CHAPTER II

REVIEW OF RELATED LITERATURE
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CHAPTER II

REVIEW OF RELATED LITERATURE.

2.1 Introduction

Innumerable studies have been conducted in several areas and fields of ground dynamics as a dimension of teaching procedures and testing procedures in the classroom. These studies deal with teacher behaviour dimensions, teacher behaviour influences, utility of the knowledge of interaction pattern and characteristics of teachers, classroom socio-emotional climate and factors helpful in teaching skills in the classroom.

The literature surveyed during the course of the present research study revealed that abundant literature on the study of teaching procedures and testing procedures of secondary schools was available. Yet, studies relating to current teaching practices in the classroom in High schools were found to be very few.

There is no end to the scientific investigation in any field of education. The repeated researches in the field of education are even justified on the grounds of different samples, tools, testing conditions and a variety of other independent and dependent variables. The conclusions of such studies may even lead to different results which may, to some
extent, prove to be useful for qualitative and quantitative improvement of education in India.

In India, secondary education under the new pattern may be a terminus for some students. As such, the study of factors associated with the field of the teaching-learning process in the classroom for academic standards is extremely important and worthy of investigation. For any worthwhile study in any field of investigation, the researcher requires suitable familiarity with the research work done in the past, which has a close bearing on the problem of his choice.

According Aggrawal (1975). A detailed review of the related previous investigations implies locating, studying and evaluating the reports of the casual observation of classroom and opinion that are closely related to the individual’s planned research project. In this context, Good, Barr and Scates state: "The competent physician must keep abreast of the latest discoveries in the field of medicine —. Obliviously, the careful student of education, the research worker and investigator—should become familiar with location and use of sources of educational information". Obiviously, the researcher needs to collect upto date information about what has been done in the area of her research project. Such a review enables her to draw all the possible benefits from the previous findings and match her findings with the conclusions drawn
earlier. In the words of Walter R. Borg, "The literature in any field forms the foundations upon which all future work will be built". The author further states that if the work of building this foundation of knowledge provided by the review of the literatures is overlooked the work at hand is likely to be shallow and aimless and will often duplicate work that has already been done by others.

The review of related literature gives the researcher an understanding of the previous work and enables her to know the means of getting to the frontier in the area of her investigation. It also directs the investigator to acquire the insight and foresight she needs to convert her tentative research problem to a concise one. The preliminary survey of the previous studies, literature, discussions, experiences and findings related to the problem under research provides an opportunity of acquiring an insight into the methods, measures, approaches and tools of research employed by the researchers in the past. All these measures in turn may lead to a significant improvement of the research problem under study. Moreover, review of the related studies provides ideas, theories, explanations, descriptives and even the methods of research, which are useful for formulating, studying and solving the research problem at hand.

In the present chapter, the findings of some previous important studies are summerised. A brief review of the related studies both in India
and abroad in the area of the present investigation is being presented hereunder.

2.2 Review of Indian Studies.

2.2.1 Studies on Different Aspects of Teaching

A few researchers in the field of teacher behaviour or characteristics of teachers have been conducted, specially after the publication of the monumental report of the Education Commission (1964-66). Through the Center for Advanced Studies in Education at the University of Baroda many scholars have done research relating to different aspects of teachers, students and classroom situations. The National Council of Educational Research and Training has sponsored researches in many fields of education.

A few studies carried on individual basis are presented below:

Adval (1955) in his investigation made an attempt to collect an opinion of secondary school pupils in regard to qualities which from their point view constituted an ideal teacher. The pupils were asked to write an essay on "My ideal teacher". The topic was such as to enable them to mention qualities on the basis of their personal experiences of an ideal teacher or even describe an imaginary personality on the basis of qualities expected of him. A time limit of 30 minutes was fixed. The pupils were motivated
through a brief introduction. The pupils gave a total of 90 qualities desirable in an ideal effective teacher.

Among the prominent factors that influence the teaching effectiveness, mention may be made of a few personality traits like adjustment, intelligence, anxiety, teaching aptitude, interest in teaching, mental health, teacher’s attitude towards the teaching profession and overall satisfaction in life.

Saxena (1969) made an attempt to study the attitudes and personality of teachers. He used Cattell’s Contact Personality Factor (For‘A’ Hindi version) on 139 teachers in U.P in relation to their teaching competence. A co-efficient of correlation of +.60 with factor ‘H’ and +.42 and +.36 with factor ‘A’ and ‘H’ were obtained, with high teaching competence. These correlations are +.60, +06 and +.36 respectively which show a curvilinear relationship. It shows that a very high score or factor ‘H’ is typical of less competent teachers and only moderately high ‘H’ is characteristic of a mere successful teacher.

Kaul (1972) made a factorial study of a certain personality variables of popular teachers in secondary schools. His objective was to differentiate the personality traits of popular and unpopular teachers. He used Cattell’s 16 P. F. questionnaire. He came to the conclusion that the effectiveness of popular teachers was with respect to attitudes towards teaching, public
examination results of their students and the appraisal of their work as teachers respectively.

Chhaya (1974) compared effective and ineffective teachers with respect to personality adjustment, teaching attitude and emotional stability. Eighty effective and 100 ineffective teachers were selected from 20 randomly selected schools of Kanpur District. Effectiveness and ineffectiveness were known as the basis of high school examination results.

