as compared to pupil initiation in the western countries because of the cultural traditions which emphasise passivity and obedience on the part of the learner even if he is dissatisfied with the teacher.

vi) Category 10 (Silence and Confusion) does not discriminate "pause" from "noise" and "confusion".

There are also indications that having got first hand experience from several studies, Flanders did recognize some of the weaknesses cited above, but left the work of improving and mofifying the same to others.

No wonder, negligible attempts have been made to improve it and FIACS in its original formate has extensively been used in analysing teaching verbal behaviour of teachers in India.

In the light of above limitations Harris (1975) developed 'Analysis of Classroom Transactions' (ACTs) with a view to evolve a new set of more discriminating and comprehensive set of indices for analysing teacher verbal behaviour as well as for training the teachers to modify their behaviour. ACTs gives a complete picture of classroom (verbal) happenings as it is tool for training, studying, coding and analysing only the verbal transactions between the teachers and pupils. Shukla (1979) adopted the Analysis of Classroom Transactions Category System for observation of science teachers class. He found that the system was suitable for observation and for analysis of teacher's classroom behaviour in Indian conditions.

2.6 REVIEW OF LITERATURE AND THE PRESENT STUDY

2.6.1 Conceptual Framework :

It is well accepted that research should be guided by theoretical frameworks. The process of teaching is complex. The programme of teacher education is likely to be even more complex. A sound conceptual framework capable of both analysing and synthesising is the need of a researcher. For a

pre-service teacher education programme to be valid, relationships must be established between the treatment delivered in the programme and performance criteria to be valid, they must be shown to be either logically necessary to teaching or associated with pupil learning attributable to teaching. To demonstrate relationships between the performance criteria in teaching and treatments in pre-service teacher education programme, certain strategies should be developed which may help pre-service teachers to modify their teaching behaviour.

The focus on performance criteria is developed firstly, on the basis of the literature available on behavioural objectives in instruction and secondly, through series of experimental studies which have been conducted in teacher education. These studies were designed to determine whether teaching procedures could modify the behaviour of the teacher as measured by systematic observation. The results of these investigations indicated that training procedures which focussed on specific behaviour were more effective than traditional method courses in changing teacher behaviour. Thus, there is emphasis on performance criteria.

The present-day work relies much more on specific behaviour than the earlier approach which was global and was difficult to practise, as the independent and dependent variables could not be pinned down or shifted from one situation to another. The more recent work uses packages and products in the same form and meaning regardless of situation. This is an indication of the contribution of science to the art of teaching. Thus the search for a scientific basis for

teacher education and the improvement of teacher effectiveness is reaching solid grounds with increased support and improved intellectual tools (Gage 1972).

Whatever may be the inadequacies, the sustained research efforts in India and abroad leave a note of optimism for one to look forward to the evolution of science of teaching. On the basis of studies reviewed and the conceptual framework given above. The investigator intended to conduct such experiment so that to apply improved intellectual tool for the preparation of effective teachers.