CHAPTER 1

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1) INTRODUCTION

The present generation is living in a very complex social set up. On one hand, they reap the fruits of scientific and technological advancements, but on the other hand, they have also witnessed the backlash of these advancements in the form of war and ecological corruption. Massive social riots and poverty continue to grill the present social set-up. The dire need of today's society is to understand and improve human relationships more than material acquisitions and status.

In terms of formal responsibilities for the development of appropriate human concerns and healthy social and educational attitude, the school, along with the family is seen as the primary institution for teaching desirable affective tendencies, mannerism, lifeskills etc. Undoubtedly, education determines prosperity, advancement and refinement of individuals. The emerging civilization and social set up reflects the standard and quality of education, in the educational institutions of a community. The major endeavour of improving the masses and developing a well bred society can be met only, if we check our quality and quantity of education in classrooms.

Since the attainment of independence much con-
cern is being shown by the educationists, philosophers, parents, students and other sections of society with regard to the falling standards in education. The dull and dreary teaching that goes on in millions of classrooms in the hands of teachers, is responsible for several negative effects on the students, besides impending realisation of educational goals.

It is often said that great teachers of all ages have been inspirational in their impact on those whom they taught. But, the explosion of knowledge, the increasing vogue of specialization, the growing concentration on research and the general dehumanization of the teacher-pupil relationship in today's classrooms, have tended to take the emphasis away from inspiration and to place it on the more or less mechanical acquisition of knowledge, facts and skills.

It has been rightly said by the press and other concerned that, the absence of the clear line of communication between the teacher and the taught is one of the major causes of all the student unrest in the country.

In the Eighth Education Minister's Conference held at Srinagar on 5th and 6th June 1965, Mr. M. C.
Chagla, then Union Education Minister pointed out that, "the time has come when we should begin to think of standards, of quality, of consolidating the advancement that we have already made. In order to improve the quality of education, Report on Education Commission (1966), observes that "it is imperative that our teachers in schools try new ideas and practices. They should be constantly observed and all potential areas of weaknesses be identified and improved. To go to the core of the problem and explore the ways and modes, which the teachers employ to impart knowledge, the best convenient way is to observe the teachers when they are actually teaching."

In the words of Gammage (1971), "The interaction of the teacher and children is one of the most, essential aspects of education process and possibly one of the most neglected. To some extent the type and quality of interaction determines, not only effectiveness of the learning situations, but the attitude, interest and in part even the personality of the pupils."

"Casual observation indicates, that the percentage of classroom time spent in teacher talk, student talk and silence, will vary from one classroom to another. To understand and describe the classroom
interaction, there is a need to study it in the context of relevant variables which can be easily operationalised," Sethi, M.G.(1972)

Recently, the document entitled "Challenge of Education", circulated by the Ministry of Education (1985) for initiating a debate on certain facts, views and issues relevant to formulation of a policy for education asserts that, "The role of teachers is central to all processes of education, since they interpret the policies and programmes as much through their personal example as through teaching learning process."

As Sharma (1986) puts it that, "It is not only obligatory, but complimentary to study the dynamics of teachers' classroom verbal behaviour, not only with a view to understand its mechanism, but also to see its effect on the children. Similarly it is equally important to identify the patterns of classroom teaching behaviours of our teachers so that enough feedback may be provided to enable them to modify their teaching behaviour."

Thus," teacher is considered as a future nation builder, especially when the country is at the crucial
stage of development and is instrumental in bringing about a revolution in various phases of human life. This work is done only when the teachers are effective and efficient," Suthar (1989). The backdrop suggests a need to ponder over the existing situation in the classrooms and to study the process and product of teaching. The present study thus, is an attempt to identify the different classroom interaction patterns on the basis of teacher effectiveness and few personality traits and also to determine their effect on student achievement and personality to some extent. This area has vast potentials and many unresolved issues are still to be addressed.

1.2 CLASSROOM INTERACTION PATTERN (PROCESS VARIABLE)

Teachers, pupils and curriculum are considered to be the fundamental components of the school. Beautiful buildings, up-to-date text books, liberal laboratory facilities, abundant instructional aids and huge libraries are, no doubt, important aspects of academic life, but these are only the tools, in the hands of teacher and taught to work with. How effectively does a teacher and a taught work, is determined by the emotional atmosphere of the classroom, which essentially is the result of teacher pupil relation-
ship, in the usual set up of the class.

Classroom is a place, where teaching learning process occurs, "There is nothing unusual in the classroom behaviour. Teachers teach and pupils learn. In the classroom, teacher talks, writes on the blackboard, explains, asks questions, supervises the class, reads from the text book etc; while pupils answer, raise their hands etc. There are moments of absolute silence, broken by peels of laughter. These, and many other similar things usually happen in a classroom. In brief, whatever a teacher may do in a classroom, his actions arouse reactions in pupils. The teacher and pupils are continuously interacting in the classroom," Mehta (1967) and this interchange itself is called teaching.

Research has shown, that crucial to the teaching learning process is the teacher-pupil relationship. Interaction is the essence of any interpersonal relationship and includes such factors as the overall relationship between the teacher and the pupils, their mutual attraction and hostility, the ways in which they perceive evaluation and react to one another and the way in which the teacher's behaviour creates, sustains and changes these relationships. Due to participation in classroom activities, the students
too, soon, develop shared expectations about how the teacher will act, what type of a person he is and how they like his class.

Thus, we can say that re-occurrence of events in the classroom form an interaction pattern. Classroom interaction is the result of teaching style and pupil reaction. The teacher has the power, the experience and the professional responsibility to establish and control the quality of interaction. Therefore, interaction patterns differ from class to class and teacher to teacher. In other words, when a teacher teaches, a multitude of variables interact, with each other in complex combinations and in different sets of overt teacher classroom behaviour.

1.2.1. HISTORICAL BACKGROUND OF CLASSROOM INTERACTION

As early as the late 1930's researchers in education became interested in analysing classroom interaction. Amidon and Hough (1967) and Anderson et al. (1937) have produced a series of internally consistent and significant findings, i.e., the dominative and interactive contact of teacher determines his behaviour pattern which sets the climate of the class more than any other individual. Most of the conclu-
sions of Lippitt and White's (1943) study confirm or extend the general conclusions of Anderson et al. Withall (1949) showed that a simple classification of the teacher's verbal statements into seven categories, produced an index of teacher behaviour, almost identical to the integrative dominative (I/D) ratio of Anderson et al. Flanders (1951) created laboratory situations in which, contrasting patterns of teacher behaviour were exposed to one pupil at a time. Perkins (1951) using Withall's technique studied groups of teachers and found that groups with an integrative type of teachers were able to learn more than the groups led by a dominative type of teachers.

Most of the researchers cited above, have their own favourite words to describe essentially the same behaviour patterns. For example Anderson et al. used "Dominative vs Integrative", Lippitt and White used, "Authoritarian vs Democratic vs Laissez faire", while Withall, Flanders and Perkins described it as "Teacher centred vs Student centred".

"However research indicates that, teaching performance depends upon the range of behaviour, a teacher can produce, the self control required to provide, particular patterns of influence, a teacher's
sensitivity in diagnosing the requirements of the moment, and his ability to predict the consequences of alternative actions", Sethi (1972).

1.2.2. CORRELATES OF CLASSROOM INTERACTION

The teacher does not function in a vacuum. "Teacher behaviour, by its very nature, exists in context of social interaction," Flanders (1970). In the classroom, there is formal setting, in which the positions and roles of the individuals are nearly set or specified, but still there exists an informal relationship between the teacher and the students. Both, the formal and informal patterns of behaviour, determine the type of interaction pattern that develops in a particular class.

Teaching is an influence directed activity in which both the teacher and the students influence each other. Teacher influences students, when he manages class activities by giving directions, expresses his ideas by lecturing, simulates participation of students by applying them to the solution of the problem, praises and encourages students from time to time, diagnoses the feelings and attitude expressed by students or inferred from their behaviour, criticises
the behaviour of the students and so on and so forth. Students also influence teachers, by their talks, which generally consist of responses to the teacher, initiation and some other activities.

Classroom interaction contains both the cognitive and non-cognitive elements. These elements are determined and manipulated by the effectiveness of a teacher. A teacher as a professional, develops certain skills to use his knowledge, to organise, encourage and assist the desired learning in his students.

Nuthall and Snook (1973) summarized numerous studies which suggest that the instructional activities of a classroom can be categorised in three basic forms:

INDIVIDUAL WORK: It means that the student is working on his/her own. This accounts for between 25 percent to 45 percent of the classtime.

EXTENDED DISCOURSE: It means that the teacher is talking, performing, demonstrating or exhibiting materials. Extended discourse accounts for between 18 percent to 22 percent of the classtime.

INTERACTIVE DISCOURSE: It means that the teacher and students are talking with each other. The degree of teacher control varies. This accounts for between 34 percent to 53 percent of classtime. Further
classroom interaction includes moves in interactive discourse like:

a) Structuring Moves
b) Soliciting Moves
c) Responding Moves
d) Reacting Moves

These moves are explained as follows:

a) Structuring Moves: Structuring moves serve the pedagogical function of setting the context for subsequent behaviour by either launching or halting, excluding interaction between students and teachers e.g. to focus attention on the topic or problem to be discussed during that session.

b) Soliciting Moves: These moves seek to elicit a verbal response, to encourage persons addressed to attend to something or to elicit a physical response. All questions are solicitations, as are commands imperatives and requests.

C) Responding Moves: These moves bear a reciprocal relationship to soliciting moves and occur only in relation to them. Their pedagogical function is to fulfil the expectation of soliciting moves; thus students' answers to teacher's questions are classified as responding moves.
d) Reacting Moves: Reacting moves serve to modify (by clarifying, synthesizing or explaining) and/or to rate (positively / negatively) what has been said previously e.g. rating by a teacher of a student's response is designated as a reacting move.

Therefore, "teaching is necessarily an interactive process, where teacher and learner participate in a reciprocal manner"—Chauhan (1979). This communication network is a key factor in an interactive process. Communication involves language, but it is more than language. It is the teacher, as a person, who uses and the student as a person, who perceives the language; together they determine the quality and depth of communication. Teachers who succeed in achieving a general pattern of co-operative group behaviour, always develop a two way communication system. According to Hills (1979), "there are two main types of persons concerned with communication in teaching and learning. The teacher as a sender of the message and the student as the receiver of the message."