She came to the conclusion that effective teachers had significantly better personality adjustment and favourable attitudes towards teaching. They were more interested in teaching than ineffective teachers, emotionally stable, more authoritarian and extrovert. She found that sex and age of teacher were significantly related to his/her efficiency.

Srivastava (1974) used 16 P. F questionnaire (Cattell's Hindi Version) on 52 pupil teachers and 52 experienced teachers to know the impact of professional experience on the modification of personality traits. He found that the experienced teachers differed on factors A, E, F, H, Q1, Q2 and Q3 from the pupil teachers.

Singh (1974) made a comparative study of the personality profiles of married and unmarried high school female teachers. She derived the personality profiles of these teachers with the help of Cattell's 16 P F questionnaire. The investigator found that the unmarried female teachers
differed significantly on factors A, F, L, O, on factors Q1 and Q4 while
married teachers differed significantly on factors A, C, F, Q from the
general population. Less score on factors Q1 and Q4 were shown by
unmarried female teachers. Married female teachers were less stable
and frustrated (C-). The married and unmarried female teachers were
found to be significantly higher on factors L+ and Q1+. It meant that they
were more suspicious and self opinionated. They were significant on
factors A and F from general population. They were, thus, reserved,
critical, cool, detached, rigid and aloof.

Nair (1974) and Pillai (1979) reported that in general urban teachers
used more verbal feed back both positive and negative, than the
teachers of rural and semi urban areas. Urban school teachers had higher
affective interaction than the rural school teachers and the teachers from
the privately managed schools exhibited more positive behaviour than the
teachers from the schools managed by local authorities.

Gupta R.N. (1977) conducted a study on the personality characteristics,
adjustment level, academic achievement and personality attitude of
successful teacher. The study intended to find out the personality traits
of successful teachers and differentiate them from less successful
teachers. It was found that teaching success was significantly related to
the factors A, B, C, F, G, H, I, L, N, O, Q3, Q4 of personality. The investigator
also found that successful and less successful teachers were different in personality characteristics, adjustment and attitude towards teaching. The personality factors as a group were better indicators of teaching success than individual factors.

Gupta (1979) while studying the factors helpful in class teaching, reported that black board work, correcting oral mistakes, explaining difficult points, general knowledge, hand writing, knowledge of the subjects maintaining discipline, power of oral expression, revision of main points, skill in questioning, the use of material aids were found to be helpful to teaching.

Naidu (1980) had made a study of variations in classroom behaviour of teachers and their relationship to the educational achievement of students in English, Science, and Social Studies.

The Main Objectives of the Study were:

1) to find out the effectiveness of classroom behaviour of teachers and students through an observation schedule process in English, Science and Social Studies in the twin cities of Hyderabad and Secundarabad.

2) to know the depth of teaching, motivating, problem solving, classroom organization, classroom management among the teachers;
3) to know the students achievement in the three subjects; and
4) to know the students assessment attitude on the classroom behaviour of their teachers.

The stratified random sampling technique was adopted for the selection of the sample and observation schedule and rating scale were used for studying the problem. The mean, critical ratio and percentage were used to compute data.

The main findings of the study were:

1) The verbal behaviour of the teacher dominated the classroom situations.

2) There were no significant differences in the pattern of teaching of different subjects and behaviour of teachers of different ages but there were differences in respect of sex, i.e., male and female teachers.

3) There were found differences in problem solving and teaching among the three subject teachers.

4) There were no significant difference in age variable.

5) English medium students had better achievement level than the Telugu medium students in all the three subjects in all classroom situations.
Kirkire (1981) made a study on analysing the impact of objective based lesson plans on the classroom verbal interaction behaviour of teachers and pupils achievements in mathematics.

The main objectives of the study were:

1) to know the effect of teaching upon the pupil's achievement with objective based lesson plans;
2) to know the effect of teaching upon the verbal interaction behaviour of teachers; and
3) to compare the effect of teaching upon the verbal interaction behaviour of different teachers.

The mean, standard deviation, correlation, percentage and analysis of variance were used for computing the data.

The main findings of the study were:

1. There was no significant effect of assignments on the pupil's achievement.
2. The manner in which instructional material was used affected the classroom climate.
3. Indirect teacher behaviour did not help in raising achievement level.
4. The responsive behaviour of teachers was independent of difference between the teachers as well as difference between the classes.


The main objectives of the investigation were:

1) to study the relationship between the teacher's demographic variables (Sex and Age) and the teaching competency;

2) to find the relationship between other presage variables (i.e. teachers attitude towards teaching, interest in teaching, self perception for his teaching behaviour, and intelligence) and the teaching competency at secondary level; and

3) to know the relationship between teaching competency and product variable like academic achievement, pupils liking for teaching behaviour of teachers,

The tools used were the Teachers Attitude Scale (Grewal), The Interest Inventory for Teachers (Grewal), Standard Progressive Matrices, Teacher's Self Rating Scale (Rama), The Pupils Linking Scale (Rama), the classroom observation schedule and achievement test.

The main findings of the study were:
1. The competencies found which shared variance were assignments, loud reading, questioning, managing the class, introducing a lesson, black board use, using reinforcement, avoiding repetition, dealing with pupil's responses, audibility and verbal modes.

2. The male and female teachers did not differ in competence.

3. There was positive significant co-relation between the age and teaching competency of the teacher.

4. There was no significant relation of attitude of language teachers towards teaching, interest, intelligence and teaching competency.

