CHAPTER -II
REVIEW OF THE RELATED LITERATURE
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Introduction:-

One of the most indispensable parts of the research project is reviewing the literature. This implies synthesizing and going into the words or researches that have already done in the field over a period of time. This helps an investigator in many ways like knowing quantum of works done in the field, knowing how to tackle his own problem and avoiding the risk involved in duplication of research. Besides, it gives an understanding of problems related to this field. Essentially, review economizes time and energy of the investigator.

To quote C.V. Good, “the survey of related literature may provide guiding hypotheses, suggestive methods of investigation and comparative data for interpretive purposes. Sometimes text books and subjective critiques of a problem area provide important insight and hypotheses that may have a place in the summary of the related literature.

In order to prepare a base for defining the problem precisely, for making interpretation of data meaningful and for making comparisons among similar studies, the investigator studied the related literature extensively. The review provided an insight into various dimensions of the problems and related issues at different stages. In this attempt, the investigator was selected and reviewed researches which have direct bearing on the present study. The survey of related literature is an important step in conducting educational research. It enables the investigator to locate the gap and find the trends in research in a particular field. The information about the design, samples and research tools employed by other investigators help the future investigators to formulate their designs with more care. An attempt has been made by several investigators to study teacher effectiveness in relation to personality factors, abilities and interests, attitudes, classroom interaction.

Sources of Literature:-

There are many sources of literature which a researcher can use for his research purpose, some of them are given below:-

I. Library:-
A researcher should be familiar with the library and its many facilities and services. He should also be acquainted with the regulations governing the use and circulation of materials. Many libraries use a printed guide that contains helpful information. The guide uses a diagram to indicate the location of the stacks, the periodicals section, reference section, reading rooms, and special collection of books, microfilm or micro card equipment manuscript, or pamphlets. So, a library is proved to be a good source of desired information.

II. Reference Material:-

There are a number of references that may be useful to a researcher in the field of education. Many full length studies of reference books, cyclopedias of education and encyclopedias of education and many handbooks of research are available as reference material which is very helpful for a researcher.

III. Research Periodicals:-

Information about new ideas and developments often appear in periodicals long before it appears in books. There are many periodicals in education and in other closely related areas that are the best sources for reports on recent research studies. It has been estimated that there are about 2100 journals that are specifically related to the field of education. In all such journals one may also find articles of interest devoted to Psychology, Philosophy, Sociology, and other subjects.

In India many periodicals are published by some associations or institutions. They provide a medium for dissemination of educational research and exchange of research among research workers, teachers, scholars and others interested in educational research and related fields and profession.

IV. Abstracts:-

Abstracts include brief summaries of the contents of the research study or article. They serve as one of the most useful reference guides to the researcher and keep him abreast of the work being done in his own field and also in the related fields.

Research in Education (RIE): This presents the most comprehensive publication of research material in education today. Education Abstracts: This ia a publication of UNESCO, which began in 1949 and has been published monthly except July and August. Each introductory essay devoted to a particular aspect of education, is followed by abstracts of books and documents, selected from various countries dealing with the topic under consideration.
In India, The Ministry of Education and Social Welfare, since 1955, has been issuing Indian Education Abstracts every three months. It abstracts the contents of books and periodicals on education published in India in English and Hindi.

V. Theses and Dissertations:-

Theses and dissertations are usually preserved by the universities that award the authors their doctoral and masters degrees. Sometimes, these studies are published in whole or in part in various periodicals and journals.

In United States, reference of doctoral dissertations in all fields, including education, can be found in sources complied by various agencies. For the period 1912 to 1938, the library of Congress issued the annual list of American Doctoral Dissertations for published studies.

In India only a few Universities publish abstracts of dissertations and theses that have been completed at the institutions.

VI. Newspapers and Pamphlets:-

Many articles of particular interest to a researcher may be located through newspapers and pamphlets. Current newspapers provide up-to-date information on speeches, seminars, conferences, new trends and a number of other topics. Old newspapers which preserve a record of past events, movements and ideas, are particularly useful in historical inquiries. Some libraries catalog pamphlets and newspapers in their reference sections.

VII. Government Documents:-

Government documents are a rich source of information. They include statistical data, research studies official reports, laws and other material that are not always available elsewhere. These are available in national, regional, state as well as local level government offices.

VIII. Monographs:-

Monographs are also rich and major sources of information on ongoing research. In the United States Universities and teachers’ colleges publish many research studies in education in the form of monographs. In India only a few number of monographs are published by some Universities and research organizations.

IX. Computer-generated Reference Materials:-

School Research Information Services (SRIS), Direct Access to Reference Information (DATRIX), and vPsychological Abstract Research and Retrieval Service (PASAR) in the United States provide a number of computer-generated reference sources. The PASAR furnishes printouts
In this chapter an attempt has been made to present a brief review of all these different modes of investigation in the field. The review has been arranged along the following lines.

2.1 Studies on interactional analysis of effective and ineffective teachers.

2.2 Studies on interactional analysis in general

2.3 Studies on teacher’s classroom behaviour.

2.4 Studies on effective and ineffective teachers in general.

2.1 Studies on Interactional Analysis of Effective and Ineffective Teachers

Furst (1967) used Flanders Interaction Analysis technique to analyze the classroom data which was analyzed previously by researchers using Bellack’s Cognitive categories. Fifteen teachers and 345 students in seven high schools in the Metropolitan New York area participated in the study. All classes were given the same texts with four days set as the instructional period. Students were pre-tested and post-tested on a ‘knowledge test’ designed by Bellack team. The study concluded that the teachers of the higher level group tended to be more indirect than direct. Teachers of the lower level group tended to use more direct than indirect influence. The teachers of the average group tended to minimize effective behaviours, concentrating on lecturing.

Herman (1967) in a study to determine the specific kinds and time lengths of activities in which three group of V grade children- above average and below average were engaged from the time the Social Studies period began until it ended. The study also attempted to assess the teacher pupil verbal behaviour, which occurred during the observations. It was found that the teachers of the above average group were indirect, i.e., they used more praise, questions and acceptance of pupil ideas than lecture, commands and criticism in their verbal behaviour patterns, the teachers of the average group were nearly neutral, i.e., one direct statement for each indirect statement in verbal behaviour patterns; and the teachers of the below average group were direct in their verbal behaviour patterns. Amidon and Giammetto (1967) identified 33 superior teachers as adjudged them with 120 randomly selected teachers constituting the average group, on classroom behaviours. The superior teachers were found to be more indirect than the average group.

Pankratz (1967) located 5 ‘high’ and 5 ‘low’ teachers teaching school physics from sample of 30 by using principal ratings, class average of a pupil attitude inventory, and a
“teacher-situation reaction test”, completed by each teacher. Using expanded version of Flanders Interaction Analysis Categories, developed by Hough, it was found that the teachers classified as more effective according to the three scores made more use of the ideas and opinions expressed by pupil at 0.01 level of significance than the less effective teachers.

Mahashwari (1976) found that effective teachers using the categories of ‘Accepts feeling, praise, use students ideas, questions, student’s response and initiation’ where as ineffective teachers employ ‘lecture, direction and authority’ categories. Effective teachers involve more indirect influence, students initiation, teacher response ratio and pupil study state ratio whereas ineffective teachers involve more direct talk, silence and confusion, steady state ratio and non-stimulating situation in the classroom teaching- student response and initiation are followed by teacher’s praise and accepting feelings whereas in case of ineffective teacher teaching, it is followed by direction and authority. He concluded that effective teachers in comparison to ineffective teachers employ more creative models.

Balachandran (1981) reached at the conclusion that the factors of teacher effectiveness from classroom point of view are subject mastery and intellectual kindling, responsiveness, integrity and communicating ability, commitment to teaching impartially, motivating concern for the student’s progress and informal academic help.

