INTRODUCTION

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CHAPTER I

INTRODUCTION

Education is never ending process, which is intricately interwoven with life, enriching the individual with a variety of experience, kindling the flames of knowledge with constant probing into the mysteries of life, within and without. Each educational institution should produce educated, intelligent individual who can think independently not a mass which can be manipulated. For this, the emphasis in education should shift from cramming information to stimulating analytical thinking. Charles E. Silverman in his Crises in Classroom rightly mentioned “What tomorrow needs is not mass of intellectual, but mass of educated men to feel and to act as well as to think. Herbert Spencer said “Education is the training of completeness of life; it will bring out the perfection which is latent in every man”.

Education does not mean pouring of lot of ideas or information into the brain of the individual. It is a more process of drawing from within than putting from without. It means the gradually mental growth and enrichment of man from infancy to maturity.

1.1) The Role of the Teacher in a Developing Society

In recent years education has been receiving a great deal of attention particularly in respect of its potentialities for overall
The economists construe education as primarily an investment in human capital, in the sense, that, through education the required degree of skill and knowledge is created and imparted to the population so as to render it both efficiently and usefully to the society. This approach should have significant consequences for the allocation of national resources for educational programmes. Although one has to observe here that in India, unfortunately, enough resources are not made available for educational programmes. There is also a general agreement about the social investment function of education. Education is broadly looked upon as an agency which would promote the development of an enlightened society. Education is conceived as a dispeller of ignorance. It is felt that planning of the affairs of a society cannot be undertaken without a sound educational programme. Likewise, education is also looked upon as an agent of modernization and a number of symposia, discussions and seminars have been convened. A perusal of some of these papers makes one feel that "education" is looked upon as an "ideal type" in the sense, that the capacity of education to fulfill all the functions noted above seems to have been exaggerated. Education is looked upon almost as an independent variable.

1.2) The Role of a Teacher in the Process of Education

Education as a Sub-system

It must be clearly stated at the outset that education is an important social institution and as such can at best be conceived as a
sub-system. Education is impinged upon by the total system comprising of economy, polity, family and agencies of pattern maintenance and agencies of integration. Thus the economic resources and facilities which are required for conducting educational programmes may or may not be made available in terms of the state of economy. Polity might also make important decisions in respect of the nature and function of education and deprive education of its essential autonomy. The forces of pattern maintenance such as family, kinship, etc. might also interfere with the openness of the educational system. Similarly, a particular mode of integration in the sense of a given system of stratification might also impugn upon the educational system, e.g., education being denied to certain strata. It is fact that it is a good methodological devise or precaution to analyse education as a subsystem so that the common error of exaggerating the role of education can be avoided.

1.3) Education as a Communication Model

Education has also been analyzed from the point of view of communication. Communication of existing knowledge and skills along with the component of social values is looked upon as the major function of education. In this sense, the pattern maintenance function is obviously emphasized. Thus conceived, education would be a static force. However the present author pointed out, that even as a communication model education can play a dynamic role in the sense of imparting new knowledge and skills as well as social values, provided certain requisites
are satisfied. The formulation of education as a communication model and as an "ideal type" in the sense that it exaggerates the role of education tend to conceive education as a self sufficient and closed system, which it is obviously not nor can it be.

1.4) The Role of a Teacher in the Educational Process

There is no denying that the teacher plays a crucial role in imparting education. Nevertheless, there are other variables in respect of education as a communication process. Thus, the students or to whom education is imparted, the teachers, the structural set-up in which education is imparted, the administrative machinery, the educational system including the courses, syllabi and examination system, the parents of the students, the economy and polity, etc., impinge on the communication process in various degree of importance. The traditional conception which confined education as a process of communication to the analysis of the teachers and students no longer holds good for various reasons.