5. There was positive significant relationship between academic achievement and teaching competency of teachers.

Chaube (1985) made the study of teaching efficiency, attitude towards teaching profession and academic achievement of B.Ed. students. He found in his study that

1) There was no relationship between attitude towards teaching profession and teaching efficiency in male and female teachers.

2) There was no interrelationship between attitude towards teaching profession and academic achievement in both the sexes. However their trends were in positive direction.
3) Sex did not play any role in respect of variables (academic achievement, attitude and teaching efficiency) studied in this research.

Muddu (1978) made the study of the prevalent status of instructional procedure in biology in high schools.

The objectives of the study were:

1) To evaluate the facility provided to teachers such as laboratory, audio visuals etc.,
2) To find out the type of instruction adopted in teaching biology in accordance with the concepts envisaged in the syllabi, and
3) To find out the extent to which the instructional procedures met the demands of biology syllabi in the process of reorganising the scheme of secondary education.

The study was designed as a quantitative empirical study. The sample consisted of teachers of 120 high schools teaching biology in classes VIII, IX and X of the twin cities of Hyderabad and Secunderabad.

The variables involved in the investigation were:

(a) The present status of instructional procedures followed by teachers in biology teaching,
(b) The adequacy of classroom instruction to effect behavioural changes in studies in students, and

c) Adequacy of the laboratories, reading material and relationship between the creative thinking abilities (verbal and figural) and some of the devices of the classroom verbal behaviour.

Some of the major findings of the study were

I. High creative teachers increased pupil's freedom to participate by praising, accepting and developing their ideas.

II. High creative teachers processed the content and talked more at convergent, divergent and evaluative levels and less at the factual level.

III. In the classes of high creative teachers, pupils also talked less at factual and more at convergent and divergent levels.

IV. The factual level of the pupil's talk was highly related to the actual level of the teacher's talk.

V. The classroom verbal behaviour of the teacher trainees could to some extent be predicted by creative thinking abilities both verbal and figural combined, and particularly by the verbal originality scores.
Dubey (1979) made an investigation into the relationship between pupil characteristics and classroom behaviour of teachers.

The aims of the study were –

i) to present a detailed process of interaction analyses and its application in the mathematics class of high school,

ii) to interpret pupil characteristics and the classroom behaviour of the teacher which were inherent in them,

iii) to alert the prospective teacher to the importance of understanding the adjustment problem of the pupils and teachers, to help him gain insight concerning the nature of teaching and learning process and aid him achieve competence in the evaluation of classroom instruction, and

iv) to inculcate among teacher trainees appreciation of responsibilities inherent in the role of the teacher.

The single group design was used in the study. In all, 1000 students of class X studying elementary mathematics from different colleges of Jaunpur and 100 teachers teaching these students were selected for the study.

The finding of the study were:

i) The classroom verbal behaviour of the teachers had positive relation with the pupil characteristics.
ii) The classroom verbal behaviour and the interest of the pupil had positive relation except in aesthetic, social and clerical interest factors.

iii) The classroom verbal behaviour of teachers had no positive relation with attitude of pupils.

iv) The classroom verbal behaviour of teachers had no positive relation with achievement of pupils.


The objectives of the investigation were:

i) to study the prevailing position of the teaching of Geography in the rural and urban areas of Gujarat.

ii) to study the qualification and experience of the teachers teaching Geography.

iii) to study the text book of Geography prescribed for different standards in Gujarat in the light of the curriculum of Geography.

iv) to study the availability of teaching aids and other facilities like library, and their use in the teaching of Geography, and

v) to study the prevailing position of the evaluation system in the subject of Geography in the Gujarat.
The method of study followed was that of survey. For collecting the data, the researcher prepared a questionnaire. The data were analyzed and descriptive statistics were used for data analysis.

The major findings were:

i) 50% of the teachers were not qualified in the subject of Geography.

ii) about 52% of the teachers teaching Geography did not have Geography as a method at their B.Ed level training.

iii) about 77% of the teachers were teaching Geography through the lecture method and without the use of any teaching aid.

iv) teaching aid facility in 52% of the schools especially for Geography were not satisfactory.

v) about 42% of the teachers teaching Geography did not attend any refresher course or orientation programme.

vi) about 83% of teachers were of the opinion that curriculum required modification in the light of modern developments in the subject.

vii) There was no clarity of the teaching of skills in the subject in 33% of teachers.

Patel (1985) made an inquiry into the present position and problems of teaching Geography in the rural secondary schools of Solapur District.
The main objectives of the study were:

i) To study the existing facilities available for teaching of Geography in rural secondary schools,

ii) To study the professional preparation of Geography teachers,

iii) To study the methods and techniques followed in the teaching of Geography,

iv) To suggest measures helpful in improving the teaching of Geography.

The study was of the survey type. The investigator used the following tools for gathering information

a) A questionnaire for Geography teachers,

b) structured interviews for head masters parents and experts,

c) visits and observation.

The questionnaire and the interview schedules dealt with different aspects of Geography teaching, like teachers, students, objectives, curriculum, teaching, evaluation and facilities such as library, museum etc.,

The copies of the questionnaire were sent by post to all the secondary schools in rural areas of Solapur district of Maharashtra. The number of schools covered was 155 and the estimated number of Geography teachers was 360 (i.e. two teachers per school). Out
of this respondents 80 teachers. In order to check and validate the information furnished by the Geography teachers, interviews of 40 head masters, 20 parents and 40 experts were held. The investigator visited 20 schools and conducted discussion with students and teachers from these schools. He also observed the lesson of teachers though no specific observational instrument was used. The data collected were analysed using percentages and arithmetic means.