Kulkarni (1986) has summarized the relationship discovered by studies relating Flanders and other interaction analysis to pupil achievement and attitude. It was found that teachers of high-achieving classes accept, clarify and use student’s ideas significantly more than teachers of low achieving classes; teachers of high achieving classes criticize their students significantly less and encourage significantly more student initiated talk.

Use of FIA System Gage (1991) concluded research on Flanders interaction analysis and grouped the system into two broad categories: indirect teaching- types 1, 2, 3 and 4; and direct teaching- types 5,6 and 7. One can see that the main difference between the two modes is basically whether teaching is viewed as asking or giving directions and lecturing. In comparing the modes, Gage was interested to examine the possible differences at elementary level versus secondary level. He concluded that teachers who employed the indirect mode at the secondary level produced greater academic gains on the part of their pupils than teachers who used the direct mode. This means that the academic performance of teenage students will be enhanced through the effective use of questioning and open inquiry. The finding held true across subject
matter. However, this research does not mean that the secondary teacher must stay exclusively in the indirect mode. The evidence is based on ratios of time expended in one mode versus the other. At the high school level, effectiveness is increased if the teacher uses the indirect mode more than half the time. Obviously, there will be times for giving careful directions, lecturing and criticizing students for misbehaviour, yet for the most part, employing questioning, reinforcing, cueing and responding to feelings will produce academic gains to a greater degree.

To further buttress this approach to teaching and learning, researchers conducted a series of independent studies at the college level. Although the actual Flanders system was not used, the overall results were quite similar. The college researchers found that professors who provide time for student questions, allow students to question one another, and encourage students to make statements in class fostered cognitive growth and complexity of thinking on the part of their students. So, results from both high school and college students indicate the advantage of the indirect mode.

Mark (1994) conducted a research on problem based learning and came to the following conclusions: Balance between teacher talk, and silence.

This is simply the proportion of the total amount of interaction time that is taken up by the teacher, by pupils and in silence. Flanders argues that established norms are 80% teacher talk, 20% pupil talk and 11-12% silence. Observational data suggests that PBL will contain a higher percentage of pupil talk than the curriculum. Whilst these measures of talk are useful, a high proportion of pupil talks are useful.

The Teachers Immediate Response Ratio (TRR) measures the tendency of the teacher to praise or integrate pupil ideas and feelings into the class discussion at the moment the pupil stops talking. It is calculating using data from the analysis of pairs. Given the tutorial role expected to teachers in the PBL system, a high TRR may be expected. No difference between the two curricula in student attainment and/or %age of pupil talk and/or PIR might be explained by a lower than expected TRR. Similarly the TRR may be useful to tease out any differences associated with the PBL system (indicated by high %age pupil talk and PIR) and those associated with the actions of the tutor.

Kuchay (1995) conducted the study on Interactional Analysis of Classroom Behaviour-A study on Effective and Ineffective Language Teachers at Higher Secondary Level. The objectives formulated for the study were: (i) to identify the effective and ineffective teacher on
the basis of criterion measures. (ii) To compare the interaction style of the effective and ineffective teachers on the basis of Flanders Interaction Analysis Category System.

The main conclusions were: (i) thus the results presented so far reveal that effective Hindi teachers as compared to ineffective Hindi teachers have been found to be higher (in terms of %age occurrence) on ‘accepting the feelings of students’, ‘using more and more acts of praising’, ‘encouraging the students’, ‘accepting and clarifying their ideas’, and ‘asking more and more questions’. The effective Hindi teachers have also shown more flexibility in communication while handling classes and have put more emphasis on subject matter. There was also a tendency in the effective Hindi teachers to be less critical. It was found that students admired and respected well the Hindi teachers who were less critical, less nagging, who reacted to pupils ideas with praise and encouragement and who made use of non-treating jokes in the class and who had a sense of humour. (ii) The effective Hindi teachers have more tendencies to praise or integrate ideas and feelings in the class discussion. The instantaneous teacher question ratio was found higher in effective Hindi teachers as compared to ineffective Hindi teachers, thereby indicate that effective Hindi teachers have shown more tendency to respond to ‘pupil talk’ with question based in his own ideas, compared to his tendency to lecture.

**Bale’s Interaction Process Categories (1996)** Before Flander, Bale developed this category system with the object of studying individual behaviour in selected social and psychological settings. The interaction is either recorded for subsequent analysis or observed and codified in a time based process.

This is a widely used system of observation, originally developed with the intention of providing a method of analyzing the behaviour of small work groups, it has, however, come to be used in instructional settings since it has categories appropriate to describe the behaviour of a teacher or pupils in a classroom, livery act of the group members is recorded in one of the twelve categories.

**Equivalent Talk Categories (ETC)**

In 1997, Bentley and Milber developed the Equivalent Talk Categories (ETC) which are ten in number and which emphasize the type and degree of intellectual exchange between the teacher and his pupil enabling us to determine the available opportunities for pupil to think and to infer in the classroom. This appears to be of rather limited value. Whatever system to be use, it
should be remembered that the validity of interaction depends upon the accuracy of observation and training of observers.

Suhag (2001) conducted a study on Interactional Analysis of Classroom Behaviour of Effective and Ineffective History Teachers. The main objectives of the study were: (i) to prepare the tools for the measurement of teacher effectiveness. (ii) to identify the effective and ineffective teachers on the basis of criterion measures. (iii) to compare the teacher-pupil interaction patterns of the effective and ineffective teachers on the basis of Flanders Interaction Analysis Category System (FIACS). (iv) To compare the non-verbal aspects of classroom behavior of effective and ineffective teachers. (v) to compare the judgements of the effective and ineffective teachers vise-vis their pupils. 140 teachers teaching History to 11\textsuperscript{th} and 12\textsuperscript{th} classes in Senior Secondary Schools of Haryana State were randomly selected as the sample for the study. Besides this 1000 students and 30 Principles also participated in the study. The investigator employed a number of tools for the study. Some of these tools were specially constructed ineffective teachers, student ratings scale; Principle rating scale and self assessment scale were utilized. For observation of the teacher’s verbal behaviour in the classroom an observation schedule based on Flanders Interaction Analysis Category System (FIACS) was employed. Whereas for the measurement of non-verbal aspect of teacher behaviour in the classroom a self constructed checklist was administered. For recording judgements of the teachers in the classroom an interview schedule prepared by the investigator was administered.