![Diagram of Communication Network](image)

**FIG. NO. 1.1 Communication network in classroom**
"Although most of the functions associated with teaching are implemented by verbal communication; yet classroom interaction cannot be understood only as verbal in nature. Non verbal communication does also exist. In other words, we can say that the behaviour in the class are divided into two types, while in class, the teacher is mostly dominating in the class functioning. Fig. 1.2 explains the teacher classroom behaviour.

**FIG. NO. 1.2 Teacher behaviour in classroom**

The various teaching behaviours shown in Fig. 1.2 are explained as follows

**Direct verbal teaching behaviour** :- Verbal teaching behaviour is divided into direct and indirect teaching behaviour. Direct verbal teaching behaviour
like lecturing, questioning, giving directions and criticism have the direct impact on the students. Some of the terms used for direct teaching behaviour are authoritarian, dominative, closed, teacher centered etc.

**Indirect verbal teaching behaviour :-** Indirect verbal teaching behaviour have the indirect influence on students like, praising, accepting the feelings and asking open ended questions while developing the lesson. These are also called open, child centered, democratic and integrative etc.

**Non Verbal teaching behaviour :-** Non verbal teaching behaviour includes gestures, signs of confusion, irritation, movements of the eyebrows, acting, casual glances, silent demonstrations, nodding of head, shouldering etc. which communicate useful information to students and also arouse desirable reactions from them. But non verbal communication occurs less frequently, than verbal communication and the two are highly correlated.

In this regard Sharma (1986) says, "It has to be borne in mind that success of a teacher in drawing out the best in his pupils depend largely on how he interacts with the pupils and vice versa".
1.3 TEACHER CHARACTERISTICS ( AS PREPARE VARIABLE )

The process of teaching learning is as old as human beings on the earth. It is the influence of one person on another. One mind, one personality and one character interacts with other and that's how education begins. If education is ever to have a genuine influence in shaping character or in giving insight into life, the teacher will be the agent, who will carry his influence. It is his philosophy of education, put into practice which really matters. It is he, who sanctions or condemns their habits, their attitudes, their personal qualities. So teaching involves both a knowledge base, and a performance dimension.

1.3.1. TEACHER EFFECTIVENESS

"Teaching children, is not only a matter of lesson techniques, classroom organisation and administration. It is also one, in which, the teacher needs to understand himself and his pupils particularly and how the relationship between them help or hinder the process of learning," writes Gaberial (1964). Teaching is considered to be an activity, which is performed to satisfy multiple objectives in terms of pupils' learn-
ing outcomes. Pupils have multi-dimensional personalities, with different intelligence level, learning style and socio-economic status at home. All these environmental, psychological and physiological factors affect the behaviour and learning outcomes in pupils. Teachers should not only have sound academic knowledge and personality, but also he should possess the capability to adopt and apply different instructional systems in the class to fulfil the developmental learning needs of the pupils.

Teaching is considered as an art, a creative performance, which transforms a part of the teacher into his pupils. Teacher's entire personality is reflected on the minds of the students. A teacher can shape the raw material into a new finished product and bring forth a new life pattern pulsating with energy. The art of teaching lies in manipulating the living mind with its ever-changing and ever-surprising responses and attitudes.

According to Chauhan (1979); "Teaching as conventionally understood by a traditional teacher, is an act, of disseminating information to the learners in the classroom." According to the changed concepts, teaching is to cause the child to learn and acquire
the desired knowledge, skills and also desirable ways of living in the society. The main aim of teaching is to help the child to respond to his environment in an effective way. Teaching is said to be the stimulation, guidance, direction and encouragement of learning. It may consists of a description of those acts teachers demonstrate that reflect their commitment to a particular philosophy of education. It has been explained from different angles by psychologists and educators. Some of them are as follows:

(i) Teaching is communication between two or more persons who influence each other, by their ideas and learn something in the process of interaction.

(ii) Teaching is also to fill the mind of the learner by information and knowledge of facts for future use.

(iii) Teaching is a process in which learner, teacher, curriculum and other variables are organised in a systematic way to attain some pre-determined goals.

(iv) Teaching is to cause motivation to learn.

These definitions points out teaching, as an interactive process generated from teacher's and students' behaviour, in terms of reciprocal contacts. However, teacher's behaviour in the classroom, in
other words, happen to be an important source of information regarding a teacher's teaching effectiveness. Space, equipment, instructional material and pupils are available but how a teacher organise, utilize and interact with them decides his effectiveness in classroom teaching.

Effective teaching practices may be considered in terms of teacher's competencies. Coper et al. (1973) classify these competencies under three heads:

1. Knowledge competencies/ Presage criterion.
2. Performance competencies/ Process criterion
3. Consequence competencies/ Product criterion

1. Knowledge Competencies / Presage Criterion: It specify cognitive understandings; such as ability to define them, ability to describe major aspects of effective teacher behaviour which are part of inquiry approach. There are at least four types of presage variables in common use as criteria in teacher effectiveness research: (a) teacher personality attributes, (b) characteristics of teachers in training (c) teacher knowledge and achievement, and (d) in-service teacher status characteristics.
(2) **Performance Competencies / Process Criterion:**

It includes all the conditions, situations and climate of classroom, involving the social interactions of students and teacher. It specifies ability to ask higher order questions, ability to perform classroom management behaviour, ability to use different techniques.

(3) **Consequence Competencies / Product Criterion:**

Product criterion specify the relationship between teacher's behaviour and pupils' outcome as indicators of teaching effectiveness.

Thus, teacher effectiveness is an area of research which is concerned with the educational outcomes of classroom teaching, teaching acts and their effects on the educational outcomes of classroom teaching. So, the effective teaching practices affect directly or indirectly pupils' learning. Teaching practices involve two aspects of teaching, cognitive and non-cognitive. Cognitive aspect of teaching concerns with teaching methods or instructional procedure and the produce changes in learner, while non-cognitive aspect of teaching practices is referred to as teacher's art.

Teacher effectiveness is concerned with teacher characteristics, that expresses itself in producing an
agreed upon educational goal by developing instruments and novel techniques of teaching and expressing. It concerns with the ability of a teacher to behave within a social situation in order to produce empirically demonstrated effects approved by those in the environment in which he functions. It depends upon his ability to make decisions in the classroom according to the students requirement of learning to suit their developmental needs.

Therefore, many factors like intelligence, personality, academic achievement, experience, interest, professional outlook, problem solving ability, constructive resourcefulness, social relations, dynamic mental and physical health etc. contribute to success in teaching. Therefore, complexity of teaching is such, that it cannot be wholly described by any single numerical index or formula.

Thus, there is no single correct way to teach and to manage the classroom. The decision making ability on the part of the teacher is that ability, which makes any teacher, effective in the classroom. It is true that teaching effectiveness is and will continue to be tied up with professionalism and dedication of teacher, towards his job. But teachers can only be effective in their classrooms, if they master
general principles of human development, learning, motivation and teaching skills and attempt to apply and enhance this general knowledge by the careful study of students' needs in their particular teaching situations. This is especially so, if decisions are made tentatively and if teachers regularly check the effectiveness of instruction in their classroom and modify their plans as necessary.

1.3.2 TEACHER'S PERSONALITY

No system of education can rise above the level of its teachers. Good teachers are valuable asset to any school, community and national system. Teacher has the privilege to train a child in the way he likes. He may not always succeed in teaching what he wants to teach, but he never fails to teach, what he is.

Teacher's Personality is an important and unavoidable factor, if we want to study classroom interactions. Almost every event in the class involves the personality of the teacher. Teacher behaviour results in:

- Direct educational inputs for learning outcome of students in a content area.
- Indirect input of many small skills, attitudes and personality traits of which, the teacher is unaware.
- Social development of students by the teacher's social activity in the class both, by direct, person to person contact and indirect contact.

Thus, "Pupils learn what a teacher is, as well as, what he says. Pupils absorb his attitudes, they reflect his moods, they share his convictions, they imitate his behaviour and they quote his statements. Experience attests to the fact that such problems, as motivation, discipline, social behaviour, pupil achievement and above all, the continuous desire to learn, all centre around the personality of the teacher. How pupils achieve in school, how they behave and particularly, how they view themselves is, to a remarkable degree, a function of teacher's personality," says Bernard (1972).

Undoubtedly, every experienced judge of teaching and every alert teacher, is more or less aware of the interaction of personalities in the classroom. Professional literature is full with discussions and dissertations on the subject of teacher personality. One valid way to estimate a teacher's true worth is to
1.3.2. a). Defining Personality

The term "personality" has been defined by many psychologists in various ways. It is considered as an integrative organisation of all physical, cognitive, affective and conative characteristics, Warven (1934). It embraces every phase of human character, temperament, skill and attitude; Commiss and Pagin Barry (1954). The dynamic organisation of all these psychological systems that determine, the unique adjustment of individual to his environment, Allport (1961), Mouly (1967).

"Personality is the characteristics way of thinking and acting which identifies each person as an unique individual," International Encyclopedia of Psychiatry, Psychology, Psychoanalysis and Neurology, (1977). Pervin (1980) states that "personality represents those characteristics of the person or of the people that generally account for consistent patterns of response to situations."

According to Uday Shanker (1980), "Personality can be understood as the dynamically integrated psycho-physical pattern that emerges from the individual
in relationship to the total environment, both bio-
physical and social."

"Psychologically, personality is an inner organ-
isation of emotions, values and beliefs which determine
a person's superficial response (gestures and the
like) and in turn, determine his effectiveness with

Thus, we can conclude that -

1. The word, "Personality," embodies all dimensions
and aspects of an individual, that is the physical and
mental make-up, the social and emotional self of an
individual.

2. Every person possesses a unique personality,
because it is the composition or result of so many
different factors. This quality of uniqueness give
birth to what we say 'Individual differences'.

3. Personality keeps on changing from time to time.

4. New environmental changes are the main cause of
personality change. Each experience adds to the knowl-
edge of the individual, which also results in the
change of personality.

1.3.2.b) Fundamental Dimensions of Personality

H.J. Eysenck, a British psychologist, devoted
much of his research studies to explore the dimensions of personality trait. The most widely accepted theory of personality is the one, given by Eysenck on which the present investigation is based.