The major findings of the study were:

i) no facility of a Geography room nor museum was available in a large number of schools, and the facilities of library and teaching aids were inadequate,

ii) the teachers of Geography were academically and professionally well qualified; however they could not participate in the inservice programme and the activities of subject teacher's association for various reasons.

iii) according to the teachers the objectives of teaching Geography could rarely be achieved through regular teaching due to inadequate time.

iv) the majority of the teachers followed traditional methods such as lecture or question answer method; however they were aware of
certain present techniques and methods like evaluation approach.

v) Geographical excursions were one of the main co-curricular activities organized in the schools.

vi) the percentage of students passing in the subject of Geography was found to be very high (74%).

Chitkara (1985) made an attempt to study the effectiveness of different strategies of teaching on achievement in mathematics in relation to intelligence, sex and personality.

The objectives of the study were to find out

i) whether achievement in mathematics was affected by different strategies of teaching

ii) whether different strategies had differential effects on achievement of male and female students

iii) whether levels of intelligence interacted with teaching strategies in terms of achievements, and

iv) whether personality acted as a potential factor in selection of teaching strategy.

In the study a pretest post-test experimental design was followed. A four way factorial design [3x2x2x3] was employed. The independent variables
in the study included strategies of teaching, sex, personality and intelligence and the criterion variable was achievement in mathematics. The strategies of teaching varied in three ways – [a] lecture – discussion, [b] inductive–drill, and (c) auto-instruction group discussion. The personality varied in two ways – extroverts and introverts; the variable of intelligence had three levels – low, average and above average. A sample of 300 students was randomly selected from grade IX students of four schools of Chandigarh.

The sample subjects were administered

i) The Mathematics Achievement test,

ii) The Jalota Group Test Mental Ability (1972),

iii) The Eysenck personality Inventory (1964).

The students were divided into three groups of 100 each. One group was taught mathematics through lecture discussion. The second group was taught mathematics through inductive – drill and the third group was taught mathematics through auto - instruction group discussion. The data collected through pretest – post test were analysed through four ways [3x2x2x3] analysis of variable.
The findings of the study were:

1. All three strategies, namely, [a] lecture discussion, [b] inductive - drill and [c] auto instruction group discussion, were found to be equally effective in terms of achievement in mathematics disregarding levels of intelligence, sex and personality type.

2. Boys and girls of superior ability did not show any significant difference between their mean scores on achievement in mathematics.

3. Girls of average ability scored significantly higher in mathematics than boys of average ability.

4. Lecture discussion strategy found favor with average ability students as they scored significantly higher than average-above and average below groups.

5. Strategy II and strategy III namely inductive – drill and auto – instruction group discussion, were more suited to the students having above average intelligence than average and below-average.

6. The strategy of lecture – discussion was found to be equally effective with above - average and below – average ability (intelligence) introverts as well as extroverts.

7. Extroverts of high average ability, and below- average ability scored equally well when taught through strategy I.
8. Under the strategy of auto-instruction group discussion, high ability and low ability extroverts did not differ from the high ability and low ability introverts. But extroverts of average ability differed significantly in their achievement from average ability introverts.

9. Out of the three strategies, strategy I) was more suited for below-average ability extroverts and introverts, strategy II) for high ability extroverts and strategy III) was most suited for high ability introverts for achievement in mathematics.

Singh, (1983) found that teaching behaviour of secondary school teachers was found to have eight skills, viz., skill of questioning, of explanation, of black board writing, of reinforcement, of introducing a lesson, of summarizing the lesson, of using teaching aids, and skill of illustrating with examples. Teaching behaviour of social science teachers was found to have ten factors, of social science teachers eight factors, and of language teachers seven factors. The seven factors common to the teaching of all three subjects were skill of introducing a lesson, of black board writing, of questioning, of reinforcement, of summarizing the lesson, of using teaching aids, and of explanation. Three factors skill of illustrating with examples, skill of attending to pupils difficulties, and skill of maintaining classroom discipline - were found specific to science teaching. Skill of responding to pupil's questions was specific to social
science teaching while no factor was found specific to language teaching.

Behaviour of male teachers was composed of seven factors, while that of female teachers of eight factors. The six factors common to the teaching behaviour of male and female teachers were skills of questioning, of blackboard writing, of explanation, of reinforcement, of introducing a lesson and of summarizing the lesson. The skill of illustration with examples was found to be specific to the teacher behaviour of male teachers. Skill of using teaching aids, and skill of questioning to develop critical awareness were specific to female teachers.

Teacher behaviour of urban and rural school teachers had eight factors. The common factors were the skill of explanation, of questioning, of blackboard writing, of introduction a lesson, reinforcement and of summarizing the lesson. The skill of teaching aids, and the skill of illustrating with examples were specific to the teaching behaviour of urban school teachers while the skill of convergent questioning and the skill of illustrating with examples to the rural school teacher.