Main findings of study were: (i) the proportion of ‘teacher talk’ in case of ineffective teachers. (ii) the extent of ‘pupil talk’ was found to be higher in the classroom managed by effective teachers than that of ineffective teachers. (iii) the periods of ‘silence’ or ‘confusion’ were found to be comparatively more in the classes of ineffective teachers than in case of effective teachers. (iv) Accepting the feelings of student’s were found to be more in the case of effective teachers than ineffective teachers. (v) ‘Praising and encouraging’ the pupils have been found more in case of effective teachers as compared to ineffective teachers. (vi) The effective teachers were found to make more use of the ideas of pupils and try to build and develop their discussion on ideas suggested by pupils. The ineffective teachers on the other hand discouraged their pupil from expressing or suggested any idea. (vii) It has been found that ineffective teachers spent more than 75% of the total interaction time in lecturing whereas effective teachers spent about 33% of the total interaction time in lecturing inside the classroom. (viii) the effective
teachers were found to criticize the student less than the ineffective teachers. (ix) The tendency of asking questions on the part of the effective teachers was high. It was very less in case of ineffective teachers. (x) The effective teachers were found to encourage and appreciate more of ‘pupil talk interaction’ and ‘pupil talk response’ as compared to ineffective teachers. (xi) Indirect teacher talk was found to be significantly high in case of effective teachers. (xii) The effective teachers were found to exhibit greater tendency of encouraging the pupil initiation as compared to ineffective teachers. (xiii) The teacher pupil interaction was found to be on higher side in case of class conducted by the effective teachers. Whereas ineffective teachers seemed to restrict the student participation in the classroom. The effective teachers in comparison to ineffective teachers were found to be significantly higher on classroom interaction behavioural ratios viz; (xiv) Teacher Response Ratio (TRR), Teacher Question Ratio (TQR), Pupil Steady State Ratio (PSSR), Instantaneous Teacher Response Ratio (ITRR), Indirect/Direct Ratio and Instantaneous Teacher Question Ratio (ITQR). However, they were found significantly lower on vicious circle than ineffective teachers. (xv) It was found that effective teachers in comparison to ineffective teachers accept; clarify; praise and encourage and develop the ideas expressed by the pupils inside the classroom. (xvi) The effective teachers as compared to ineffective teachers were found to be smiling, expressing a jolly mood, patting the students, move to each student inside the classroom for paying individual attention during the conduct of their class. (xvii) The effective teachers were found not to experience blushing during the run of the classroom lecture. They were found not to be habitual of slapping their students in presence of other students in the classroom. (xviii) The ineffective teachers in comparison to effective teachers were found to move frequently outside the classroom and also peep outside through the windows during the conduct of the class. (xix) The ineffective teachers as against the effective teachers were found to get irritated easily and snatch the papers from students. They also showed greater tendency of kicking the student inside the classroom. They were found to yell, turn pale, perspire, and stumble with benches and desks during the conduct of their class. (xx) On the basis of student evaluation it was found that effective teachers were impartial in giving rewards and punishments and gave fair treatment to their students. (xxi) It was found that effective teachers as against ineffective teachers exhibit a greater tendency of giving identical attention to all the students inside the classroom. They also gave proper guidance and advice to their students. (xxii) The teachers who were ineffective found to be biased in dealings with their pupils than effective
teachers as reported by the students. It was also reported by the students that the effective teachers provided their own books and learning materials to them and treated them as their friends. (xxiii) The effective teachers in comparison to ineffective teachers were found to be aware about the specific needs of each student in the class and commended greater respect from their students. (xxiv) It was found that effective teachers are not compromising their integrity and honesty in the classroom. It was also found that effective teachers did not show any kind of nepotism and favouritism and took a genuine interest in student affairs.

Chugh (2004) conducted a study on Interactional Analysis of main objectives of the study were: (i) To prepare the tools for the measurement of teacher effectiveness. (ii) To identify the effective and ineffective teachers on the basis of criterion measures. (iii) To compare the teacher-pupil interaction patterns of the effective and ineffective teachers on the basis of Flanders Interaction Analysis Category Systems (FIACS). (iv) To compare the non-verbal aspects of classroom behaviour of effective and ineffective teachers. (v) To compare the judgements of the effective and ineffective teachers visa-vis their pupils.

140 teachers teaching Hindi to 11th and 12th classes in Senior Secondary Schools of Haryana State were randomly selected as the sample for the study. Besides this 800 students and 20 Principles also participated in the study. The investigator employed a number of tools for the study. Some of these tools were specially constructed and developed for the study. For identification of effective and ineffective teachers, student ratings scale, Principle rating scale and self assessment scale were utilized. For observation of teacher’s verbal behaviour in the classroom an observation schedule based on Flanders Interaction Analysis Category System (FIACS) was employed. Whereas for the measurement of non-verbal aspect of teacher behaviour in the classroom a self constructed checklist was administered. For recording judgements of the teachers in the classroom an interview schedule prepared by the investigator was administered.

The study concluded that: (i) the proportion of ‘teacher talk’ in case of ineffective teachers was significantly higher than that of effective teachers. (ii) The extent of ‘pupil talk’ was found to be higher in the classroom managed by effective teachers than that of ineffective teachers. (iii) The periods of ‘silence’ or ‘confusion’ were found to be comparatively more in the classes of ineffective teachers than in case of effective teachers. (iv) ‘Praising and encouraging’ the pupils have been found more in case of effective teachers as compared to ineffective teachers. (v) The effective teachers were found to make more use of the ideas of pupils and try to
build and develop their discussion on ideas suggested by pupils. The ineffective teachers on the other hand discouraged their pupil from expressing or suggested any idea. (vi) It has been found that ineffective teachers spent more than 80% of the total interaction time in lecturing whereas effective teachers spent about 35% of the total interaction time in lecturing inside the classroom. (vii) The tendency of asking questions on the part of the effective teachers was high. It was very less in case of ineffective teachers. (viii) The effective teachers were found to encourage and appreciate more of ‘pupil talk interaction’ and ‘pupil talk response’ as compared to ineffective teachers. (ix) Indirect teacher talk was found to be significantly high in case of effective teachers. (x) The effective teachers were found to exhibit greater tendency of encouraging the pupil initiation as compared to ineffective teachers. (xi) The teacher pupil interaction was found to be on higher side in case of class conducted by the effective teachers. Whereas ineffective teachers seemed to restrict the student participation in the classroom. The effective teachers in comparison to ineffective teachers were found to be significantly higher on classroom interaction behavioural ratios viz; Teacher Response Ratio (TRR), Teacher Question Ratio (TQR), Pupil Steady State Ratio (PSSR), Instantaneous Teacher Response Ratio (ITRR), Indirect/Direct Ratio and Instantaneous Teacher Question Ratio (ITQR). However, they were found significantly lower on vicious circle than ineffective teachers. (xii) It was found that the teaching of effective teachers was more content-oriented than the teaching of ineffective teachers. (xiii) It was found that effective teachers in comparison to ineffective teachers accept; clarify; praise and encourage and develop the ideas expressed by the pupils inside the classroom. (xiv) The effective teachers as compared to ineffective teachers were found to be smiling, expressing a jolly mood, patting the students, move to each student inside the classroom for paying individual attention during the conduct of their class. (xv) The ineffective teachers in comparison to effective teachers were found to move frequently outside the classroom and also peep outside through the windows during the conduct of the class. (xvi) The ineffective teachers as against the effective teachers were found to get irritated easily and snatch the papers from students. They also showed greater tendency of kicking the student inside the classroom. They were found to yell, turn pale, perspire, stumble with benches and desks during the conduct of their class. (xvii) On the basis of student evaluation it was found that effective teachers were impartial in giving rewards and punishments and gave fair treatment to their students. (xviii) It was found that effective teachers as against ineffective teachers exhibit a greater tendency of giving identical attention to all the
students inside the classroom. They also gave proper guidance and advice to their students. (xix) The ineffective teachers were found to be biased in dealings with their students than effective teachers as reported by the students. It was also reported by the students that the effective teachers provided their own books and learning materials to them and treated them as their friends. (xx) The effective teachers in comparison to ineffective teachers were found to be aware about the specific needs of each student in the class and commended greater respect from their students.

**Kin Hai and Siew Bee (2006)** “Effectiveness of interaction analysis feedback on the verbal behaviour of primary school mathematics teachers” The study attempted to investigate the relative effectiveness of interaction analysis feedback on the verbal behaviour of teachers teaching mathematics in primary 5 classes of four randomly selected primary schools in Brunei-Muara District. Results showed that the feedback groups accepted student’s feeling more, praised students more, used student’s ideas and initiated more student talk in the classroom. Effects of feedback were encouraging with higher student academic achievement and more favourable attitudes after teachers were given feedback.

**Kashinath, H.M. (2008)** “Motivational correlates of emotional intelligence of secondary teacher’s trainees” at studied and got concluded that recent finding have identified as the single most facts predating and happening in life.

**Hopkins and Moore (2009)** “Investigated the effects of FIACS feedback on verbal behaviours of teachers” and found that teachers who received feedback differed significantly in their use of certain verbal behaviours from those who did not receive feedback. Teachers who received feedback were found to use more praise, accept and clarify student ideas more, use more indirect talk, use more positive reinforcement after teacher-initiated student talk, use less corrective feedback, criticize students less, ask more questions, use less lecture method, and give fewer directions and teacher-initiated talk.