Eysenck's personality theory has been of great academic and research importance, which has been developed and modified by Eysenck over the years (1947, 1952, 1957, 1960, 1963, 1967, 1969, 1970, 1972, 1980). It has been a rare combination of physiological explanation, experimental evidence and psychometric vigour. In Eysenckian model, personality is considered to be a basic set of components underlining individual differences. He has defined personality as more or less stable and enduring organisation of a person's character, temperament, intellect and physique, which determines his unique adjustment to the environment.

Eysenck's definition of personality revolves around four behaviour patterns which are the cognitive (intelligence), the conative (character), the affective (temperament), and the somatic (constitution). Thus personality is "the sum total of the actual or potential behaviour pattern of the organism as determined by the heredity and environment, it originates and develops through the functional interaction of the forming sectors into which these behaviour patterns
Eysenck theory is presented as three principles; biological, methodological, dynamic (structural and learning / empirical)

1. **Biological Principle**:

There is much evidence indicating that to Eysenck, personality has very definite biological basis. As Eysenck says, "I consider Introversion-Extraversion to be just as much constitutionally determined as Neuroticism." Neuroticism and Introversion - Extraversion operate at the casual level in the neural system. Neuroticism is believed to come from the excitability of the autonomic nervous system. On the other hand, Introversion - Extraversion is based on the properties of central nervous system.

2. **Methodological Principle**:

Eysenck's primary approach is the hypothetico deductive. He sets up hypotheses and then test them deductively.

3. **Dynamic and Structural Principle**:

Eysenck has identified three primary dimensions of personality

- Introversion - Extraversion
- Neuroticism - Non-Neuroticism
- Psychoticism - Non-Psychoticism
Eysenck developed a structural model of personality. Types are at the top of the personality structure, therefore, they exert the most commanding influence. Types are composed of habitual responses. Eysenck's (1975) representation of personality appears in the Fig 1.3.

**Fig. No. 1.3** Eysenck's representation of Personality
Each individual's personality is positioned somewhere within the circle bisected by each of the two dimensions, it results in four quadrants. Eysenck says of this model, "The names inside the circle may serve to give an idea of the behaviour pattern characteristics of extroverts and introverts, unstable and stable people - remembering always that extremes in either direction is rare and that most people are somewhere intermediate". Evidence shows that these dimensions can be identified in animals as well as in human beings", Eysenck and Harlow (1972). They can be identified in many different countries and cultures, Eysenck and Eysenck (1983). The relationship between these fundamental dimensions may be shown as below (Fig.1.4).

![Diagram showing the relationship between fundamental dimensions of personality](image)

**FIG. NO. 1.4 Relationship between the Fundamental Dimensions of Personality**

These dimensions can be taken as the part of normal personality. In the present study, above mentioned dimensions of personality have been tested by
employing "Eysenck Personality Inventory" on teachers. The details of these dimensions may be presented as follows.

1.3.2.c) Extraversion vs. Introversion

In Eysenck's view, (1916) types are not categories as a few people think, rather types are dimensions on which all persons differ. They tend to be normally distributed, as shown in the Fig 1.5:

![Normal distribution curve showing Extrovert and Introvert Dimensions of Personality](image)

Most people fall around average mark. Eysenck conceives of types as continuous dimensions. Extraversion is one of the personality dimensions, that is most important in describing human behaviour. The term extraversion in its original sense refers to preoccupation with social life and the external world than with inward experience of the individual.
Extraversion and Introversion distinguish between the 'turned-outward' and the 'turned-inward' person respectively.

Extroverts are high risk taking (Lynn and Butler 1962), have more frequent alternative behaviour, have greater extents to physical movements (Rachman 1962), have less stimulus deprivation tolerance (Petric, Collins and Solomon 1960) and hence greater pain tolerance as compared to introverts (Eysenck 1962).

According to Eysenck (1965), "Extraversion refers to sociability, liking for parties, having many friends, need to have people to talk to, lack for liking for reading or studying by oneself, craving for excitement, taking chances, acting on the spur of the moment, impulsiveness, fondness of practical jokes, having ready answers, general liking for change, being carefree, easy going and optimistic, prefer to keep moving and keep doing things, tending to be aggressive and to lose temper quickly, lack of tight control over feelings and being not always a reliable person and likes to laugh and be merry. On the other hand, an introvert is quite, retiring sort of person, is reserved and distant except to few intimate friends,
does not like excitement, keeps his feeling under tight control, seldom behaves in aggressive manner, is reliable and somewhat pessimistic."

Lynn (1971) in his book "An introduction to the study of personality" describes that, "The extravert values such things as worldly success, money, power, prestige and popularity. He is sociable and likes lots of friends. He also tends to like novelty and excitement. In contrast, the introvert is detached from the world and his values lie in his own mental and intellectual life.

Fox and Shoul (1984) found that greater differences existed between extroverts and introverts in the desire for company in pleasant and enjoyable situations and in the desire to associate with strangers.

Saha et al. (1984) say that introvert put more emphasis on anxiety as an unpleasant experience and this tendency distinguished them from extroverts.

Thus, to conclude, we can say that extraversion and introversion are one of the principle dimensions of personality in the theory of H.J. Eysenck. The following aspects of the traits have emerged from the disscussion.
**Introversion** is characterised by -

(i) The feelings of shyness, self-consciousness, rigidness.

(ii) Attention directed inwardly towards one's thoughts or feelings.

(iii) Difficulty in adjusting to social conditions.

(iv) A marked tendency towards covert (hidden or secretive) behaviour and pessimism.

(v) Lack of self confidence.

**Extraversion** is characterised by -

(i) The feelings of self confidence, boldness, impulsiveness and aggressiveness.

(ii) The attention and interests towards things and events outside of one's self.

(iii) Ease of adapting to all social conditions.

(iv) A marked tendency towards overt or open behaviour.

(v) Optimism and easy going.

1.3.2.d) **Stable vs. Unstable / Normality vs. Neuroticism**

Neuroticism is one of the principle dimensions in the personality theory of H. J. Eysenck. Eysenck's study on 700 neurotics is, one of the most extensive
studies, where an attempt has been made to assess the general nature of neuroticism. It yields a general factor loading of such variables as unadaptability, depressive moods, instability, seclusiveness, symptoms of nervous disorders since childhood, abnormal personality in parents, poor muscle tone and posture. Eysenck emphasized the importance of trying to understand personality at the genotypic levels and ultimate causation going to the neural level.

Neuroticism is characterised at one extreme, by excessive tension and at the other by emotional stability. Neuroticism is highly correlated with anxiety and is independent of Introversion or Extroversion.

Neurosis is a mental or personality disorder less severe than a psychosis, in which a person is unusually anxious, miserable, troubled or incapacitated in his work and his relations with other people.

On the descriptive side, by neuroticism, Eysenck refers to the emotional liability or over responsiveness of a person and likelihood of breakdown under stress. According to Eysenck (1952, 1966), "The general nature of neuroticism is assessed as instability, unadaptability, depressive moods, weak dependable
Eysenck believes that neuroticism is inherited and as such has neurophysiological basis. Some people are constitutionally predisposed to react strong with their sympathetic nervous system towards incoming stimuli of various kinds whereas other people are predisposed to react much less strongly.

Thus, we can briefly conclude by saying that stable people are characterised by much less anxiety level are emotionally stable, balanced in their actions, adjustive and are less nervous and tense as compared to unstable people, who have the capacity to get tense, nervous, anxious very fast. They are depressive and emotionally unstable.

1.3.3. EXPERIENCE / MATURITY OF THE TEACHER

It is a popular saying that "Practice makes the man perfect". Teaching is an art that requires long practice for its perfection. It can aptly be said that experience is a stuff out of which life is made. Experience is a product of continuous and accumulative interaction of an individual with the world around. Experience is either personal knowledge, attitude or
skills gained by one's own actions or it is acquired.

Teaching experience is an accumulation or fund of knowledge or information or skill that the teachers have attained after putting up themselves in this profession for a number of years. Generally, it is understood that high experience teachers are more effective in teaching than those having less teaching experience, because high practice adds to their high experience and which in turn should make them effective and efficient in their profession.

As Dash (1988) puts it, "Teacher effectiveness means perfection or the optimum level of efficiency and productivity on the part of the teacher. It refers to height of maturity and learning in the life span of a teacher. This concept of effectiveness as the height of maturity and learning indicates that as the teacher grows with experience and learns more and more, he is able to perform his best in the process of education".

This concept of effectiveness of teachers, in relation to their experience level is taken into consideration in the present study.
1.4. CLASSROOM INTERACTION PATTERN AND STUDENT LEARNING OUTCOME AS PRODUCT VARIABLE

Human beings cannot be forced to learn. Unless, there is learning, there is no teaching. Pupil behaviour is the product, towards which teacher behaviour is directed. It clarifies that, teacher is a person engaged in interacting behaviour with one or more students for the purpose of affecting a change in their behaviour. The change, whether, it is to be cognitive, motor, or attitudinal, is intentional on the part of teacher.

Student learning outcomes are influenced by many factors. Three independent variables explained by Benjamin S. Bloom's (1976) in his book - "Human Characteristics and School Learning" are:

(i) Student ability
(ii) Student motivation
(iii) Quality of classroom communication

Student ability, is the extent to which the student already possesses the basic pre-requisites for instruction. Specifying the independent impact of student ability on the learning of content can be done by achievement tests (Actual learning of contents),
Aptitude tests (ability to learn content), general intelligence measures (a global measure of aptitude) and unit tests. Bloom (1976).

**Student motivation**, refers to the fact that individuals vary in what they are emotionally prepared to learn as expressed in their interests, attitudes and self views, Bloom (1976).

**Quality of classroom communication**: Classroom communication is not a product of teacher characteristics. Neither it is a product of characteristics of classroom and school. It is teaching and class environment that influence school learning. Bloom reviews that, the effects of quality of classroom communication may account for up to 25 percent of achievement variance, Bloom (1976).

"Learning may be defined more simply as profiting from experience," Hilgard, Atkinson and Atkinson (1975); gaining from training and not a result of maturation or temporary physiological or psychological states of the organism.

According to Hills (1979)," Learning can be defined as a process of acquiring knowledge or changing attitudes, behaviour or belief by contact with
external events. In teaching - learning process, communication between a teacher and a student is concerned with the transmission of a message either to increase a student's knowledge or to change his attitudes, his beliefs or his behaviour in some way”.