2.2.2 Studies On Classroom Verbal Behaviour:

The classroom verbal behaviour of teachers was studied in respect of demographic variables such as age, sex, training, experience, socio-economic status and modernity. These were not found to be related with
classroom verbal behaviour of teachers as measured through Flander's Interaction Analysis Category System (Santhanam 1992; Quraishi, 1972; Shashikala, 1978; Thakur, 1980; Joglekar, 1981). On the other hand, sex was found to influence classroom verbal behaviour of teachers (Santhanam, 1972; Sharma 1979; Jain 1982). Creative thinking was found to influence classroom verbal behaviour of teachers (Singh, 1978; Choudhary, 1982). But on the other hand Mathew (1976) found that creative teacher personality did not influence the classroom verbal behaviour of teachers.

The classroom verbal behaviour of teachers was studied in respect of various personality traits. Quraishi (1972) found that teachers' verbal behaviour in the classroom was related to a small extent to their personality. Extrovert teachers were found to have greater interchange of classroom events than introvert teachers (Goal, 1978). Structuring the lecture had a significant positive relationship with personality components like restraint, ascendance, emotional stability objectivity, thoughtfulness and personal relations. Roy (1981) reported a significant correlation between classroom verbal behaviour of teachers and their self-confidence, leadership, emotional balance, sociability, intelligence, and interest in literature and fine arts. Personality traits like emotion, sensitivity, confidence, insecurity, extrovert, introvert, submissiveness and
dominance, showed indirect influence on classroom verbal behaviour of teachers (Suthar, 1981). Lastly, Jain (1982) reported that male teachers devoted more time to asking questions than female teachers. Teachers with a positive attitude towards the teaching profession, classroom teaching, child-centered practices and the educational process reacted to ideas and feelings of pupils and frequency created an emotional climate in the classroom. Theoretical and aesthetic values were not significantly related to the effective behaviour of teachers. Teachers with a high aesthetic value did not have a favorable attitude towards the teaching profession but teachers with high religious value had a high favorable attitude towards the teaching profession, pupils and teachers.

Further, classroom verbal behaviour of teachers was studied in the context of attitudes towards various objects. Attitude towards management were found to be related with indirect behaviour of teachers Quraishi, (1972). The classroom verbal behaviour of teachers was found to be significantly related to attitude towards teaching Singh, (1974) and also to attitude towards teaching as a career Roy (1981). Shashikala and Thirtha (1977) reported that teachers scoring high on autonomy manifested indirect behaviour to a great extent. Teachers scoring high on affiliation responded negatively to student’s talk.
2.2.3 Studies on Teaching Efficiency

In respect of teaching efficiency, Debnath (1971) reported that age, experience, academic achievement and professional training, and superior teaching efficiency went with a favorable attitude and good adjustment. Samantaroy (1971). Debnath (1971) developed a questionnaire for measuring teacher efficiency, while Samantaroy (1971) developed a score card by following a mode suggested by Co-operative Study of Secondary School Standards, Washington for measuring teaching efficiency.

Teacher effectiveness as a criterion variable was studied by Sharma (1971), Gupta (1976), Grewal (1976). Subbarayan (1985) and Tharyani (1986). Teaching aptitude, academic grades, socio-economic status, teaching experience and age, in the order of their arrangement, appeared to be sound predictors of teacher's effectiveness Sharma,(1971). The main predictors of teacher's effectiveness were home, health, social, emotional, and total adjustments, dominance, submission and verbal and non-verbal intelligence Grewal (1976). High effective teachers were more affectothymic, more intelligent, having more ego strength, more surgent, more self-sentiment, less suspicious, less guilt prone and less radical Gupta, (1976). Intelligence and knowledge in their respective subject areas were found to be the best predictors of teacher effectiveness.
Tharyani (1986). All these studies were conducted at the school stage, except Subbrmanya (1985), who conducted a study at institutions at the higher stage. Teacher's effectiveness as rated by colleagues and by self is significantly correlated with the teacher's ability to do research and publications.

2.2.4 Studies on Teaching Effectiveness

Teaching effectiveness as a criterion variable was studied by Singh (1976), Bhangoliwal (1982), Wali (1985) and Padmanabhaiah (1986). Singh (1976) reported that most of the prominent needs of superior teachers were nurturance, achievement, counteraction and aggression. Their organizational pattern was logical and interpersonal relation as regards social behaviour and adjustment was of a very high degree. Further, superior teachers were less entangled in family problems or were able to solve them quickly and used more literary language. Bhangoliwal (1982) found that a fairly higher level of differentiation and integration in their cognitive and perceptual functioning characterized more effective teachers. They had a superior capacity for imaginative and original thinking. The affectional need of more effective teacher, had a well developed value system and ego organization. They had a narrow gap between their level of aspiration and imaginal and inner resources.
Wali (1985) reported, professional dignity (grade, salary, etc), altruistic temper, professional involvement, democratic temper and family background were correlated with teaching effectiveness.

Padmanabhaiah (1986) observed that region, designation, age, experience and size of family of teachers could significantly influence the level of teaching effectiveness.

2.2.5 Studies on Proficiency in Teaching

Intelligence creativity and interest were characteristically interrelated in promotion of proficiency in teaching (Jain, 1977) Pachauri (1983) found that reserved, relaxed, adjusted and controlled teachers were more proficient in teaching than those who were outgoing, tensed and possessed more anxiety. Further less intelligent, imaginative and trusted teachers with high aggression were better in teaching.