### 2.2 Studies on Interactional Analysis in General

Flanders conducted a number of studies involving several grades and different subjects to relationship between teacher influence, pupil attitude and pupil achievement. Flanders (1965, 69, 70) provided the necessary details. Teacher influence was found to have positive relationship with adjusted pupil achievement and pupil attitude. In Flanders own words, the conclusions can be summarized as:
“In six out of seven projects, it appears that when classroom interaction patterns indicate that pupils have opportunity to express their ideas, and when these ideas are incorporated into learning activities, the pupil learn more and develop more positive pupil attitudes towards the teacher and the learning activities” Morrison (1966) found significant relationship between teacher influence and adjusted pupil achievement scores of language usage, social study skill and arithmetic computation and problem solving and attitudes. Nelson (1964) found similar results in a study of learning linguistic skill. Simon and others (1966) reported that students teachers trained in interaction analysis tend to be more accepting, have more student initiated talk, are less directive, less critical, have more extended student initiated talk and less silence and confusion than the students trained in learning theory alone when both student teachers and co-operating teachers know interaction analysis, the students have maximum opportunity to develop their own styles of teaching and appear to increase individuality in teacher behaviour. Pareek and Rao (1970) revealed that about 55% of the time was spent in teacher talk by Delhi teachers. In 67% of the periods observed, the teacher used direct influence behaviours. Only 11% of the observed periods, the teachers used more indirect influence than the direct influence. No sex differences were reported in the study. Kirk (1967) also supports the training in interaction analysis as means of developing indirect teacher influence. Lohman (1967), following up 30 student teachers who were trained in interaction analysis prior to student teaching with a control group of 30 students teachers who had not been trained so, found that the student teachers in the experimental group used more indirect and less direct teacher behaviours than control group in their student teaching even after 4 to 12 months after their training in interaction analysis. Hough and Amidon (1967) in a study to test effectiveness of the two courses, one based on interaction analysis and another on learning theory, found that the student teachers trained in interaction analysis were found to be more effective than the control group in their student teaching. Weber (1968) found pupils with teachers using indirect influence in the classroom scoring higher on verbal creativity than pupils with teachers using direct influence.

Buch and Santhanam (1970) made an exploratory study of the possibility of using Flanders ten category system of classroom analysis in Indian schools as well as to explore the classroom behaviour of the teacher of English as exhibited through the teacher pupil verbal interaction. They concluded that the numerous and far reaching influences that have been made through indicate the usefulness of Flanders ten-point scale of measuring classroom interaction to
study teacher behaviour and vouch for its usability in Indian conditions. The interaction analysis as an index of teacher effective possesses great potentialities both in teacher training programmes and in service training programmes where in desired modification of teacher behaviour might be attempted in the light of the interaction analysis results.

Mitra Jr. (1971) observed 78 teachers teaching different subjects in 17 schools of Jabalpur, using FIACS and administered attitude questionnaire to the students under the charge of these teachers. The investigators report a positive tendency on the part of the pupils to like teachers who use indirect influence. Nath (1971) conducted an experiment to study the effect of feedback based on interaction analysis using (FIACS). Twenty four women B.ED trainees were involved, pre-training observation revealed that the experimental group, after training in interaction analysis, talked less, had higher i/i+d ratios, and higher pupil initiation, than the control group.

Qureishi (1972) studied relationship between teacher’s personality variables and their classroom behaviour using FIACS. He found only teacher attitudes to be associated with classroom behaviour of teachers. Jangira (1972) reports an experiment in modifying classroom behaviour of teachers using feedback on Flanders Interactional Analysis Category System. He revealed that the higher responsiveness, flexibility in teacher influence and indirectness resulted in higher adjustment, classroom trust behaviour and independence. Sharma (1972) in her experiment analyzed the effectiveness of four significant patterns of behaviour in classroom of the teachers on pupil’s achievement in relation to knowledge, Comprehension and application as instructional objectives. FIACS was used for training the teachers in the behaviour patterns selected for the treatment.

Das gupta (1976) observed that organization of teaching learning process and out of school activities have an impact on the efficiency of the teacher. Koul (1976) concluded that the popular teacher differ significantly from the unpopular ones in the direction of using more and more acts of praising and encouraging the students, accepting and clarifying their ideas and putting more and more questions to them. The popular teachers also showed flexibility in communication while handling classes and put more emphasis on the subject matter. There was also a tendency in these teachers to be less critical and less authoritative. Singh and Sharma (1978) conducted a study on verbal behaviour of student teachers and concluded that the interaction analysis group used more praise and encouragement than lecturing. Used less
extended direct talk, gave fewer directions, did less teaching initiated talk, used more teacher response, enthused more pupil initiation and laid more emphasis on motivation in the classroom than non-interaction analysis group.

Dunn (1978) studied the effects of instruction in verbal and non-verbal interaction analysis and micro teaching on the verbal and non-verbal teaching behaviour of selected ‘Home economics’, student-teachers. Mehta (1978) revealed that no relationship is found between the teacher’s age and their way to communicate in the classroom. There was no relationship between the sex of the teachers and three measures of teacher communication patterns, i.e., i/d, I/D and TQR and significant negative relationship was found between the sex of the teachers and one of the four measures of teacher communication patterns-TRR. And teacher experience in general was reported to have no relationship with communication patterns the teachers used in their classroom.

Raijiwala (1978) found that the training in FIACS modified the teachers behaviour positively. Mean difference between pre and post observation I/D ratios was significant at 0.01 level in the case of the experimental group of teachers and was not significant at 0.01 level in control group of teachers. It was also found that the training and feedback given to the experimental group were found positively effective on the pupil’s adjustment, classroom trust and academic achievement in science.

Sharma (1979) conducted an exploratory study of certain aspects of classroom behaviour of Science Teacher in the Macro and Micro- teaching situations using Interaction Analysis. The objective was to study a reliable Category System for first-hand systematic observation of classroom instruction in science.

The major findings of the study were: (i) Teacher’s talk was six times more than student talk. (ii) Very little time was spent on praising and developing student’s ideas. (iii) There was no short question-answer pattern discernible in their teaching which was found in product type learning. (iv) Students got few opportunities to add to their own ideas or to initiate discussion on their own initiatives. (v) The highest frequencies was covered by the cells (5.5) in which the teacher’s lecture was 42.31 percent- the second highest frequencies was occupied by the cell (10.10), silence/confusion which was 19.39 percent. (vi) The teacher dominated in the class too much as shown by the structuring of the teaching (51.4%). (vii) Over 6.5% of the total time 5.5 percent of the total time was spent on structuring the material when the teacher used resource
material/charts/maps/diagrams and showed models/demonstratives experiments. (viii) The nature of influence patterns of teachers was very much direct and (ix) Sex and grade did not play an important part in shaping the teacher’s influence.

Singh, (1980) in his study revealed that a negative correlation between teachers perceived self including its intellectual dimension and teacher talk in the classroom, but the relationship was not found to be significant. A positive and significant correlation was found between teachers perceived self including its intellectual dimension and student talk. A significant positive relationship was found between teachers perceived self including its intellectual dimension and indirect/direct (I/D) teaching behaviour. A significant positive relationship was found between teachers’ perceived self and their use of student ideas.

Crawford (1980) determined the changes in teacher behaviour during the course of a special emphasis reading project and noted the significant decrease in restricting non-verbal behaviour, significant decrease in direct verbal behaviour and significant increase in student talk.

Massey (1981) conducted a study of the effects of training on Behavioural Objectives on classroom verbal behavior of In-service Teachers and reported. (i) They laid emphasis on lecturing, were less authoritative, less commanding and less critical and encouraged students to supplement their answers with additional information based on independent judgement. (iii) The teacher showed significant gain in the pupil talk ratio indirect talk ratio, indirect/direct ratio teacher response ratio. The training led to reduction in talk ratio, content cross ratio, steady state ratio and vicious circle. (iv) Significant gain in indirectness, questions, praise and flexibility were observed with reduction in teacher talk, restrictiveness, restrictive feedback and negative authority. (v) The flow pattern following the training revealed shorter question followed by short answers by students, frequent acceptance ideas as well as clarification and by the teachers.