Thus, learning is the retention of behaviour, that has been modified through experience. In other words, we can say that every human experience, every impulse carried through the central nervous system modifies the body and brings in learning. Briefly summarizing, we can say that the facilitation of learning, is the main purpose of teaching. Efficiency in pupil learning is the principle criterion for evaluating teaching. The principles, laws and conditions of learning become cues for teaching. The objectives, purposes, procedures, techniques and activities of teaching must all converge on learning.

In the present study students learning outcomes have been taken as

1) Academic achievement
2) Attitude change and
3) Initiative
Every child experiences the pain of failure and the joy of success, long before he reaches school age, but his achievements or lack of them, do not really become official, until he enters the classroom.

Achievement, is the accomplishment or proficiency of performance in a given shell or body of knowledge. The social acknowledgement of a person's skill, the range and depth of his knowledge or his proficiency in a designated area of learning or behavior is inductive of the extent of his achievement. In other words, achievement is the outcome of general and specific learning experiences. It is the complex phenomenon which is influenced by the set of variables e.g. child himself, his intellectual abilities, structure and functional variables in the school and home environment. It may be noted that although success or failure in the academic achievement depends largely on intelligence, yet the role of non intellective variables cannot be overlooked. Intelligence was thought to be hereditary, while achievement was believed to be acquired.
Academic achievements have always been the centre of educational research and despite many varied statements about the aims of education, the academic development of the child continues to be the primary and most important goal of education. The schools were primarily organised for affecting academic proficiency. Even up to this day academic instructions, occupies a unique place in curriculum. The importance of academic achievements in one's life cannot be over emphasised. It acts as an emotional tonic. It encourages the student to work hard and learn more. Sound academic records are the pillars, on which the entire future personality stands. Also it helps the teacher to know whether his teaching is effective or not and he can make improvements accordingly. Thus, academic achievement helps both, the teacher and the student to know where they stand.

Academic achievement of the students refers to the knowledge attained and skills developed, in the school or college subjects, in which they have received instruction during the course of academic year. Broadly used, the term "Academic performance", refers to some method of expressing a student's scholastic
standing in relation to others. The achievements of
the students in the course, syllabi, subjects and
books studied by them, is expressed in the forms of
grades, percentage, or marks on the standardized tests
or teacher made tests in the form of examination.
These scores determine the status of a pupil, with
respect to attained skills or knowledge as compared
with other pupils or with school adopted standards
which serve as the basis for classification, certifi­
cation, motivation and measurement of educational
performance.

Academic performance, as widely accepted now, is
a function of many cognitive and non cognitive aspects
of personality. In fact every aspect of personality and
environment may affect the academic achievement at all
levels of education.

Hence, multiplicity of variables has been iden­
tified through research evidences which sufficiently
indicate its complex and multidimensional nature. For
convenient understanding, an attempt has been made
here to group the factors of academic performance
under two main categories i.e., cognitive and non
cognitive.
FACTORS OF ACADEMIC ACHIEVEMENT

COGNITIVE
- INTELLIGENCE
- CREATIVITY
- APTITUDE
- COGNITIVE STYLES

NON COGNITIVE
- NON INTELLECTIVE
- ENVIRONMENTAL

PERSONALITY
- INTERESTS
- SELF CONCEPT
- STUDY HABIT
- ATTITUDE
- ACHIEVEMENT MOTIVATION

SOCIO ECONOMIC STATUS
- SOCIAL STATUS
- FAMILY EDUCATION
- RACIAL DIFFERENCES
- FAMILY INCOME
- FAMILY SIZE

FAMILY & CHILD REARING HABIT
- PARENTAL ACCEPTANCE
- PARENTAL ATTITUDES

SCHOOL RELATED VARIABLES
- SCHOOL CONDITIONS
- SCHOOL SYSTEM (OPEN OR TRADITIONAL)
- SCHOOL ATTENDENCE
- TEACHER ATTITUDE
- PARTICIPATION IN CO-CURRICULAR ACTIVITY

FIG. NO. 1.6 Factors of Academic Achievement
Therefore, the speed and level at which an individual acquires knowledge, together with facility to comprehend abstract concepts are the key elements in learning ability. At the same time other than intellect influencing achievements in school, there are many other factors such as, confidence, encouragement, opportunity and so on, exerting their direct influence.

1.4.2 ATTITUDE CHANGE

Attitudes are basic to many educational activities. They are also the product of education. Attitude is, what one thinks of something i.e., viewpoint. It is a mental make up or a feeling or emotion towards a fact or state, which can be named as an attitude. Many definitions of attitude are given by numerous authors and scholars. The more they are pondered over, the more complicated the term emerges.

The word 'attitude' has been derived from the Latin word aptus means fitness or adaptness. Attitude connotes a neuropsychic state of readiness for mental and physical activity. It guides our behaviour. It plays a very significant role in determining success or failure in one's pursuit in any field of life.
Attitudes are systems of positive or negative evaluations. It is evidenced by either approaching or withdrawing type of behaviour and the object of the reaction becomes thereby either a positive or a negative value respectively for the subject's viewpoint.

"Attitudes are acquired through experiences", Blair (1962); it affects perceptions, judgement and other cognitive processes of the individual, Kuppuswamy (1964).

Guralnik David, B. (1973) writes that, "Attitude is a manner showing one's feeling or thought, one's disposition, opinion etc."

Attitudes are as common and universal, as the drives of hunger and thirst and as numerous as the objects toward which they are directed. It may be defined as an enduring predisposition to act in a characteristic manner, to objects, persons, ideas, values or situations in the social environment. They are acquired in social situations. Their full complexity and their role in behaviour are better understood, if we examine them in their dynamic context. Attitudes do change under normal conditions and in controlled situations, the change may be striking.
It is aptly said that human mind is a belief-seeking rather than a fact-seeking apparatus. A belief is any simple preposition consciously or unconsciously inferred from what a person says or does. An attitude is a relatively enduring organisation of belief around an object and situation predisposing one to respond in some preferential manner. Each belief with in an attitude organisation is conceived to have three components.

a) **a cognitive component** :

Because it represents a person's knowledge held with varying degrees of certitude, about what is true or false, good or bad, desirable or undesirable.

b) **an affective component** :

Because under suitable conditions, the belief is capable of arousing affect of varying intensity centering around the object, taking a positive or negative position with respect to the object of belief itself.

c) **a behavioural component** :

Because the belief, being a response predisposition of varying threshold, must lead to some action when it is suitably activated.

Attitudes play an important role in learning and teaching too, for they form the basic part of an
individual's readiness to learn. Attitudes are learned or acquired and can be influenced by teaching. An individual's positive attitude towards his work helps him to achieve his goals effectively. It is the attitude, which motivates the individuals to act and react. In a classroom situation, a healthy attitude towards the subject can help a lot of students, to perform better academically in that particular subject.

Thus, we can conclude, by saying that attitudes guide and effect the behaviour more than knowledge. The acquisition of attitudes, themselves, constitutes a learning process.

1.4.3 INITIATIVE

"Initiative was defined as the ability to act independently, the power to originate or commence something an act of taking the first step or lead without depending on fellow beings," Kellerman D.F. (1981). The initiative has been defined through eight personality traits. A brief description of each trait is given below

(i) Self confidence : i.e., Faith in oneself ; self reliance, impudent reliance on one's power.
(ii) **Expressive**: i.e., To represent vividly; action of manifesting on one's power.

(iii) **Active**: i.e., Spontaneous; energetic; originating or communicating action.

(iv) **Alert**: i.e., Watchful; wide awake; quick in attention and motion; on the look out.

(v) **Assertive**: i.e., To maintain or depend a cause confidently.

(vi) **Determination**: i.e., A fixed intention; resolution; strength of mind toward an object or end.

(vii) **Persistent**: i.e., Obstinate continuance in particular course; act of continuing firmly in opinion, purpose, or a course of action, especially against opposition.

(viii) **Integrity**: i.e., Original; perfect state; honesty; uprightness; sincerity; uncorrupted state.

1.5 **CLASSROOM INTERACTION ANALYSIS**

Despite the periodical school inspections by the school inspectors, which are more often performed as rituals, the teacher in general, do not have direct and immediate access to information about the spontaneous classroom behaviour. To identify the pattern of influence used by each teacher, varied their proportion of direct and indirect influence within cycles of
learning and to the characteristics of their influence patterns, the research tool used was Interaction Analysis.

Interaction analysis, is a specialised research procedure that provides information about only a few of the many aspects of teaching. It is an analysis of spontaneous communication between the teacher and pupils. The assumption is made, that teaching behaviour and pupils' responses are expressed primarily through the spoken words as a series of verbal events, which occur one after another. These events are identified, coded as to preserve sequence and tabulated systematically, in order to represent a sample of the spontaneous teacher influence.

"Classroom Interaction Analysis is a label that refers to any technique for studying the chain of classroom events and classifying each statement made by the teacher or student into a set of categories that are totally inclusive and mutually exclusive," - Flanders (1970).

Francis Griffith (1973), has aptly said that, "Classroom observation is not merely looking into the sequence of classroom activities." It is an active systematic and purposeful process which requires an
Chauhan (1979) has defined "Classroom interaction analysis as any system for coding of spontaneous verbal communication, arranging the data into useful display and then analysing the results in order to study patterns of teaching and learning, identifying the nature of classroom communication and helps in modifying teacher behaviour".

1.5.1 OBJECTIVES OF CLASSROOM INTERACTION ANALYSIS

Classroom interaction analysis has been used to attain one or more of the following objectives:

1) The techniques provide objective data and a systematic record on the teaching behaviour which may be helpful in guidance for the improvement of a teacher's teaching.

2) Classroom Interaction analysis is used to identify the pattern of teacher behaviour.

3) It is to evolve remedial strategies in restructuring the teaching methodology.

1.5.2 ASSUMPTIONS OF CLASSROOM INTERACTION ANALYSIS

The technique of Classroom Interaction analysis
has been developed on the basis of the following assumptions:

1) More than 60 percent of the total behaviour would be constituted by teacher or student talk - Flanders (1965).

2) Verbal behaviour can be observed with higher reliability than most of the non-verbal behaviours.