Deva (1966) reported that personality was the most important and intelligence the least important in predicting success in student teaching, whereas intelligence were considered to be the most influenced predictor by Mahapatra in 1987. Rao (1987) found that content processes like categorization, application of principles, and logical reasoning were meagerly employed, that too by a few effective science teachers Dosajh (1956) using teacher trainees as sample reported that imagination and
maturity were indicative of success in the teaching profession. Roy (1966) observed that a teacher role as director of learning was the sole determinant of teachers effectiveness. Gurbaksh (1974) found that high vocational anxiety was inversely related to teaching success' but high general anxiety was not associated with the teaching success. In respect of cognitive interaction Nayar (1976) reported that the higher the competence, the less seemed to be the quantum of expository teaching, and higher the level of cognitive interaction the higher the discovery learning. Teachers who did not exploit the higher level of interaction variation in content matter and thought that was a potent source of variation in cognitive interaction. Padmini (1978) found that multiple regression analysis did not indicate effective prediction of any of the cognitive interaction criteria. Mehta (1976) enquired into the communication pattern of teachers teaching history and its relationship with demographic factors. There was no relationship with demographic factors. There was no relationship between age of the teachers and their communication pattern in the classroom and a similar result was found in respect of sex. Sex was negatively related with the teacher response ratio. Teachers having taken history at the graduation level as well as professional level did not differ from those who did not have history at both levels in their communication pattern in actual classroom situations.
Kumar (1982) reported that teachers dominated the interaction and the teacher used about 71.37 percent of the total time. The questioning behaviour of social studies and science teachers differed significantly. Science teachers used translation, interpretation, application and higher order questions to a greater extent and memory and the routine type of questions to a less extent than social studies teachers.

Linguistic and communicative abilities of high school teachers of English were studied by Singh (1984). It was observed that the speaking ability of three fourths of the teachers was fairly adequate, though it was not fully adequate. Jani (1983) found that language teachers had most transitions from responsive lecturing to unresponsive lecturing, from involving direction to harsh criticism and inattentive pupil response, from distressful silence to impersonal questioning and diminishing direction, and from attentive pupil response to involving direction, whereas science teachers had greater transitions from responsive lecturing to personal questioning, from personal questioning to involving direction, and from attentive pupil response to perfunctory use of pupil ideas.

2.2.6 Studies on Teacher Behaviour

Mehta (1972) and Singh (1985) conducted factor analytical studies related to teacher behaviour. Mehta (1972) analysed teaching ability of student teachers and found teaching ability to be a factor which was
loaded with achievement variables of training. High achievers were found to be more conscious, venturesome, tender-minded and experimenting whereas low achievers were more outgoing and imaginative. Singh (1985) found six factors common to the teaching behaviour of both male and female teachers: skill of questioning, blackboard writing, explanation, reinforcement, introducing a lesson and summarizing the lesson. The skill of illustration with examples was found to be specific to the teaching behaviour of male teachers. Skill of using teaching aids, and skill of questioning to develop critical awareness were specific to female teachers. Katiyar (1982) reported that surgency, dominance, exacting will power and intelligence optimally helped the acquisition of the skill of explaining, and the skill of stimulus variation was optimally helped by self sufficiency, suspiciousness, affecto-thymia and imaginativeness.

2.2.7 Teacher behaviour / Teaching strategy, Learning Outcomes

The classroom behaviour of a teacher will influence the learning outcome of students. This hypothesis was explored by various researchers like the Government college of Education, Jabalpur (1971), Jangira (1972) Lulla (1974), Patel (1974), Desai (1977), Gupta (1977), Pavanasam (1977), Dubey (1979) and Yadav (1987). There was a positive and significant relationship between pupil's favourable attitude
towards teacher and a low percentage of direct talk (Government College of Education, Jabalpur, 1971). Jangira (1972) found that pupils taught by indirect teachers scored higher on adjustment, dependency, and classroom trust. Indirect teacher influence had a favourable effect on motivation, classroom organization, and attitude towards teacher Patel, (1974). Pupils taught by such teachers attained higher achievement scores as compared to their counter parts. Lulla, (1974). Training in Flanders Interaction Analysis Category System modified teachers Indirect behaviour positively, which further affected pupils achievement, pupils classroom trust, initiative and adjustment towards home, school and peers, Desai, (1977). The verbal creativity of pupils was significantly related with teacher verbal behaviour Gupta, (1977). Indirect behaviour of teachers influenced achievement, achievement motivation, value orientation, classroom trust and dependency Pavansam, (1977). Classroom verbal behaviour of teachers had a positive relationship with the achievement and interest of pupils Dubey,(1979). Indirectness in teacher behaviour was found positively related with pupil attitude towards their teachers but not related with student achievement in biology at high school level Yadav, (1987).
2.2.8 Studies on Teaching Patterns