Rastogi (1989) found that biology teachers of public and government schools were found to differ in their verbal interaction pattern in respect of criticizing and pupil talk. The teacher talk was the dominant behaviour of both the groups of teachers and the teachers of the both the groups used direct influence more than indirect influence.

Khatoon (1990) found that high status is significantly and positively related to the motivational and silence behaviour and negatively related to lecture; opportunities for social service is significantly related to lecture and negatively to motivational behaviour and questioning; opportunities for intellectual stimulation and freedom of work are positively and
significantly related with TQR and SSR respectively, co-operating colleagues have negative and significant correlation with I/D and TQR.

Roy (1992) revealed that some of the behaviours such as lecturing, asking questions, accept feelings, are more commonly used by almost all the teachers; praise and reward, acceptance and clarification and asking questions are more used by indirect teachers, lecturing is more used by direct teachers than indirect teachers. Sharma (1992) found that there is significant difference between Nagames and Telugu, Nagames and Malyalam, Nagames and Punjabi, Nagames and Hindi teachers with regard to I/D ratio. Nagames Hindi teachers use less restrictive behaviour as compared to other regional Hindi teachers, with regard to restrictive behaviour component, and that Nagames Hindi teachers have significant difference with other region language Hindi teachers, with regard to indirect behaviour component.

2.3 Studies on Teacher-Classroom Behaviour

Benerji (1956) while observing the classroom behaviour of successful teachers arrived at the conclusion that successful teaching requires qualities like quick thinking, ready wit and humour on the part of the teacher.

Johns (1968) concluded a study to find out indirect teacher eliciting higher level of questions from the pupils than the direct teachers, through the incidences is very low.

Dubey (1979) studied Relationship between pupil characteristics and classroom behaviour of teacher. The study was conducted with the objectives: (i) to present a detailed process of interaction analysis and its application in the mathematics class of high school. (ii) To interpret the 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 problems of pupils and teachers, to help him gain insight concerning the nature of teaching and learning process and to aid him achieve competence in the evaluation of the classroom behaviour and (iv) To inculcate among teacher-trainees appreciation of responsibilities inherent in the role of the teachers.

To findings of the study were: (i) The classroom verbal behaviour of the teacher had positive relation with pupil characteristics. (ii) The teacher classroom verbal behaviour and in aesthetic, social and clerical interest factors. (iii) The classroom verbal behaviour of teacher had no positive relation with the attitude of pupils and 4. The classroom verbal behaviour of teacher had positive relation with the achievement of pupils.
Singh (1979) conducted a study related to Simulated Social Training and Modification of Teacher classroom behaviour.

The study was aimed at assessing the usability of Simulated Social Skill Training (SSST) in teacher training programme as well as its effectiveness in improving the classroom teaching behaviour. It was reported that: (i) The classroom behaviour of students-teachers in desirable directions could be modified through SSST. (ii) The SSST technique was more effective than the classroom behaviour’s teachers and (iii) The SSST technique was also more affective than the traditional method in developing favourable attitude among student-teachers toward the teaching profession.

Mathew (1980) reported that factor analysis resulted in 14 factors which accounted for 68.3% of variance. These included competencies of teacher’s concern of students, using audio visual aids, professional perception, giving assignments, illustrating with examples, introducing logical exposition, classroom management, use of questions, initiation pupil participation, use of black-board, recognizing attending behaviours and achieving a closure.

Pangotra (1981) revealed that the successful teachers dominate the class discussion. The main focus of classroom is subject matter. Attention to motivation and discipline problem is minimum through the teachers exhibit comparatively a greater tendency to praise or integrate pupil idea into class discussion than to criticize their ideas. He further observed that the successful teachers try to soften the use of teacher authority by making it more responsible, understandable and less authoritative. The teachers have a great inclination to respond to pupil talk with questions.

The interchange between the teacher and the pupil is not rapid. Pupil talk is below average. The silence or confusion prevailing in the classes taught by the successful teacher is a little above the normative expectations.

Kharuria (1981) conducted a study on the typical pattern of classroom verbal Behaviour Exhibited by successful teachers of language and science.

The specific objectives of study were: (i) To identify successful teachers, and (ii) To find out their typical patterns of verbal behaviour. The tools used were the mark-sheet of the students, headmasters rating of teachers’ success and pupils rating of teachers’ success. Initially, 250 secondary school teachers teaching language and science were randomly selected. At the final stage, 72 teachers were selected for the study of their verbal pattern.
The main findings of the study were: (i) The science teacher exhibited patterns of asking questioning, giving directions, Soliciting initiated pupils talk, sustained teacher initiated pupil talk, flexibility and teacher talk according to normative expectations. (ii) For the language teachers the patterns of higher proportion of student talk to teachers talk were found to be of normative expectations. (iii) Science teachers resorted more to asking questions and lecturing than language teacher.

Suthar (1981) conducted a study of classroom behaviour of teacher-trainees in the counter act of some personality variables. The main conclusions of investigation were: (i) There was no significant difference in the classroom behaviour of emotional and tough teacher-trainees except in the case of I/D which was found to be significant at 0.05 level in favour of emotional teacher-trainees. (ii) The classroom behaviour of emotional once conservative teacher trainees did not differ significantly. (iii) There was no significant difference in tough teacher-trainees expect in the case of Teacher Questioning Ratio (TQR) which was found to be significant at 0.05 level in favour of submissive teacher-trainees. (iv) The classroom behaviour of submissive and confident teacher-trainees also did not differ significantly. (v) The classroom behaviour of mature and dominant teacher-trainees also did not differ significantly. (vi) The classroom behaviour of submissive and conservative teacher-trainees was insignificant except in the case of TQR. (vii) The classroom patterns of extrovert and emotional and extrovert and submissive teacher-trainees were insignificantly different. (viii) There was no significant difference in the classroom behavior of exponent and tough teacher-trainees except in the case of TQR. (ix) There was no significant difference in the classroom behaviour of sensitive and insecure teacher-trainees except in the case of Teacher Response Ratio (TRR) which was found to be significant at 0.05 level in favour of sensitive teacher-trainees. (x) There was no significant difference in the classroom behaviour of introvert and conservative teacher-trainees. (xi) There was no significant difference in the classroom behaviour of extrovert and conservative teacher-trainees except in the case of TQR which was found to be significant at 0.01 level in favour of extrovert teacher-trainees and (xii) The difference in the mean C.D. ratio of extrovert and introvert and introvert teacher-trainees was significant at 0.05 level and it was in favour of extrovert teacher-trainees.

Jain (1982) conducted a study of classroom behaviour Patterns of Teacher in relation to their Attitude towards Profession, Morale and values. The study was conducted to trace out the
relationship between (i) the teacher attitude towards profession and the classroom behavior patterns of teachers. (ii) The teachers’ morale and the classroom behavior patterns of teachers. (iii) The teachers’ attitude towards profession and the teacher morale. (iv) The teacher morale and the teacher’s values and (v) The teachers values and the teachers attitude towards profession and to product the classroom behavior patterns of teachers through the teacher attitude towards their profession the teachers morale and the teacher values taken in combination.

The sample of the study consisted of 100 trainees graduate teachers (50 male and 50 female) teaching mathematics in class VIII of the government higher secondary schools of Delhi Data regarding teachers attitude towards profession, morale and values were obtained by the Teacher Attitude Inventory of S.P. Ahluwalia Purdue teachers of Questionnaire by Bentty and Rempel and Hindi adaptation of all part version study of value by R.K.Ojha. Two mathematics lessons of each of the one hundred teacher were observed by the investigator using Flanders Interaction Analysis Category System. The Interval between the first and second observation of the lesson was approximately a week.