Then again it would be idle to imagine that the teacher operating at various levels e.g. from primary education to post-graduate and research training would play the same role. The differentials in role at various levels called for role specificities. Briefly speaking, at the primary and middle school level greatest emphasis is placed on pattern maintenance. Therefore, the teachers also should naturally convey that, On the other hand, at the high school and college levels greatest stress is placed on
adaptation. Similarly, education is looked upon to promote a newer level of integration. The responsibility of education to inculcate amongst the students a capacity to integrate the diverse social elements, in the light of the changing and new conceptions and ideas, becomes particularly marked at the higher level of education. That is why education is expected to provide society with leadership in thought and action. Similarly, the adaptive primacy is supposed to take care of efficiency. Naturally, the teacher would be expected to perform a very crucial role in development. As pointed out earlier, not every teacher can 'however' discharge this expected responsibility in view of the differential roles at various levels.

1.5) The Goals of Education in a Developing Society

To the extent that development is not confined to mere economic progress and prosperity, cognizance has to be taken of the social goals such as development of personality, individuality, freedom, equality, social justice, human welfare, etc. Education is also desired and expected to promote the attainment of these goals. There is no denying, however, that there are priorities in respect of various goals of education. In the first place, education and training are looked upon to facilitate a continuous supply of new skills and knowledge so as to master the challenge of the new situation. By contributing to the advancement of knowledge, education can ensure efficiency in a social system. The adaptive primacy of education is thereby highlighted. It is a matter of
primacy in their educational and training programmes have at least lagged behind if not perished. Small wonder then, that in highly developed and fast developing society's utmost attention is paid to the adaptive primacy of education. Further through advancement of knowledge and the development of science, technological and other progress becomes feasible. There has to be continuous interaction between advancement of knowledge and its application. The purist attitude to knowledge in the sense that knowledge is not supposed to be tarnished by utilitarian considerations would no longer be functional.

Secondly, education is looked upon to facilitate integration of society at newer levels in the sense that it is expected to promote the capacity to devise and accept new bases of social stratification. This aspect can be taken care of, by promoting open-mindedness through education. Similarly, education is expected to promote rationality and scientific spirit, the essence of which is characterized by the reversibility of propositions. Promotion of autonomy in the individual members as well as the society as a whole is also conceived to be the major goal of education. Education is thus conceived to be a liberating force in the realm of thought and action. In consonance with the formulation that education is a social institution or a subsystem, education is increasingly expected to promote social sensitivity amongst the recipients of education. The ivory tower attitude of educated people naturally comes in for a sharp criticism. Philosophically speaking, education is supposed to
promote total understanding of total situation. Therefore, knowledge has to be tempered with social sensitivity. Naturally, this has implications for inculcation of a sense of social responsibility. Further, education is expected to disabuse the minds of the recipients of erstwhile ignorance and prejudice. Inculcation of a new set of values based on social equality, justice, freedom etc., would naturally be regarded as an important goal of education. Thus education is looked upon to promote efficiency as well as a new set of values which would be dynamic enough to take cognizance of the changing situation. In a developing society, therefore, very heavy demands are made on education. Since the teacher plays a very crucial role in the process of education a great deal would depend on his role and performance in ensuring the goals of education.

1.6) Some prerequisites for the Teacher’s Role Performance

In order that the teacher performs the above-mentioned role so as to promote the goal of education in respect of a developing society, there are certain prerequisites which have to be satisfied. First and the foremost comes the training and equipment of the teacher. The academic and practical training must be of the highest order relevant to the stage or level of operation. There can be no such thing as the finality of role for it is necessary to sensitize the teacher to new developments in the field including the techniques of teaching. Therefore, the training programmes should necessarily incorporate refresher courses and workshops. The
importance of the personality of the teacher cannot be overemphasized. It
can be said here that the minimum personality requirement in this
context should be the professional involvement and commitment of the
teacher. A situation where the teaching career is resorted to as the last
resort would be certainly disastrous from this point of view. This
apprehension is borne out particularly in the case of many primary and
secondary teachers, if not college teachers, by and large. The professional
values should be uppermost in the minds of the teacher because
otherwise there would be a continuous comparison with others giving
rise to a sense of frustration. It is not through sense of professional
achievement that a teacher can hold on to his own. Moreover, it is
essential for a teacher to internalize some of the values like social
equality, freedom, justice, etc., which are essential for a developing
society. It is very important that the teacher should at least be aware to
these values. The freedom and autonomy of a teacher are also extremely
crucial. If teacher is hindered in his professional duties and role
performance one cannot expect that the goals of education can be ever
realized. While in philosophy a teacher is eulogized as a free and
independent person in reality, at least in India, very little is done to
ensure such freedom and independence. This point will be further
discussed below. The social esteem and prestige of a teacher is also very
crucial for satisfactory role performance. It is not uncommon to hear
many a teacher advise his students against taking to teaching as a
career. Again notwithstanding the eulogized and romanticized status of
the teacher in the traditional Indian society, the unenviable status and
esteem of the teacher is a patent fact.