3) The teacher exerts a great deal of influence on pupils behaviour in the classroom.

4) The relation between students and teacher is a crucial factor in the teaching process.

5) Social climate in the class is related to productivity and to quality of interpersonal relations.

6) Children tend to be conscious of a warm acceptance by the teacher - Perkins (1950)

7) Role of the classroom climate is crucial for learning.

8) Teacher classroom behaviour can be observed objectively by the use of observational techniques designed to catch the natural modes of behaviour.

9) Change in classroom behaviour through feedback is possible.

Thus, we can say that classroom observation is a crucial issue and should be done systematically and
carefully with an alert and analytical mind, to achieve an insight into a special kind of world that one finds in the classroom.

1.5.3 DIFFERENT SYSTEMS OF CLASSROOM INTERACTION ANALYSIS

A desire to understand more of what teaching is all about, has been motivating factor which led to the development of various systems of interaction analysis.

Systematic observation represents a useful means of identifying, studying, classifying and measuring specific variables as they interact within the instructional learning situation. An observational system usually includes some type of carefully defined items or categories, so that the observer can become skilled in identifying and recording codes of representative behaviour occurring in the classroom. They provide data that can be evaluated by applying certain statistical techniques.

In order to qualify as useful observational system, it should reflect few basic qualities. It should be: 1) Descriptive; 2) Objective; 3) In the form of skill, which can be learned and mastered with minimum effort and training time; 4) Managable and
useful to the classroom teacher as well as to researcher or theorist.

Ober, et al. (1971) have classified observational systems into 2 basic kinds; 1) Sign System 2) Category System

Sign System is composed of 'List of behaviours'. In this system, the observer simply checks or marks in same manner, each behaviour only once, in six minute observational period.

Category System provides 'classification of behaviours' in the form of discrete set of categories. At regular intervals within the observational period, the observer determines in what category the behaviour falls and records that category number, as many times as it occurs and also the sequence of occurrence of various behaviours.

Classification of classroom interaction analysis systems is done according to their purpose. These are: 1) Inductive Studies 2) Prescriptive Studies 3) Reflective Studies 4) Matching Studies 5) Process-Product Studies.

Inductive Studies are, by their nature, exploratory. They involve the collection of a more comprehensive array of data, and are rarely concerned with measuring
the growth of student learning.

**Prescriptive Studies** attempt to put on a firmer footing on the task of supervising teachers, particularly student teachers, to base their diagnosis of pedagogical ills and their prognosis of the students' potential as a 'good' teacher.

**Reflective Studies** attempt to identify the disparity which can exist between the way a teacher wants to teach and his actual classroom performance.

**Matching Studies** are the observation schedules which could be used for the purpose of comparing a teacher's actual performance with that consistent with a curriculum development.

**Process Product Studies** are essentially hypothetic deductive in character. The process defined in terms of teacher and pupil behaviour observed and recorded by means of classroom interaction, is hypothesized to bring about measurable changes in student growth.

"A particular system for interaction analysis usually include -

a) a set of categories.

b) a procedure for observation and a set of ground rules which governs the coding process.
c) Steps for tabulating the data, in order to arrange a display which aids in describing the original events.

d) Suggestions which can be followed in some more common applications "- Chauhan (1979)

Hence, to conclude we can say that "systematic observation is an accepted method of organising observed teaching activities in a manner, which allows any trained person to record and analyse interaction with the assurance that others viewing the same situation would agree to a great extent with his recorded sequence of behaviour" - Vasudev (1990)

Commonly used observation systems are as follows:
- Flanders' system of interaction analysis.
- Reciprocal category system.
- Equivalent talk category.

1.5.3.a) Flanders' system of interaction analysis

Flanders has done pioneering work in the field of `observing and analysing classroom communication'. He and his associates developed a classroom observational system at the University of Minnestosa in 1959.

E. Stones (1979) says, "Flanders' interaction
category system (FICS) is the most widely known and used. It has had a seminal influence on the development of classroom studies."

The FICS divides all talk that takes place in the classroom into ten categories, seven are devoted to teacher talk, two to pupil talk, tenth described as silence or confusion, covers all other conditions. The former section is further divided into indirect and direct teacher talk. Pupil talk has the two categories of responding and initiating. A summary statement of the categories has been given below (table 1.1.).
### TABLE NO. 1.1 Flanders' Interaction Category System (FICS)

<table>
<thead>
<tr>
<th>Sections of Teacher</th>
<th>Pupil talk</th>
<th>Categories</th>
<th>Summary statement</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEACHER TALK</td>
<td>Teacher Response</td>
<td>Accept Feelings</td>
<td>Accepts and clarifies an attitude or the feeling tone of pupils.</td>
<td>1.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Praises</td>
<td>Praises or encourages pupil actions, jokes that release tension.</td>
<td>2.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use Ideas of Pupils</td>
<td>Clarifying, building or developing ideas suggested by pupils.</td>
<td>3.</td>
</tr>
<tr>
<td></td>
<td>Teacher Initiation</td>
<td>Ask Questions</td>
<td>Asking questions about content or procedures based on teacher ideas.</td>
<td>4.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lectures</td>
<td>Giving facts or opinions about content or procedures; giving explanations.</td>
<td>5.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Directs</td>
<td>Giving directions, commands or orders to which a pupil is expected to comply.</td>
<td>6.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Criticizes</td>
<td>Statements intended to change pupil behaviour from non acceptable to acceptable pattern.</td>
<td>7.</td>
</tr>
<tr>
<td>PUPIL TALK</td>
<td>Pupil Response</td>
<td>Responses</td>
<td>Talk by pupil in response to teacher.</td>
<td>8.</td>
</tr>
<tr>
<td></td>
<td>Pupil Initiation</td>
<td>Initiates</td>
<td>Talk by pupils, which they initiate, expressing own ideas, opinions, asking question initiating a new topic.</td>
<td>9.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Silence/Confusion</td>
<td>Pauses, periods of silence or confusion, in which communication cannot be understood.</td>
<td>10.</td>
</tr>
</tbody>
</table>

#### 1.5.3.b) Reciprocal category system

The system is characterised by equal attention to student talk and teacher talk. For the teacher talk the single digit codes are ascribed and for student talk the two digit codes. The final category indicates silence or confusion. There are total nineteen categories. The summary statement of the categories has been given in the table 1.2.
### Table NO. 1.2 Reciprocal Category System (RCS)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.</td>
<td>Warms the Climate</td>
<td>This type of talk eliminates tension praises or encourages the action, behaviour, ideas and comments</td>
<td>11.</td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
<td>Accepts</td>
<td>Reinforces positively and accepts the actions and ideas.</td>
<td>12.</td>
</tr>
<tr>
<td>3.</td>
<td>3.</td>
<td>Amplifies the contribution of others</td>
<td>Asks for clarification, builds on and develop the actions, behaviour, ideas and contribution of another</td>
<td>13.</td>
</tr>
<tr>
<td>4.</td>
<td>4.</td>
<td>Elicits</td>
<td>Asks questions or request information about the content, subject with the intent that another should answer.</td>
<td>14.</td>
</tr>
<tr>
<td>5.</td>
<td>5.</td>
<td>Responds</td>
<td>Directs answers to questions and answers to one’s own questions</td>
<td>15.</td>
</tr>
<tr>
<td>6.</td>
<td>6.</td>
<td>Initiates</td>
<td>Presents self initiated facts information and opinions concerning the content, expresses one’s own ideas.</td>
<td>16.</td>
</tr>
<tr>
<td>7.</td>
<td>7.</td>
<td>Directs</td>
<td>Giving directions, instructions orders and assignments which another is expected to comply.</td>
<td>17.</td>
</tr>
<tr>
<td>8.</td>
<td>8.</td>
<td>Corrects</td>
<td>Informing another that his (her) answer is incorrect and inappropriate.</td>
<td>18.</td>
</tr>
<tr>
<td>9.</td>
<td>9.</td>
<td>Cools the Climate</td>
<td>Tends to create a certain amount of tension by bowling out someone, rejecting or criticizing the opinion or judgement of another.</td>
<td>19.</td>
</tr>
<tr>
<td>10.</td>
<td>10.</td>
<td>Silence / Confusion</td>
<td>Pauses, short intervals of silence or confusion in his classroom.</td>
<td>10.</td>
</tr>
</tbody>
</table>

### 1.5.3. c) Equivalent talk category

The equivalent talk categories may be used in classifying either teacher or student talk, the single digit codes are used to identify teacher talk and the double digit codes to identify student talk. The categories focus on five specific types of verbal behaviour. A brief description of the all types is given in table 1.3.
TABLE NO. 1.3 Equivalent Talk Category (ETC)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Presenting Infor-</td>
<td>1.</td>
<td>Presenting the</td>
<td>All unsolicited initiation of information such as lectures, introduction of</td>
<td>11.</td>
</tr>
<tr>
<td></td>
<td>mation</td>
<td></td>
<td>information</td>
<td>content or instructional discussions</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Questioning</td>
<td>2.</td>
<td>Questioning</td>
<td>Questions requiring restricted type of thinking for responses.</td>
<td>12.</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>3.</td>
<td>Detail Questioning</td>
<td>Questions requiring expanded type of thinking for response</td>
<td>13.</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>5.</td>
<td>Detail Responding</td>
<td>Expanded thinking responses requiring high mental activity</td>
<td>15.</td>
</tr>
<tr>
<td>6.</td>
<td>Reacting</td>
<td>6.</td>
<td>Maintaining Activity</td>
<td>Maintaining discussions, continuation of contribution at the same level.</td>
<td>16.</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td>7.</td>
<td>Extension of Activity</td>
<td>Raising the level of thinking, from restricted to expanded for discussion etc.</td>
<td>17.</td>
</tr>
<tr>
<td>8.</td>
<td>Structuring</td>
<td>8.</td>
<td>Terminating Activity</td>
<td>Comments that effect closure of the present thought sequence.</td>
<td>18.</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td>9.</td>
<td>Structuring of Learning Activity</td>
<td>Comments related to instructional acts and development of the lesson.</td>
<td>19.</td>
</tr>
<tr>
<td>10.</td>
<td>Silence / Confu-</td>
<td>10.</td>
<td>Silence / Confusion</td>
<td>Pauses, silence or confusion in the classroom.</td>
<td>10.</td>
</tr>
</tbody>
</table>

1.6 RELATED RESEARCH STUDIES

The preliminary survey of previous studies and discussions will not only help the investigator in gaining an insight into the work domain, the field, but will also help the readers, in getting an idea about the issues and problems for further research on
the aspects, not covered by the researchers till now.