The findings of the study were: (i) Male teacher devoted more time in asking question than female teacher. (ii) Pupils interacted differently in the classes of married, unmarried teachers. (iii) Teacher with a positive attitude towards child-centered practices educational process, pupils and teachers devoted more time to asking questions in the classroom while guiding the more content-oriented part of the classroom discussion. (iv) Teacher with a positive attitude towards teaching profession, classroom teaching, child centered practices and educational proves reacted to ideas and feeling of pupils and frequently created an emotional climate in the classroom. (v) Pupils interacted more in the classes of teachers having a positive attitude towards teaching profession, pupils and teachers. (vi) There was significant positive relationship between teachers’ status teachers’ questions. (vii) Teachers who had full freedom to discuss controversial issues in the classroom asked more question. (viii) Pupils interacted more in the classes of the teachers who enjoyed rapport with the principle. (ix) There was significant positive relationship between social values and the proportion of indirect behaviour to direct behaviour including content emphasis. (x) Theoretical and aesthetic values were not significantly related to the affective behaviour of teachers. (xi) Pupils interacted less in the classes of teachers having political and religious values. (xii) Young teachers had more favourable attitude towards teaching profession, classroom teaching and educational process than older teachers. (xiii) Sex
was not significantly related to any dimension of the teachers’ morale. (xiv) There was significant negative relationship between the teaching experience and the teacher’s attitude to classroom teaching. (xv) There was significant positive relationship between the age of the teacher and the religious values. (xvi) Married, unmarried and descated teachers differed with respect to theoretical values. (xvii) The interference of the community in the educational programmes was not favoured by teachers. (xviii) The teachers’ attitude towards educational process had significant negative relationship with teacher and community support to education. (xix) Satisfaction with teaching was positively related to the theoretical and political value. (xx) There was significant negative relationship between the curriculum issues and the political value. (xxi) The theoretical value was significantly negatively related with the teachers’ attitude towards pupils and teachers. (xxii) Teachers with a high aesthetic value did not have a favourable attitude towards teaching profession and teacher. (xxiii) Teachers with high religious value had favourable attitude towards teaching profession, educational process and pupils and teachers.

**Jain (1983)** conducted a study on Non-verbal Classroom Interaction Patterns of Language, Social-Studies and Science Teachers. The objectives of the study were: (i) To compare non-verbal interaction patterns of language, social-studies and science teachers and (ii) To compare non-verbal interaction patterns of male and female teachers.

The sample comprised 299 student-teachers. The cluster random technique was employed to select the sample. The sample belonged to six training colleges of Rajasthan University. The age of subjects ranged from 18 to 37 years. The observation instrument was the French-Galloway adaptation of the Flanders System for Interaction Analysis called Indirect-Direct Encouraging-Restricting (IDER) which considered combined verbal and non-verbal as well as the non-verbal dimensions of classroom interaction.

The findings were: (i) Male language teachers had a greater tendency towards responsive lecturing, unresponsive lecturing, attentive-student talk response, inattentive-student talk initiating and distressful silence. Female language teachers seemed to have greater behaviours of 2, 4, 6, 8, 10, 12 and 16 categories than male language teachers. (ii) Male social studies teachers used 9, 12, 15, 17, 19 and 20 behaviour categories more. Female social studies teachers used 2, 5, 6, 7, 10 and 16 behaviour categories more. (iii) There was a greater tendency for 4, 5, 8, 9, 15 and 19 categories in male science teachers. Female science teachers used 2, 3, 10 and 20 categories more than male science teachers. (iv) Language teachers showed a greater tendency for
3, 4, 6, 7, 10, 13, 16, 17 and 20 categories in comparison to social studies teachers, while social studies teachers used 5, 14 and 15 categories more than language teachers. (v) Social studies teachers used 5, 8, 14, 15, 16, 18 and 19 categories more than science teachers. Science teachers had a greater tendency for 3, 4, 6, 9, 10, 13 and 20 categories than social studies teachers. (vi) Female language teachers showed significant difference from male language teachers for E/R ratio and S/T ratio. (vii) There was significant difference between male and female social studies teachers for E/R ratio. The female social studies teachers showed a greater tendency for this behaviour. (viii) There was no significant difference between male and female science teachers for any ratio. (ix) Language teachers differed significantly from social studies teachers for I/D ratio and S/T ratio. (x) There was significant difference between language and science teachers for I/D and I/D ratio. Science teachers showed greater tendency for these behaviours. Language teachers seemed to have more student-talk than science teachers. (xi) Science and language teachers differed significantly on encouragement and indirectness. Science teachers were more encouraging non-verbally and more indirect in their verbal behaviour. (xii) There was no significant relationship between the amount of encouragement, non-verbal behaviour and indirect verbal behaviour. (xiii) Male language teachers had larger transitions from responsive lecturing to unresponsive lecturing, from impersonal questioning to inattentive pupil response and from inattentive pupil response to involving direction, whereas female language teachers had greater transitions from harsh criticism to involving direction, from personal questioning to attentive pupil response and from attentive pupil response to involving direction. (xiv) Male social studies teacher had greater transitions from involving direction to impersonal questioning and inattentive pupil response, and from distressful silence to harsh criticism while in female social studies teacher, attentive pupil response was followed by impersonal questioning, responsive lecturing and involving direction more. (xv) Unresponsive lecturing was more for female science teachers while comforting science and distressful silence were more for female science teachers.

Bisht (1985) indicated that verbal and non-verbal classroom behaviour were related to the personality characteristics of the teachers, in the similar way classroom behaviour was the function of the personality of teachers.

Rao (1987) conducted a study on Classroom Teaching of Effective Science Teachers- An Analytical Study. The main objectives of the study were: (i) To identify effective science
teachers on the basis of selected criteria, and (ii) To analyze the teacher behaviour of selected effective science teachers with respect to their content processing behaviour, interactive behavior and teaching skill behaviour.

Findings of the study were: (i) Among the content-process employed by the effective science teachers to process the components of content, irrespective of the topics and subject, analysis and assumption content processes were found common with all the teachers. (ii) Other content processes like categorization, application of principles and logical reasoning were meagerly employed, only by a few effective teachers. (iii) There were no concurrence ininteractive patterns observed with the teachers. (iv) Some of the teachers were moderately interactive, whereas a few were not at all interactive. (v) Teacher-initiative interactive patterns were often observed with all the effective science teachers. (vi) Among the teacher-initiated interactive patterns, were found in common with all the teachers, although was a variation of degree in making use of such key interactive patterns from teacher to teacher. (vii) Explaining skills like providing information and clarification were seen consistently with all effective science teachers without any particular sequence or pattern. (viii) Some of the effective science teachers were found to be using certain new component teaching activities like drawing and derivation which could be considered as component teaching skills. (ix) The coordination between verbal and non-verbal skills was not prominent although using the black-board, gestures, movement, focusing and silence and non-verbal cues were observed with all verbal skills.

Yadav (1987) Interaction Analysis of Classroom Behaviour of high school Biology Teacher in relation to Pupil’s achievement and Attitude. Main objective of the study were: (i) To analyze high school biology teachers classroom communication into various components in order to compare them with American school norms. (ii) To compare the classroom behaviour patterns of effective and non-effective biology teachers. (iii) To find out the relationship between indirectness as shown by I/D and I/D ratios with pupil achievement. (iv) To find out the relationship between in teacher behaviour as shown by I/D and I/D ratios with pupil achievement. (v) To compare the pupil achievement of high I/D and low I/D groups of teachers. (vi) To compare the pupil achievement of high I/D and low I/D groups of teachers, and (vii) To highlight the classroom behavior patterns of highly effective biology teachers identified on the basis of average pupil achievement.
The investigation was carried out on an ex-post facto basis with 100 high school biology teachers and their 1000 biology students taken from four districts of eastern U.P. The method applied was proportionate stratified random sampling. The tools used were Flanders Interaction Analysis Category System (FIACS), an Achievement Test in Biology for High School Biology Students, and a Student Attitude Scale. Separate 10x10 matrices, combined matrices and master matrices were prepared for study of teachers’ behaviour. Co-efficient of correlation were computed between indirectness in teacher behaviour and pupil achievement and attitudes.