The Institutional Set-up

There are also certain prerequisites in regard to the institutional
set-up which would be congenial for the expected role performance of the
teacher. In the first place, it must be mentioned that the cultural
emphasis on pattern maintenance has stultified good teachers. The
amount of obstacles which are usually put in the way of introducing
modifications, reform and change in the programme, content and
methods of education would dishearten even a stout-hearted teacher. It
has been mentioned earlier that the educational system puts a damper
on innovativeness and the attitude of experimentation. Similarly, the
administration in educational systems with its rigid hierarchy also
militates against initiative and drive on the part of the teacher. The
economic circumstances which prevent teachers from being well paid at
all levels and also from providing them the necessary facilities for their
professional growth and advancement would naturally hamper their
progress. Then again, political intervention in matters of education can
also have disastrous consequences, e.g., the whole controversy arising
from the medium of instruction.
It has been observed earlier that education is only a subsystem. Students form a very important and significant variable in the process of education. Through the students the parents also play an important part in the whole process of education. Therefore, the student-teacher relationship which must be mainly professional assumes importance to the extent that the teacher is expected to play a diffused role, teacher cum-parent or guardian, the efficacy of his role is likely to be reduced. Likewise, for the maintenance of the proper relationship between the teachers and students an adequate degree of support must be forthcoming from the parents or guardians of the students. The relationship amongst teachers is also important and should be also purely guided by professional considerations.

**Teacher’s Leadership**

The dominating nature of a teacher is essential in order to make the students take an interest in the topics of the curriculum. Hence this domination is not a mere personal ascendency, but purely to establish his ascendency over his students. This personal leadership is neither harmful nor dangerous. It is only a symbol of authority which the teacher could never gain as an individual. Hence, teacher’s leadership is a peculiar form of leadership. There is a ritual which goes with it, and personal ascendency must be filtered through that ritual. The teachers’ natural role is embodied in the ritual of the classroom. He has subordinated himself to that role. Many teachers have to assume such
roles of leadership as expected by the institutions. This institutional leadership makes him maintain a social distance between himself and students. This means he is not socially accessible. There is always a social gulf between them. Similarly, the teacher must always hold himself aloof and hide most of his personal characteristics from his students. Added to this, he must be impersonal at all times. He must give his commands dispassionately. He must simply act according to the direction of the institutional. So he becomes in such circumstances leader of the institution and any action against the demands of the institution breeds contempt. This type of teacher-domination is expected to be tolerated by his students. Students consent to it. This consent is conditional upon the teachers' continuing to play his institutional role. As long as the teacher maintains his institutional leadership, the students in the classroom accept his authority

Teacher's leadership is associated with his prestige. This factor of prestige creates an image of the teacher in the minds and hearts of men. Some kind of picture of his total personality will be formed in the minds of the young pupil. It is quite natural for the pupils to develop curiosity about the teacher and form a picture of the teacher's total personality. This invariably happens because a social-distance is maintained always between the teacher and the taught. Further, the teacher represents institutional character and this makes the pupil attribute greater prestige to the teacher. Carefully regulated social distance enhances the
prestige of the teacher. In order to maintain dominance, the teacher is expected to play several roles which are dynamically related to an authoritative role and which in turn help to make the teacher's authority acceptable. These roles are considered to make the teacher – pupil relationship happier and more useful. These roles the teacher is expected to play present role-conflicts which make him frustrated. In this frustrated condition he has to train his pupils