In India, studies using systematic observation of classroom behaviour of teacher drew attention of researchers quite late. 1970 may be regarded as the beginning of such studies. The painstaking attempts at analysing teaching behaviour and relating them to pupil learning outcomes have made an impact on totality of problems of research on teaching and teacher effectiveness. Here follows a brief historical review of some of these studies.

1.6.1 HISTORICAL BACKGROUND OF PRESAGE – PRODUCT STUDIES

A number of studies have been conducted on personality characteristics during the first quarter of the 20th century. It is clear from a number of studies that inter-personal responses are in part determined by such variables as quality of clothing, Hoult (1954), Lefkowits Blake & Honton (1955), Race Wong (1961), and voice quality, Learner (1965).
Allport (1968) found in a study of 100 successful teachers and 4632 pupils that about 8 percent had a strong influence on pupils, 15 percent had a well remembered, but not strong influence and about 77 percent teachers were remembered vaguely, if at all.

Dennison (1969) found that the adjustive behaviour, learning skills and interests have improved markedly in pupils' when encountered certain effective teachers. Hosler A.M. (1970) says pupil gain in attitude is related to the affective characteristics of teacher.

1.6.2 HISTORICAL BACKGROUND OF PRESAGE - PROCESS STUDIES

Anderson (1945) has found that dominating teachers create a tense classroom climate, full of hostility, insecurity, lack of understanding and cooperation, whereas integrative type of teachers create a climate of friendliness, warmth, understanding, cooperation, security and freedom in the classroom.

Empathy and consistency have been described as important factors influencing teacher effectiveness in the reports and studies by Bending (1953, 1954, 1955), Gibb (1955), Medley and Klein (1956).
Eysenck (1960) has found that introverts perform better in any task because of their quickness in cortical excitation, show accumulation of reaction, inhibition and its faster dissipation. Reverse is true in case of extroverts.

However, Amidon & Simon (1965) reviewed studies on teacher-pupil interactions and found that the relationship between teacher personality and teacher behaviour was uncertain, however achievement, perception & classroom climate were apparently related.

Pankratz (1967) found that the teachers classified as more effective made more use of the ideas and opinions expressed by pupils than the less effective teacher. But Ryan (1960); Davies (1961); Getzels and Jackson (1963); Flanders (1963); Tarpay (1965); Ragsdale (1967); Gall, Borg, Kelly and Langer (1969); Quaraishi (1972); Johnson (1972) and Falanigan (1973) could not find any significant relationship between teacher's personality variables and teaching behaviour.

Schaefer, J.H. (1970) found that women teachers who are socially precise & in control of their own emotions, used indirect influence. And teachers who
are self-reliant, realistic, happy-go-lucky, enthusiastic & carefree are more integrative in their behaviour than teachers who are dependent, over protected, sober, prudent and serious and are more dominant in the classroom.

1.6.3 HISTORICAL BACKGROUND OF PROCESS-PRODUCT STUDIES

A synthesis of researches by Hart (1934), Hopkins (1940) and Baxter (1941) show that high school students, most disliked autocratic & dominating teachers and were interested in sympathetic and friendly teachers. Teachers in an integrative classroom engendered greater learning, child growth and development than did dominative teachers—Perkins (1951)—pupils contribute more to the lesson, are more friendly and co-operative, less inattentive and aggressive and resistant to instruction than pupils of dominant teachers—Lewin et al. (1939); Anderson and Brewer (1945); Flanders (1949, 1951).

The teacher is a facilitator of learning and that the level of the teacher's facilitation of learning, depends on the degree of effectiveness of his interpersonal relationships and ability to establish a suitable classroom climate, is born out by studies.
reported by Morrison (1966); Herman (1967); Lashier (1967); Schantz (1967) and Lulla (1974). Pupils of indirect teachers scored higher on verbal creativity, Weber (1968); used a high level of thought provoking questions, Dodl (1965); John (1968); did significantly more of the work required of them and of not required of them - Cogan (1956) viewed lessons more favourably and exhibited significantly higher levels of thinking, Miller (1966); were well motivated and had positive attitudes of their teachers, Patel (1974).

The use of praise in the teacher behaviour which is usually positively correlated with the use of the pupils ideas and opinions - Smith (1965). Praise resulted in better pupils adjustment-Dollins - et al. (1960) and in high academic achievement of pupils - Prasad (1977). Indirect teachers eliciting higher level of questions from the pupils than the direct teachers though the incidence is very low -John (1968). Flanders (1965), Campbell and Barnes (1969) found that pupils of indirect teachers made better achievement scores, produced higher levels of critical thinking, gave more active manifestations of curiosity, are less confused than did pupils of direct teachers.
1.6.4 HISTORICAL BACKGROUND OF PRESAGE - PROCESS - PRODUCT STUDIES

In the year 1939 and later, Lewin (1939), Lippitt (1940), Lippitt and White (1943), conducted studies and tried to investigate the effects of authoritarian, democratic and laissez-faire climates on individual and group behaviour. A bird's eye view of these studies has been given here under the different socio-emotional climates and their clear impact upon the behaviour and academic gain of the children.

1) In the authoritarian type of socio-emotional climate, there is a spirit of unhealthy competition and hostility. The entire group working under such a teacher tends to be submissive in behaviour, towards the leader of the group, but actually cannot produce better results in the long run.

2) In the democratic atmosphere the spirit of contentment is all prevailing. There is an atmosphere of friendliness co-operation in the group and pupils tend to be creative they tend to and work carefully. Pupils donot work on the condition of the teacher's presence but on their own accord. Less dependence on teacher's presence is noticed.
3) In the laissez-faire policy of interaction the predominant factor is, that, everyone is left to his or her own will. Nothing worth the name comes out of activities, in such an atmosphere.

By 1958 the following generalizations were established concerning patterns of teacher influence; 1) There is a direct relationship between teacher influence that encourages student participation and constructive pupil attitudes.

2) Teacher behaviour affects pupil attitudes.

3) A number of different factors affect the patterns of teacher and teacher use. Among these are (i) the subject matter being taught, (ii) the age and maturity level of students, (iii) instructors preferred style of teaching, (iv) the nature of learning activities - Bruce and Willam (1964).

1.6.5 PRESAGE - PRODUCT STUDIES

Whatever pupils learn, whether academic knowledge, social behaviour or personality traits, is a matter of slow accumulation. In many cases, the impact of teacher personality persists for years. The fact that a whole class does not respond in the same manner, does not mean that individuals are not being
affected.

It has been frequently said that child behaviour reflects parental handling. But when we consider the number of working hours the child spends with teacher, it can safely be remarked that "pupil behaviour reflects teacher personality."

1.6.5(a) Teacher characteristics and pupil achievement

Caffee, B. S (1979) reached to the following conclusions in his study.

1. There is a significant relationship between general teacher attitudes and pupil control attitudes.
2. Those student-teachers having more positive general attitudes, held more humanistic pupil control attitudes.

According to Mcgowan, W.E. (1982), "the effect of the classroom teacher on student achievement test scores is significant. However, there was no interaction between the teacher and pupil ability variables, indicating that the teacher effect on pupil achievement is distributed across all levels of pupil ability".

Wyrick E.L (Jr.) (1984) investigated the relationship between student teacher personality charac-
teristics and behavioural style exhibited by pupils in their classrooms. The student-teacher personality characteristics were positively related to practical outlook, personal integration and anxiety level, social extraversion and impulse expression of their pupils.

1.6.5(b) Teaching experience and student achievement

Patelmo, P.J. (1975) found that the cognitive characteristics of teachers teaching the introductory Physical Science (IPS) program to 8th grade students play a lesser role in enhancing critical thinking skills in youngsters than do teaching experience. Robinson A.R. (1981) has measured learning style in two dimensions:

(i) The abstract/concrete (ii) The active/reflective. He has found a correlation for the following two experience groups: (i) no experience (ii) 1-3 years experience on the abstract/concrete dimension. A decreasing correlation was observed as years of experience decreased on the active/reflective dimension.

1.6.6 PRESAGE-PROCESS STUDIES

Presage - Process research includes studies linking teaching process to teacher characteristics &
1.6.6(a) Teachers personality and classroom behaviour

Qraishi (1972) observed that verbal behaviour of teacher was moderately related in a small measure to their personality and attitudes. Dixit (1973) observed that sex factor was found to be significant in relation to teacher behaviour. Singh (1974) reported a verbal intensity of interactions.

Good and Grouws (1975) found that effective teachers were characterised by the following general patterns of behaviour.

(i) Students frequently sought the teacher out for feedback on assigned task.
(ii) Instructions and teacher demonstrations were performed clearly.
(iii) Teachers created a non evaluative and generally relaxed learning environment.
(iv) Their classrooms were relatively free of major behavioural disorders.

Goel S. (1978), reported that extrovert teachers seemed to have greater interchange of classroom events than introvert teachers, whereas introvert teachers
seemed to provide more opportunities for pupil participation. But Raghava Kumari (1980) found that extroversion and neuroticism were not significantly related to effective dimension of classroom instruction.

A highly significant difference was found between total interaction pattern for social extroverts and social introvert-teachers. Transition from one category to another category was found more in social introverts than that in social extroverts. The mean percentage of time by extroverts on categories like "accepts feelings," praise or encouragement, "accepts or uses students' ideas, asks questions, lectures and criticises or that of justifying authority is more than that of introverts teachers—Reddy (1982).

Regarding teacher characteristics in general, Chopra (1983) found that, those who are warm-hearted, independent, emotionally mature, stable, venturesome and possess high self-concept are effective in their teaching and Bisht (1985) concluded that outgoingness, intelligence, emotional stability, assertion, happiness, rule boundness, venturesome, shrewdness, self-sufficiency, anxiety, extraversion, poise and independence are positively related to the verbal behaviour of the teacher.
According to Devlin S. Wadel (1984), five of the six main teacher - effectiveness variables significantly favoured the volunteer teacher. Volunteer teacher used more academic statements, praise and interactive teaching than their non-volunteer colleagues.