The findings of the study revealed: (i) Biology teachers in high schools of eastern U.P. talked about 72.63 percent of the time during classroom verbal interaction. There was only 9.8 percent opportunity for students to talk, most of which was response and not initiation. Silence and confusion consumed 17.54 percent of the time in these classrooms. Lecturing by teachers was the most dominant behaviour category. This occupied 70 percent of the total teacher talk and 51 percent of the total classroom communication. When a comparison of these biology teachers was made with American school norms along the variables of TT, ST, S/C, TQR/PIR and PSSR, it was found that there was marked difference between the interaction patterns of the teachers in the two countries. (ii) There was a significant difference between classroom behaviour patterns of effective and non-effective biology teachers at high school level in eastern U.P. (iii) Indirect teacher behaviour as shown by I/D and I/D ratios was not found related with student achievement in biology at high school level. (iv) Indirectness in teacher behavior was found positively related with pupil attitudes towards their teachers at high school level. (v) Pupils achievement under the high I/D group of biology teachers was found superior to those under the low I/D group of teachers. But high I/D and low I/D teachers did not seem to bring out such difference in their student achievement. (vi) Highly effective biology teachers talked about 73 percent during classroom communication. Their most important pattern was the lecture pattern.

Singh (1988) conducted a study on the verbal interaction of teachers in class and attitude towards teaching. Objective of the study was to develop a category system for the systematic observation of teachers and for determining the relationship between observed behaviours and measures of teacher’s attitude. The main findings: (i) Indirect influence, pupil talk, indirect-to-direct ratio, pupil initiation ratio, teacher response and question ratios appeared to be significantly related to attitude towards in male and female groups, teaching-subject groups and
teaching classes. (ii) There was a significant relationship between attitude towards teaching and classroom verbal interaction of student-teachers at the secondary level. (iii) Lecturing, criticizing and justifying authority, direct influence and restrictiveness were found to be negatively correlated with attitude towards teaching in male and female groups and in language, social-studies, and science and mathematics groups. (iv) Pupil talk and pupil initiation ratio were found to be associated with attitude towards teaching in male and female groups, teaching subject groups and teaching classes.

Singh (1989) conducted a study on the effect of training through Flanders Interaction Analysis Technique on classroom behaviour of in-service secondary school teachers in relation to some presage variables with the objectives: (i) to evaluate whether the training of teachers through FIACS modifies their behaviour or not. (ii) to study whether the teaching subject influences the classroom interaction patterns or not. (iii) To see the effect of qualifications of the modification of behaviour of teachers, (iv) To examine whether the personality traits (extraversion-introversion) influence the classroom behaviour of teachers or not. (v) To study whether the achievement of students is affected by the teaching behaviour of the teacher. (vi) To ascertain the role of teaching experience in modification of behaviour of the teachers, and (vii) To compare the student’s liking towards their teachers having different classroom interaction patterns.

Findings of the study were: (i) Teachers trained in FIAT became indirect in their teaching behaviour, whereas teachers without training remained direct in their teaching behaviour. (ii) Science teachers were found to be more indirect in their teaching behaviour in than social studies teachers, irrespective of the treatment, which may be due to nature of the subject. (iii) Postgraduate trained teachers were more indirect in their teaching behaviour than social studies teachers irrespective of the treatment; this may be due to the nature of the subject. (iv) Teachers with fewer number of years in service were indirect in their teaching behaviour was compared to teachers who had put in more years of service. (v) Extravert and introvert teachers did not differ in their teaching behaviour patterns significantly. (vi)Students taught by indirect teachers achieved significantly more and showed greater liking for their teachers taught by direct teachers.

Tassew (1992) conducted a study on Classroom verbal behaviour of teacher-trainees in Ethiopia in relation to their intelligence, self concept and attitude towards teaching with these
objectives: (i) To study the salient features of the patterns of classroom verbal behaviour of science teacher-trainees of Addis Ababa University, and (ii) To investigate the extent of the impact of the presage variables of intelligence, self concept, and attitude towards teaching upon classroom verbal behaviour. Findings of the study were: (i) The science teacher-trainees were found to be very talkative. (ii) Most of the classroom verbal interactions were limited to the question-response pattern and silence and confusion. (iii) The flexibility in communication was observed to be higher in the classes of female teacher-trainees. (iv) Female teacher-trainees exerted extended direct influence more than male science teacher-trainees. The interaction effect of intelligence, self concept and attitude was found to be significant upon I/D, ITT, PT and SC. (v) the interaction between levels of intelligence and types of attitude towards teaching was non-significant.

Kline and Sorge (2008) “Effectiveness of Flanders Interaction Analysis Category System on verbal behaviour of teachers” at Ph.D. level studied and came to the conclusion that even teachers who were not trained in the mechanics of interaction analysis will change their classroom verbal behaviour as a result of feedback from the interaction analysis observation system.

2.4 Studies on Effective and Ineffective Teachers in General

Several studies have been conducted to find a relationship between academic achievement in professional courses and teaching success. Raina (1965), Singh (1970) and Sharma (1971) have found that academic grades have positive and high regression weight for predicting teaching success as measured by various criterion measures. Mehta (1972) have been shown that there is a difference in the teaching ability of high and low achievers. He found that teaching ability is highly loaded with achievement variables of training especially total practice teaching marks which showed that maximum expression was given to this ability in classroom teaching. Gupta (1977) and Sharma (1978) on the contrary have shown that academic achievement correlated insignificantly with teaching success. Mann (1980) found that academic achievement and achievement in professional course are positively related with teaching success. Srivastava (1980) arrived at the conclusion that teachers with high educational attainment scored significantly higher on the measure of teaching efficiency.

To analyze the relationship between intelligence and teaching success in almost all the studies, it has been revealed that intelligence correlated highly and significantly with teaching
have found that effective teachers scored higher on intelligence tests than ineffective.
Bhagoilwal (1982) has shown that more effective teachers, are by and large characterized by
their superiority over ineffective teachers with respect to their overall intellectual functioning as
reflected in their intellectual capacity; intellectual functioning empathetic and imaginative
and Nadeem (1984) have shown that intelligence emerged as one of the main predictors of
teaching success. Sherry (1964) found that interest is one of the important factors determining
the success of the teacher. Singh (1970) revealed that interest in aesthetics is also a significant
predictor of performance in theory papers as the criterion measure of teaching success. Debnath
(1971) showed that interest in teaching is related to teaching efficiency. Arora (1975) observed
that effective teachers, in comparison to ineffective are interested in attending in-service
educational programmes for their professional growth. Dosajh (1965) showed significant co-
efficient of correlation between levels of imagination and maturity and levels of skills in
teaching. Raina (1970) found positive but insignificant relationship between teaching practice
marks (criterion measure of teaching success) and fluency, flexibility and total creative scores.
He further showed that elaboration and teaching practice marks have a positive and significant
relationship while as ‘originality’ and teaching practice marks have a negative and insignificant
relationship. Singh (1978) found that highly successful teachers are having higher creative
potential. Bhagoliwal (1982) found that the more effective teachers (possess a fairly high level of
differentiation and integration in their congestive and perceptual functioning. These effective
teachers are characterized by having more of creative potential undirected by imagination
resources reflected in object and personal relations. Investigators who have addressed themselves
to the problems of teacher effectiveness have paid less attention in studying aptitude of a teacher
as an important factor of teacher effectiveness. Aptitude as a variable has been studies in very
few studies. Sharma (1971) has found that aptitude was positively related to teaching efficiency,
it had low regression weight.

Kounin (1970) found that students’ involvement in recitation was approximately 85 per
cent and involvement in seat work segments averaged 65%.