1.7) Teacher in a Modern Society

Rapid changes are taking place in Indian society since Independence. Changes in family, marriage and ideas of life are the common features of the present day. Rapid industrialization and urbanization have affected religion, economics, political life and recreational tendency of the people. In a process of change, it is but natural that the loss of idealism has taken place. "Truth" has been given a lower status. "Hatred" and "deceitful actions" have gained greater appreciation. Certain sections of the people have grown rich by adopting all kinds of objectionable methods. In such changing conditions, teachers have found it difficult to play the roles expected of them by society since they are under-paid and subjected to social segregation.

Dr. Radhakrishna Commission Report (1948) has very clearly laid down the following expectations regarding Teachers and their roles: "The teacher occupies a very important place in the field of education. The
success of educational process depends on the character and policy of teacher. The primary responsibility of the teacher is to arouse the interest of the people in the field of study for which he is responsible. He should stimulate a spirit of enquiry and criticism that his pupils may acquire a habit of exercising independent and unbiased judgement. A good teacher desiring to achieve the results in the intellectual field must instill into his pupils responsibility for right values and truth. He must inculcate habits and modes of behaviour through which their life may be moulded to their realization.

The quality of education is largely depending upon the quality of instructions teachers provide in the class-room. As such, one should pay proper attention to change the strategies of instruction and efforts should be made to introduce new methods and techniques to suit the needs of our. In our country innovations in teaching-learning process are gaining slow but steady grounds in schools and other educational institutions; slow because the word of teaching is more conservative as its values were established by a sector of society, where in competition and growth were not essential for survival. The schools, colleges and universities do not generally adopt the same thrusting approach in their affairs as they do in business and industry. That is why the teachers demands to see the value of new techniques and innovations like, project method, interaction method, microteaching, team teaching and heuristic approach before they prepare themselves to use them.
Teaching as conventionally understood by a traditional teacher, is the act of disseminating information to the learners in the classroom. Flanders (1951) says if one observes the traditional classroom teaching, one finds that either the teacher is delivering information or one of the students is reading from the text books. Burton (1950) defined teaching as "stimulation, guidance, direction and encouragement of learning." The definition has four key words which need explanation: Stimulation, which means to cause motivation in the learner to learn new things, it is to create an urge to learn; direction means (teaching) directional or directed activity, which lead to pre-determinate behaviour guidance means to guide the learner to develop his capabilities, skills, attitudes and knowledge, to the maximum extent and encouragement which should be there to ensure maximum learning outcomes.

1.8) Teacher Effectiveness

Teaching is a moral enterprise. The teacher, whether he admits it or not is out to make the world a better place. His intention is to benefit others. So it is necessary to know how far he benefits society and how far he is effective in his deed. The Dictionary of Education (Good and Markel, 1959) defines teacher efficiency as "the degree of success of a teacher in promoting instructional and other duties specified in his contract and demand by the nature of his position." Marsh and Wilder (1954), after reviewing research on teaching effectiveness, averred that, "no single specific observable teacher act has yet been found whose frequency or
per cent of occurrence is invariably and significantly correlated with student achievement”.

The effective teacher is only an abstraction. Effectiveness stems from reasoned or value judgment. Teacher effectiveness is judged on the basis of goals of education. The teacher is effective only in so far as the facilities the achievement of these goals. The term “teacher-effectiveness” will be used to refer to the results a teacher gets or to the amount of progress the pupils make towards some specified goals of education. Reviews of researches in teaching effectiveness are extensive and numerous (Barr, 1953; Barr, 1961; Davis and Satherly, 1959; Domas and Tiedman, 1950; Evars, 1961; Gage, 1963 and Medley and Mitzel, 1958) and have shown that there is no unanimity about the criteria of teacher success or effectiveness. Alexander and Halerson (1957) state that, “it seems fair that teachers whom learners like best are those who have the best interaction with pupils and therefore have the potentiality for greater success in teaching.” This assumption is supported by the findings of Hart (1964), Coats (1972) and Koul (1972). It has been said that the central problem in understanding teacher behaviours and teacher effects (Ryans, 1669, p.2). Ryans (1969) feels that teaching is effective to the extent that the teacher acts in a way that is favourable to the development of basic skills, acquiring desirable attitudes, value judgments and adequate personal adjustment of the pupil.
Effective teachers are those who contribute to the growth of pupils. Education is designed to develop in the pupils certain knowledge, skills, attitudes and appreciations. Teacher effectiveness criteria are frequently classified on the basis of methodology used in obtaining the criterion measurements.