The effect of teaching patterns on pupils attainment was studied by Sharma (1972), Shaida (1976), Padma (1976), Roy (1977) and Pandey (1981), and it was found that narrow questions as compared to open questions were more effective with respect to pupil attainment in terms of knowledge objectives. On the other hand, Shaida (1976) found that the teaching pattern of narrow question with feedback was significantly effective in the development of knowledge and retention as compared to narrow questions with no feedback. The lecturing-problem-solving approach, questioning answering-feedback-problem-solving approach were all found to be equally effective with respect to the development of application ability in science of standard VII pupils (Padma, 1976). Pandey (1981) found that oratorial and traditional styles were inferior to empathic and democratic styles of teaching science. The effect of patterns of teaching on creative thinking among adolescents was studied by Pillay (1978) and he found that the treatment of the creative teaching method, when compared with the traditional method, did not produce different effect upon general creative thinking and its sub-parts such as, seeing problems, unusual uses and consequences of eight grades. Roy (1977) investigated the effect of three styles of classroom questioning on hierarchical pupil achievement and found that lecturing, questioning and
response with feedback, and the questioning response feedback sequence, teaching styles had equal effect on the development of knowledge and application abilities and total achievement of pupils. Mish (1976) attempted to determine which of the selected teaching methods or combinations of them had a significant relationship with the attainment of specific learning outcomes of students in biology. It was found that teachers with higher-class means on several learning outcomes emphasized pupil-centered methods, utilised the laboratory, used project and laboratory discussion combination methods for solving new problems. The environmental approach was superior to the formal approach in teaching biology in terms of immediate post-teaching and delayed memory scores Exemmal, (1980).

2.2.9 Studies on Instructional Strategy

Jayachandran (1980) compared three strategies, namely, teacher with programmed filmstrip, programmed filmstrip without teacher and the conventional method in terms of achievement of students. This study was conducted at school level for teaching history. Chakraborty (1978) studied the effectiveness of strategy $S_1$ (lecturing and questioning-answering by using behavioural objectives), and strategy $S_3$ (discussion by using instructional materials) on the development of knowledge,
comprehension, application ability and total achievement in Geography of pupils of standard IX. Mallick (1979) compared multimedia programmes with a book format programme in terms of achievement of students. Seshadri (1980) developed an instructional strategy for teaching mathematics to class IX students. The components of the strategy were: introduction by the teacher, programmed learning materials, games or group activity, post-test and discussion of performance on post-test and feedback sessions. An instructional strategy comprising programmed learning material, library reading, discussion and practical work was designed by Shah (1980) for teaching the course on Educational Evaluation at B.Ed. level. Kumar (1981) studied the effect of four teaching strategies on the development of creative thinking and achievement in science. Sunderlakshmi (1981) investigated the effect of instructional strategies on both the classroom climate and pupil attainment. Ravindranath (1982) developed a multimedia instructional strategy for teaching biology at secondary school level. The strategy comprised 12 components, namely, introduction by the teacher, programmed learning material, lecture, team teaching, inquiry technique, pupil activities with teacher demonstrations, discussions, audio-visual presentation, narration of biographical sketches of scientists, summary criterion test and feedback exercises and assignments. Joshi (1987)
developed an instructional strategy for teaching elements of science to class IX students. The strategy comprised programmed learning material, assignment, experiments, demonstration, discussion, test on discussion on the performance at test. All these studies reported that richness could be brought into the teaching-learning process through these strategies which was not possible through traditional methods. The developed instructional strategies were also found to be effective in terms of reaction of students towards different components of instructional strategy.

Further, Singh (1983) reported that programmed instruction, Bloom's mastery learning strategy influenced achievement motivation more than the conventional method of teaching. Kirkire (1981) found that assignments as well as objective-based lesson plans did not significantly affect the achievement of students in mathematics. The strategy developed, when used in any science subject like biology, demanded integration of knowledge from different disciplines of science (Talegoankar, 1984). Singh (1986) investigated the teaching strategies used for preparing students for the CPMT and the IIT competitive entrance examinations. It was observed that lecture-cum-chalk board strategy was mostly used in physics and chemistry and rarely in zoology and botany teaching in the CPMT. On the other hand, in the IIT a lecture-cum-chalk-board, question answer followed by testing, revive- cum-
discussion, and assignment-cum-clarification strategies were used in teaching chemistry, physics and mathematics subjects.

2.3 Review of Foreign Studies:

Psychologists and educationists started researches both in the fields of teaching and learning. But researches in the areas of interaction, teacher behaviour, classroom group dynamics and characteristics of teachers have a history over thirty years or more. These researches have tried to focus on various aspects of the teacher and the taught from different angles, for example, studies of Rowan (1968) Anderson (1945), H. Brewery (1946) and Ryans (1960) are concerned with the teacher behaviour and personality characteristics hypothesised to be affecting pupils learning in the class..

Teacher's verbal behaviour in the classroom determines the general tone of the classroom. Teachers, whose behaviours are liked by pupils, are graded to be more effective as they are capable to bring desirable changes or modifications in pupil behaviour and academic achievement. The same has been reviewed with the help of a few previous individual studies in the area of personality characteristics of teachers.
Monroe (1952) found that the ideal teacher of the 1920s was a person possessing the traits, knowledge and skills considered necessary for performing various duties involved in that profession.

The ideal teacher of 1940's was a constructive and adaptable member of the school staff, competent to participate in determining school policies and programme as well as an efficient instructor in the classroom.

In 1960's the qualities to be sought in the teacher would include love for his own subject, interest in children.

Ryans (1960) prepared a list of teachers effective characteristics, Ryans in this study aimed at identifying and analysing some other qualities. He found in his research study that:

1. Friendly and understanding, and
2. Responsible and systematic and business-like teachers are more effective

Flanders (1962) studied the effects of the knowledge of interaction technique on teacher’s classroom effectiveness. He concluded that the knowledge of interaction technique analysis was helpful for teaching effectively.

Heil and Washburne (1962) made a study of teacher effectiveness to determine if the influence of teacher behaviour is responsible for change in children and if these pupil changes have any relationship with
the types of teachers. The researchers found that work-oriented, orderly and self-controlling teachers were liked more by high scorer, these type of teachers were found specially effective with opposing and wavering children also.