1.6.6. b) Teacher characteristics and classroom interactions

Santhanam, M.R. (1972), concluded that age, recency of training and experience did not appear to effect teachers indirect influence. Male unmarried teachers are found to be more indirect as compared to female married teachers. Significantly different patterns were noticed for teachers of different subjects.

Somvir (1975) reported that criteria of teacher effectiveness was significantly related to indirect influence, pupil talk, initiation, teacher response ratio, teacher question ratio and instantaneous teacher question and response ratios. Maheshwari (1976) noticed that effective teachers exercise more indirect influence, students initiation and teacher response ratio, used ideas of pupils, "asks questions", "student initiation". The effective teachers used more creative teaching models.
Foster, W.L. (1977) found in his study that there was a significant multiple correlation between a teacher's specific characteristics and his/her demonstrated level of acceptance and adoption of a new instructional strategy.

Roberson, J.R. (1981) observed that the more confident the teacher is, the more indirect approach he will use. Mailey, S.M.M. (1985) revealed that verbal communication in contrast with non-verbal was used in 80 percent of incidents involving disciplinary classroom management. A personal and open manner on the part of the student teachers generally contributed to communication effectiveness. Indirection that is, the manner of approaching discipline problems by redirecting attention away from unacceptable to more acceptable behaviour, contributed to effectiveness over 90 percent of the time, it was used. Whereas threat, derogation and overattention contributed regularly to ineffective classroom management.

Lee, K. (1987) found that for the low and high expected students, teachers' behaviour such as types of feedback, reason for assignment and placement recommendation were significantly related to teachers' conception of intelligence.
Berg, J.A. (1987) found teachers with self-concept of teaching ability tend to create more opportunities for student success, have higher expectations for students and they tend to be more encouraging of their students.

1.6.6. c) Effect of training on teachers behaviour

Arnold (1972) revealed that traditional teachers initiated more interactions frequently Srivasthva (1975) noticed that trained teachers spend little time in giving directions and criticism as compared to their untrained counterparts.

Villapano, A.J. (1983) found in his study that training in the theory & practice of interpersonal skills and a persons' attitudes towards several aspects of education have important influence on the implementation of democratic classroom. Miller, D.S. (1986) has found that teacher and adult-lead interactive teaching with books, was greater in 'ineffective schools'. Additionally teachers who had taken an undergraduate course in educational media were more likely to be on the faculty of effective schools.

1.6.6. d) Demographic variables of teachers and teacher behaviour
There has been several studies which reveal insignificant and negative relationship between teaching experience, age and teaching efficiency and success. Among them the studies of Windbam (1969); Santhanam (1972); Fiedler and Gilla (1974); Mehta (1976); George (1976); Malhotra (1976,1981); Potter (1978); Davier (1978); Patel (1979); Smith (1980); McGlynn (1981); Jaglekar (1981); Gupta and Shamshery (1982); Compton (1982); Umme Kusum and Khaja peer (1985) and Venktaiah and Naidu(1986) are worth to mention.

But Debnath (1971) and Rajagopalan (1976) found teacher experience significantly related to teaching efficiency. Shashikala & Lalitha (1979) reported that teacher experience is related significantly to five of teacher behaviour measures i.e. teacher talk ,pupil talk,I/D,Teacher Question Ratio(TQR) and Content cross ratio(CCR).

Mehta (1976) found no significant relationships of age and sex with verbal behaviour patterns of teachers. However, qualifications of teachers were reported to be significantly correlated with teacher question-ratio. Recency of training, experience of teaching and teachers perception of students were
also not related with classroom communication of teachers. Malhotra (1976) found Science teachers with Bachelor's degree and lesser teaching experience to be more indirect as compared to their master degree holders, more experienced arts counter parts. No difference was found on sex.

Dass et al. (1978) found that qualifications of teachers affect their development in general teaching competence, Patel (1979) and Sharma (1981) found a positive relationship between academic qualification and communication patterns i.e. I/D & TQR and teaching behaviour.

Dailey (1983) found that the demographic variables like teacher age, length of teaching experience and grade level had no significant effect upon the effective teaching procedures. Kwon (1984) found in his study that teaching experience, teaching assignment and gender also appear to be related to the preference for teaching and also to perceived teaching effectiveness.

Umme Kusum and Khajapeer (1985) found the teacher educators with 8 or more than 8 years of experience with B.A./B.Sc and M.Ed. qualifications more effective than those with similar experience and with M.A./M.Sc.
and M.Ed qualifications. Similarly Venkataiah and Naido (1986) found no associations between the teaching success and the study variables like sex, age, martial status, place of birth, qualifications, management, teaching experience, salary, cadre and family size of the teacher.

According to Dr. Bhagia et al. (1987) from the Annual Report (1986-87) National Institute of Educational Planning and Administration. "There is no significant difference between Ph.D. holders and non Ph.Ds among college heads in the performance of various roles. There is no significant relationship between experience and performance.

1.6.7 PROCESS PRODUCT STUDIES

Process Product studies include studies which relates the classroom teaching environment and techniques with the learning both cognitive and non-cognitive of the students.

1.6.7.a) Direct and indirect behaviour of teachers and students achievement

Wrape, J.A. (1971) found (1) Increasing levels of teacher indirectness were associated with successively
higher academic self-concept scores for all students in the sample regardless of IQ or motivation level. At the same time highest subject matter learning was found under an average teacher interaction patterns.(2) In below average IQ student ,a direct interaction pattern produce highest mean subject matter achievement. It was concluded that none of the general patterns of teacher student talk under investigation was 'Best' in terms of its simultaneous effect on pupil outcome.

Gardner, J.W. (1973) found that the group receiving the greater amount of indirect influence from their teacher showed significantly higher scores on post- test result than student receiving lesser amounts of indirect teacher influence.

Patel (1974) studied a favourable effect of indirect influence on motivation, classroom organisation, student attitude towards the teacher and personal anxiety of pupils. Gupta, V. (1975) found that academic grades did not influence indirectiveness of teachers.

Fernandez, Espinose and Doznbusch (1975) found that teacher overlooking warmth and sympathy might thwart the achievement as aspiration of students.
Patel (1974), Raijiwala (1976), Calarco (1977), Lulla (1979) reported that the teachers indirect behaviour affects the pupils academic scores positively, made them highly motivated had better classroom organisation, develop independent behaviour and have stimulating classroom climate with free communication and open interaction, affected pupils adjustment classroom trust, initiative level and also had favourable influence on attitudes of pupil towards teacher.

Wilkinson, S.S (1980) investigated that teacher praise has little, if any, relationship to student achievement. Praise has a negative relationship upon student's achievement in the areas of higher cognitive complexity. The data also revealed that circumstances where praise is more effective among lower socio-economic status groups—particularly in maths achievement, among primary grade levels, during teacher response situation to student's academic work and behaviour whereas Jones (1981) found teacher clarity and teacher use of pupil ideas and information not positively related to pupil cognitive achievement.

Mullinix (1982) has found the classes taught the teacher ranked higher on direct to indirect scale of verbal behaviours showed a higher mean content gain
than classes of teachers who ranked lower on this scale.

1.6.7. b) Classroom interactions and learning outcome of students

Smith, P.G. (1972) concluded that the students who study in small discussion groups will not surpass significantly the mean learning achievement, will not perform significantly better in tasks requiring higher cognitive operations such as comprehensions and application, than those who study under teacher directions.

Chasas, U.M. (1973) concluded that discussions stimulated by broad questions and lectures are equally effective in producing both critical thinking and achievement. Pearson Clifton (1974) concluded that the facilitative teacher classroom behaviour treatment improved the art related attitude scores of subjects while the non-facilitative teacher classroom behaviour treatment did not. Patelmo, P.J. (1975) found that the classroom question seems to constitute the teacher's major tool for encouraging the critical thinking process. Platner, M.J.B. (1977) studied that the behaviour of children taught by teachers in democratic classroom management become less detrimental and more responsible. Elias, S.E.F. (1977) found in his study
that the moderate levels of openness in the classroom appear to be most beneficial for the acquisition of academic skills.

*Teteus, J.T. (1978)* found that all students who were in the open classroom program scored numerically higher on the post-test. These tests were given for measuring academic achievement and self-concept factors. *Reichlez (1978)* found that the pupil-teacher relationship was important to the learning process, which was enhanced when teachers enhanced personal interest in them, offered choices, shared their interest, and allowed them to take charge of their activities and to jointly determine their grades.

*Hamberlin (1983)* observed that students in stimulating classroom environment had better records for four measures:–

(i) Academic achievement. (ii) Homework assignment completed. (iii) Classroom preparations completed. (iv) Attendance tardiness and class cuts avoided.

*Satter (1984)* reported that the students in the formal approaches performed significantly better on the cognitive measure than the in the no interaction approach.
Beanment (1984) concluded that when student initiated verbal interaction gain in simple maths and reading was more than when this behaviour was moderate. Teacher hostility rebuking behaviour related negatively to maths achievement.

1.6.7(c) Correlates of pupil achievement

Dodd (1974) reached to the conclusion in his study that the three teacher variables such as clarity, questioning and involvement are strong correlates of pupil achievement. Haertel et al. (1981) found that learning outcomes were found to be positively associated with classroom climate dimensions of cohesiveness, satisfaction, physical environment are negatively associated with friction, apathy and disorganisation.

Garrison (1982) in his study indicated that communication practices in the classroom have a profound influence on educational outcomes. Ascncio (1984) concluded that teacher influence was found to have positive relationship with pupil achievement, adjustment and attitude. It appears that teacher responsiveness, teacher acceptance and use of students ideas or opinions and flexibility of teacher influence in the classroom are positively related to pupil
achievement in different content areas as well as a number of other outcome variables like attitude, independence and self direction, verbal recall, creativity, incidence of thought provoking questions and manipulative skills. However, the complexity of human interaction & learning cannot be reduced to a formula.

1.6.8 PRESAGE - PROCESS PRODUCT STUDIES

Presage-Process Product studies reveal the relationships between all the skills (inherited and acquired) that a teacher possesses, the techniques he/she adopts for formulation of a particular type of classroom climate and the learning that takes place in that environment. Here follows few studies which depict the influence of teacher characteristics on classroom interactions and processes and also the ultimate outcome of student learning.