Mehta (1972) has shown that teachers with high teaching aptitude were higher on all
aptitudes of the Differential Aptitude Test- viz, verbal reasoning, numerical ability, space
relations and abstract reasoning. **Mutha (1980)** observed that effective teachers scored significantly higher on teaching aptitude test.

Various researchers have conducted several studies on the personality characteristics of the successful teachers. (**Sexena, 1969; Singh, 1970; Mehta, 1972; Pandey, 1973; Chhaya, 1974; Gurbaksh, 1974; Grewal, 1976; Gupta, 1977; Singh, 1978; Sharma, 1978; Sinha, 1980; Gupta, 1981; Bhagoliwal, 1982; Wangoo, 1984; Nadeem, 1984**). **Sexena (1969)** found that personality factors A and Q2 as measured by 16 PF questionnaires correlated highly and significantly with teaching success. **Singh (1970)** observed that factors measured by 16 PF questionnaires are significant predictors of performance of the teachers as measured by their performance in theory papers of B.ED. Examinations. **Mehta (1972)** found that high and low teachers on teaching ability are significantly different on six personality factors. The high teachers are more conscious. **Pandey (1973)** found that good adjustment in the areas of health, home, social, economic, institutional and ethical is related to professional efficiency. **Chhaya (1974)** after comparing effective and ineffective teachers concluded that effective teachers had significantly better adjustment. **Gurbaksh (1974)** has shown that high general anxiety is not associated with teaching success but high vocational anxiety is related to teaching success. This means the more vocational anxiety, the less effectiveness of the teacher. **Grewal (1976)** found that adjustment in the areas of home, health, social and emotional were the main predictors of teacher effectiveness. **Singh (1976)** observed that general adjustment of superior teachers was on a high degree as compared to that of inferior teachers. **Grewal (1976)** found that dominance submission as measured by Bernreuters personality inventory is one of the main predictors of teacher effectiveness. **Gupta (1977)** found significant difference in the personality factors of successful and less successful teachers. He further revealed that eleven out of sixteen personality factors, viz., A, B, C, D, E, F, H, I, L, N, Q3, Q4 were found significantly related to success in teaching. **Gupta (1977)** found that adjustment in the areas of home, health, social and emotional correlated significantly with success in teaching. He also showed significant difference in the adjustment of successful and less successful teachers.

**Singh (1978)** observed that highly successful teachers are assertive, venturesome, controlled emotional stable and trusting. **Sharma (1978)** found that self perception of teachers is significantly related to teaching success and that more successful and less successful teachers differed significantly on the positive dimensions of the self. **Chhaya (1978)** observed that
Effective teachers in comparison to ineffective are emotionally more stable, more extrovert and more authoritarian. On the other hand, Singh (1978) has found that more successful teachers in comparison to less successful are low introvert.

Sinha (1980) found that the personality pattern of four categories of teachers viz., Excellent, superior, very good and good included the predominant factors as excellent-conscientious, emotionally stable, controlled, outgoing, superior-conscientious, controlled, emotionally stable, shrewd, more intelligent, very good-conscious, experimenting, more intelligent venturesome, emotionally stable, good-experimenting, practical relaxed, tough minded, expedient. Mutha (1980) revealed that marital adjustment is one of the significant factors in determining teachers’ effectiveness. Mutha (1980) found that effective teachers in comparison to the ineffectiveness score higher on anxiety test. Gupta (1981) attempted to study need patterns of teachers in relation to teacher effectiveness. He found that superior teachers were distinct from inferior teachers in their needs, viz., Congestive, dominance and autonomy. Bhagoliwal (1982) concluded that more effective teachers were having a better inner control and were better in their capacity to integrate impulse with value system, in their was acceptance, socialized controlled behaviour and capacity do deal with their tension and conflicts and outer control. They had better control than ineffective teachers in terms of impression of feelings and emotions. Besides, more effective teachers had a well integrated ego-system. Wangoo (1984) had found that fourth rightness, ‘emotional stability’, practical attitude and ‘controlled behaviour’, were the most prominent factors of the effective teachers. Nadeem (1984) have shown that self perception of teachers is significantly related to teaching success and that more successful and less successful teachers differed significantly on the positive dimensions of the self.

Arora (1978) revealed that effective teachers are mostly ‘satisfied’/‘very satisfied’ with their job, whereas ineffective teachers are ‘dissatisfied’ or ‘indifferent’. Effective teachers derive satisfaction in job from good results, company of students, whereas ineffective teachers do so mainly from the financial angle. Similarly effective teachers have significantly more favourable attitude than ineffective teachers toward teaching professions, teaching personal, friendly relations between teachers and pupils, modern teaching techniques.
Balachandran (1981) reached at the conclusion that the factors of teacher effectiveness from classroom point of view are subject mastery and intellectual kindling, responsiveness, integrity and motivating concern for the students’ progress and informal academic help.

Ummekusum and Khajapeer (1985) revealed that there were no significant differences in the effectiveness of the teacher educators teaching different subjects in the B.Ed. Colleges of Education in Bangalore. The male teacher educators with BA/BSc and M.Ed. qualification were more effective than the female teacher educators with the same qualification. The female teacher educators with M.A./M.Sc. and M.Ed. Qualification were more effective than the female teacher educators who had seven and less than seven years of experience with M.A./M.Ed. Qualifications were more effective than those with the same level of experience but with B.A./B.Sc. and M.Ed. qualifications were more effective than those with the same level of experience but with M.A./M.Sc./M.Ed. qualification.

Subbarayan (1986) revealed that student’s ratings of teachers significantly correlate with the colleague’s ratings of teachers. In the similar way colleagues ratings of teachers significantly correlate with students ratings. Self ratings of teachers had a significant relationship with students’ ratings. Teacher effectiveness as rated by colleagues and self is significantly related with teachers’ ability to do research and publication. But no relationship was found between teacher effectiveness and his self concept was significantly correlated. Teachers who had 15 or more years of experience differ significantly on professional factors from those of less experience teachers. Teachers of forty five years or above age did not differ significantly from those who were below forty five years of age in respect of teacher effectiveness.

Kuchay (1995) studied on interactional analysis of classroom behaviour regarding the effective and ineffective teachers. He considered the 390 teachers teaching languages to 11th and 12th classes. He used the Principal Rating Scale; Student Rating Scale; teacher self assessment scale; Flanders Interaction Analysis Category System as the tools of the study.

Amindon and Powell (1991), Campbell and Barnes (1982), Kantowaski (1993) and Gorard (2000) used Flanders Interaction Analysis Observation System in their studies and discovered that teachers who were perceived as effective engaged largely in accepting student’s feelings and ideas, used more praise and encouragement in their classroom communication.

The conclusions drawn by him are: The proportion of ‘teacher talk’ in case of ineffective teachers was significantly higher than that of effective teachers. The extent of ‘pupil talk’ was
found to be higher in the classroom managed by effective teachers than that of ineffective teachers. ‘Accepting the feelings of students’ and ‘praising and encouraging’ were found to be more in the case of effective teachers than ineffective teachers. It has been found that ineffective teachers spent more than $\frac{3}{4}$ of the total interaction time in lecturing whereas effective teachers spent about $\frac{1}{3}$ of the total interaction teachers were found to criticize the student less than the ineffective teachers.

He also found that the tendency of asking questions on the part of the effective teachers was high. It was very less in case of ineffective teachers. The effective teachers were found to encourage and appreciate more of ‘pupil talk initiation’ and ‘pupil talk response’ as compared to ineffective teachers. ‘Indirect teacher talk’ was found to be significantly high in case of effective teachers. The effective teachers were found to exhibit greater tendency of encouraging the pupil initiation as compared to ineffective teachers.

Conclusion:-

A body of prior work related to literature is known as review of literature. This is one of the most indispensable parts of research project. In this chapter an attempt has been made to present a brief review of all the different modes of investigation in the field. The chapter provided an insight into various dimensions of the problems and related issues at different stages.