2.4 Guidelines from the Review of Related Literature

The present research study is confined to the teaching and testing procedures in residential and non-residential secondary schools. The aspects teaching and testing involve mainly teacher-pupil interaction in the classroom during the process of curriculum transaction. Teacher behaviour occupies the center stage in the activity of curriculum transaction in the classroom. The review of related studies helped the researcher in defining the objectives of her study, designing the tools of the study and analysing the data.

The review so made revealed a trend of continuity in research in teacher behaviour where Flander’s Interaction Analysis Category system (FIACS) has been constantly employed across subjects, grades and regions. The FIACS measures democratic-authoritarian aspects of classroom climate. The democratic behaviour of the teacher is very important but, as analysts of research trends in education observe, the FIACS does not reflect other aspects of desired classroom climate,
problem solving environment, environment of developing inquiry training skills, risk taking, environment conducive for developing humor and fantasy, and imagination. Apparently, the measurement of such types of classroom environment is difficult. Some observation systems are already available for measuring some of the cited classroom behaviours. Today it is possible to use these observation systems because video recording of behaviours in the classroom is possible. This provided the researcher with the guidelines to employ video recording as tool of collecting data for her research study by recording observations of the actual classroom environment in secondary schools involving teaching and testing procedures.

Some of the findings of the literature reviewed revealed certain personality traits of teachers like adjustment, intelligence, anxiety, teaching attitude, mental health, teacher's attitude towards the teaching profession, interest in teaching, influencing the teaching effectiveness vide Adval (1955) Factors like blackboard work, correcting oral mistakes, explaining difficult points, general knowledge, handwriting, knowledge of the subject, maintaining discipline, power of oral expression, revision of main points, skill in questioning, the use of material aids were found to be helpful to teaching vide Gupta (1977). Some observations pointed out that the verbal behaviour of the teacher dominated the classroom situation
vide Naidu (1980). High creative teachers increased pupil freedom to participate by praising, accepting and developing their ideas vide Muddu (1978). The classroom verbal behaviour of teachers was found to have positive relation with the achievement of pupils vide Dubey (1979).

According to the findings of another study a majority of the teachers followed traditional methods such as lecture or question answer method Patel (1985). Teaching behavior of secondary school teachers was found to have eight skills viz. questioning, explanation, blackboard writing, reinforcement, introducing a lesson, summarizing the lesson, using teaching aids and explanation vide Singh, (1983). Creative thinking was found to influence classroom verbal behavior of teachers vide Singh, Choudhari (1982). Personality traits like emotion, sensitivity, extrovert, introvert, submissiveness and dominance showed indirect influence on classroom verbal behaviour of teachers vide Sutar (1981). Teachers with a positive attitude towards the teaching profession, classroom teaching, child-centered practices and the educational process reacted to ideas and feelings of pupils and frequently created an emotional climate in the classroom vide Jain (1982). Intelligence creativity, and interest were characteristically interrelated in the promotion of proficiency in teaching (vide Jain 1977). A teacher's role as director of learning was the sole determinant of teacher effectiveness (vide Roy
1965). Another study pointed out that teachers dominated classroom interaction and about 71.37% of the total time was used by the teachers. Science teachers used translation, interpretation, application and higher order questions to a greater extent and memory and routine type of questions to a less extent than social studies teachers vide Mehta (1986).

One of the studies pointed out that language teachers had most transitions from responsive lecturing to unresponsive lecturing, from involving direction to harsh criticism and inattentive pupil response, from distressful silence to impersonal questioning and diminishing direction and from attentive pupil response to involving directions where as science teachers had greater transitions from responsive lecturing to personal questioning, from personal questioning to involving direction, and from attentive pupil response to perfunctry use of pupil responses (vide Jani 1983). The verbal creativity of pupils was significantly related with teacher verbal behaviour vide Gupta (1977). Classroom verbal behaviour of teachers had a positive relationship with the achievement and interest of pupils vide Dubey (1979).

Teacher’s verbal behaviour in the classroom determined the general tone of the classroom. Teachers whose behaviors are liked by pupils were graded to be more effective as they were capable to bring desirable changes or modifications in pupil behavior and academic
achievement. Work oriented, orderly and self-controlling teachers were liked more by high scorer as these types of teachers were found specially effective with opposing and wavering children also Vide Heil and Washburne (1962). Narrow questions as compared to open questions were more effective with respect to pupil attainment in terms of knowledge objectives Vide Sharma (1972) while the teaching pattern of narrow questions with no feed back was significantly effective in the development of knowledge and retention as compared to narrow questions with feed back Vide Shaida (1976). The lecturing – problem, solving approach, questioning – answering – feedback problem - solving approach, were all found to be equally effective to the development of applicational ability in science vide Padma (1976).

Further, oratorial and traditional styles were found to be inferior to emphatic and democratic styles of teaching science Vide Pandey (1981). Teachers with higher-class means on several learning outcomes emphasized pupil-centered methods, utilized the laboratory, used project and laboratory discussion combination methods for solving new problems. The environmental approach proved to be superior to the formal approach in teaching biology in terms of immediate post teaching and delayed memory scores vide Exemmal (1980.).
The findings of the studies reviewed provided the researcher with the guidelines for the analysis of the data for her study.