1.6.8.a) Teacher characteristics on classroom interactions and the ultimate outcome of student learning

Bettis, L.E. (1971) came to the following conclusions

(i) For a group of instructors, all of whom taught the same course, students tended to rate the most direct and least direct instructors as less effective
than instructors in the middle range of influence.

(ii) Instructors with more teaching experience were more indirect in their classroom influence than the instructors with less teaching experience.

(iii) Instructors who were less direct had significantly greater student achievement than instructors who were more direct in their classroom influence.

(iv) The percentage of student talk was significantly related to student achievement.

Clary L.H. (1974) found that there was a significant relationship between the factors of teacher personality exhibition and teacher knowledge of reading and successful student achievement in reading.

George, V.E. (1976) concluded his study with the following findings:

1. The teacher use the lecture method more than any other single category of behaviour and utilise large group interaction, 55 percent of the class time.

2. Student involvement was higher during individual instruction than during large group instruction.
3. No significant positive relationship was found between student involvement and student achievement.

Ellis, D.W. (1976) explored that personality measures related positively to attitude and negatively to assistance-sought outcomes. Attitude predictors related positively to time comers, independence and community relations. Achievement as a predictor, related negatively or inversely to the total time outcome. Attitude and personality measures predicted 22 percent of achievement variance. Personality and achievement measures predicted 30 percent of attitude variance. Weaver, H.M. (1978) found in his study that when the variable of personality was included in the analysis, it appeared that the attitude of students of varying personality orientation were enhanced differentially from different type of instruction.

Kuchta, S (1980) found that humanistic teachers had high achievement pupils and teacher age or teaching experience did not affect the results. Teacher self-discloser resulted in pupil's effective learning. The use of praise in the classroom is a teacher behaviour which is usually positively correlated with the use of pupils ideas and opinions. Freeman, K.F. (1981) concluded
that the students of IIInd grade teachers, who took most of their courses in teaching techniques and methods, had significantly higher gain scores. In the area of reading students of male teacher scored significantly higher.

Smith E.M. (1981) found that once the effect of socio-economic status was taken into consideration, none of the selected teacher variables were found to have any positive relationship with student achievement either individually or in concert. Teacher experience, however, was found to be positively related, even after socio-economic status was taken into consideration.

1.6.8. b) Training of teachers, their classroom behaviour and pupil achievement

Francis, M.S. (1980) found that one group of students of teachers who participated in the special staff development sessions demonstrated a significantly greater change in self esteem and another of students demonstrated a significantly greater change in achievements. No group demonstrated a significantly greater change in attitudes towards school.

Winnigham, B.R (1982) revealed that the trained
teachers encourage more, influence and spend more time compared with untrained teachers. There were no significant difference between trained and untrained teacher pupil experience by classroom influence.

Mallory, S. Shirley (1984) concluded that the teacher who participated in the training program, utilise the key element to a degree higher than similar teacher who had no such training. A significant difference was found between the means obtained by the students in communication. The students in the experimental group performed better than the control group, the difference was not significant.

Hansen, J.B. (1988) says that teacher trained in gifted education demonstrated greater teaching skill and develop more positive classroom climate than did untrained teachers of the gifted. More specifically students of trained teachers reported greater emphasis on higher level thinking skills and on the components of classroom focus which included discussion, less lecture and less stress on grades than did students of untrained teachers.

1.7 REVIEW OF RELATED RESEARCH STUDIES
By reviewing, the work of all those who have observed the complex and fluid classroom transactions, situations and interactions between the teacher and student, we can summarise that many attempts were directed to conceptualise teaching, operationalise it into teaching behaviours and to collect empirical data on teaching to validate the same.

1.7.1 IDENTIFICATION OF ISSUES

The variables, conclusions and issues raised in the related research studies are as follows.

(i) Influence of personality traits of teachers like attitudes, extraversion, introversion, teaching experience on student personality, learning skills, attitude, anxiety and practical outlook is found significantly by most of the researchers.

(ii) Significant difference existed between the behaviour patterns of extrovert and introvert teachers.

(iii) Confidence level and high self-concept of teachers, affect their teaching behaviour.

(iv) Indirect teacher behaviour where emotional rapport is established with pupils, is considered effective in classroom-interactions.

(v) Age, training, experience and qualification of
teacher do not effect the indirect influence and teaching efficiency of teacher in class, but few researchers found these variables significant for effective teaching.

(vi) Indirect behaviour builds better classroom climate and effects pupil achievement, adjustment, initiative level and attitudes. But for higher cognitive complexity, praise has a negative relationship upon pupil achievement.

(vii) Teacher-training bring significant differences in teaching behaviour, but few deny it.

(viii) Moderate level of democratic behaviour and openness in the classroom appears beneficial for the academic skills of pupils.

(ix) Questioning, involvement, discussions, openness in the classroom interactions appear significant correlates of pupil achievement, adjustment and attitudes.

(x) Students background like socio-economic status, IQ, age, maturity, learning style etc., have also been considered significant elements for effective teaching-learning process.

1.7.2 RESOLVED ISSUES
By appraising the review of the related studies, we can summarise few issues and facts which have been resolved by them:

(i) Personality of the teacher does effect the pupil's personality in various dimensions.
(ii) Every teacher's behaviour pattern will differ from that of other teacher.
(iii) No behaviour pattern could be identified as most effective.
(iv) Pupil learning outcomes are affected by multiple factors like classroom climate, teaching techniques, teachers personality, student background, nature of the content/task etc.
(v) Classroom interactions and learning cannot be related to a formula.

1.7.3 UNRESOLVED ISSUES

Despite of a wealth of well conducted research, school continue to function in the conventional way in terms of teaching-learning process. Compared with other sections of society, Indian education is operating on a lower level of technological sophistication. Research attempts have to be channelled in proper direction, if the challenge of teaching is to be adequately met. To meet the demands of an increasingly
complex world, classroom must be converted into a learning environment. Many techniques associated with this applied art have been subjected to formal analysis and research. Psychological theory has not yet proved entirely adequate to the task of developing principles of learning, applicable to the full range of classroom processes. Much still remains to be done in this aspect of teaching-learning.

The educational significance of the direct influence of the mature personality of the teacher upon the impressionable personality of children is worthy of evaluation. Since teacher influence is the most potent in the classroom situation, it is here that the student behaviour pattern is sought to be moulded. The way, a teacher teaches and his teaching is perceived by the students, determines in most of the cases, his influence in shaping the personality of the students. It is therefore, considered quite important to conduct a study on classroom interaction patterns.

In any school, there are always teachers with different teaching experience. Their classroom behaviour may differ from one another. To know how experiences are related to the classroom interaction
pattern and how it affects the learning of students, a scientific study is needed. The present study intends to address these questions.

Across the time, society has always been interested in the non-intellectual aspects of human personality. There is very few or negligible work done in regard to the non-intellectual aspects of personality. Initiative and attitude are two personality variables that may be considered to be basic outcome of any educational experience, particularly at the adolescent stage. In the present study, an attempt has been made to address these personality variables.

Every teacher is unique, so far as his teaching techniques are concerned. The best teaching techniques, results in best learning. The combination of these various techniques results in a novel classroom interaction pattern. What is required is the identification of differential patterns of classroom interaction and their outcomes in terms of the students behavioral changes in cognitive and non-cognitive areas. Hence the problem has been framed as follows: "Classroom Interaction Patterns in relation to some Teacher Characteristics and their effect on Learning Outcomes of science students at High - School Level".
This type of research may provide feedback to teachers about their classroom behaviour and student achievement. It may help to improve the quality of education in our classroom in general and quality of the teachers in particular.

1.8 DELIMITATION OF THE PROBLEM

This study involving many variables imposed certain limitations, within which the findings of present study need to be discussed.

(i) The present study is confined mainly to, Government schools and few public school of chandigarh only.

(ii) The problem has been delimited with respect to:
   (1) Teacher characteristics and
   (2) Student's learning outcomes.
   The variables of teachers characteristics were restricted to the teacher-effectiveness, few personality traits and teaching experience. While the range of learning outcomes was restricted to academic achievement, attitudes and initiative only.

(iii) All the instruments of enquiry were administered to the class IX at different times.
The classroom interactions will be observed for Science (biology) classes only.

The tools used for testing different variables in the present study are as follows:

1. Scale of teacher-effectiveness (teacher form).
2. Eysenck Personality Inventory.
3. Scale of initiative (prepared by Mehra, V.).
4. Scale of Attitude towards biology (constructed by the investigator).
5. Criterion referenced test (constructed by the investigator).
6. Observation systems of ETC AND RCS (for classroom observation).

Marginal limitation of criterion - reference test is that the investigator framed only 50 questions based on the two volumes of biology Question - Bank prepared by NCERT, NEW DELHI.

1.9 OBJECTIVES

The present study is designed to attain the following objectives.

PROCESS VARIABLE

1. To determine/categorise the common teaching
pattern of high - effective and low - effective teachers.

(2) To determine / categorise the common teaching pattern of Extrovert, Introvert, Unstable and Stable teachers.

(3) To determine / categorise the common teaching pattern of teachers with different levels of teaching experience.

PRODUCT VARIABLE

(4) To investigate the effects of the different patterns of interaction on the students' academic achievement.

(5) To investigate the effect of different patterns of interaction on the attitude of students towards science subject (biology).

(6) To investigate the effect of different patterns of interaction on the initiative among the students.

All the above aspects of product variable would be studied for:

a) Teacher effectiveness
b) Teacher personality
c) Teaching experience
1.10 HYPOTHESIS

The present study is designed to test the following hypotheses.

1) There will be no difference in the academic achievement of students of high-effective and low-effective teachers.

2) There will be no difference in the attitude towards biology of students belonging to high effective and low effective teacher.

3) There will be no difference in the initiative level of students of high effective and low effective teachers.

4) There will be no difference in the academic achievements of students belonging to extroverts, introverts, unstable and stable teachers.

5) There will be no difference in the attitude of students towards biology for extrovert, introvert, unstable and stable teachers.

6) There will be no difference in the initiative level of students of extrovert, introvert, unstable
and stable teachers.

7) There will be no difference in the academic achievement of students of teachers with different level of teaching experience.

8) There will be no difference in the students attitudes towards biology, belonging to teachers with different teaching experience.

9) There will be no difference in the initiative level of students belonging to teachers with different teaching experience.