To know the effectiveness of the teachers, some researchers used rating scales using different sources of judgments resulting in student ratings, principal's ratings, peer ratings and supervisor's ratings or administrator's ratings. But later these ratings were used less frequently, because they did not correlate with each others' ratings and they also did not take into consideration the actual classroom interaction.

Teaching effectiveness criteria is classified according to goal proximity as presage, process and product criteria. The product criteria depend upon a set of goals towards which teaching is directed (Mitzel, 1960, p. 1984). These goals are stated in terms of behavioural changes on the part of students which may be in terms of achievement, attitude or adjustment. Rommers (1950) presented the arguments for assessing teaching competency in the light of effects on students. These effects are variously called student gains or student growth or student outcome, all referring to the product variable.

The presage or input variable relates to the teacher or pupil characteristics which play a role in the teaching-learning process. According to this criterion, measures of teacher's intellectual ability,
grades made in college, personal appearance, test scores and ratings usually made outside the classroom are used to measure teacher effectiveness.

The process criterion is one which is connected to the process of teaching. Needless to say that it is related to teacher behaviour. This is measured in the classroom in terms of conditions, climates or typical situations involving the social interaction of students and teacher. According to this criterion, observation of both teacher behaviour and student behaviour is used to measure teacher effectiveness.

The bulk of studies on teacher effectiveness produced negative results as teacher behaviour was not taken into consideration till the 1930’s. It was only with the studies of Anderson (1937), Lippit and White (1938), Withall (1949) and Flanders (1951), that serious efforts were made at studying teacher behaviour.

1.9) Classroom Interaction

One of the important innovations in classroom teaching is the analysis of classroom interaction between teacher and students. This technique of analyzing teaching behaviour has been evolved to improve classroom teaching. It also provides insight into the nature of the classroom communication and helps in modifying teachers’ behaviour.
Nature

We may think that teaching is an influencing or directing activity in which a teacher tries to influence the student, represented, in a group or as an individual. No doubt teaching is influence-directed (Chauhan, 1979, p.139) activity, but is not only a one way process. It is a two way process, wherein both teacher and student influence each other. Teacher influences the student by giving directions, expressing his ideas, lecturing, clarifying the difficulties of students and questioning, whereas students ask questions, participate during the discussion, ask doubts and in addition, use non-verbal communication consciously or unconsciously. The teacher also used non-verbal communication.

Meaning

According to Flanders (1960) classroom interaction may be defined as "any system for coding spontaneous verbal communication, arranging data into a useful display, and then analyzing the results in order to study pattern of teaching and learning." A particular system for interaction analysis usually includes:

i) set of categories each defined clearly,

ii) Procedure for observation and a set of ground rules for coding.

iii) Tabulation of data gathered, and

iv) Method of interpretation.
Flanders' (1960) Assumptions of Classroom Interaction Analysis

1. For more than 60% of the time one would hear some talking in a classroom.
2. Verbal behaviours can be observed with higher reliability than most non-verbal behaviour and also it can reasonably serve as an adequate sample of the total behaviour in the classroom.
3. The teacher exerts a great deal of influence on the pupils' behaviour. Pupil behaviour is affected to a great extent by the type of teacher behaviour.
4. The relation between students and teachers is a crucial factor in teaching process.
5. A good social climate in the classroom affects learning positively.
6. Children tend to be conscious of a warm acceptance by the teacher, and to experts greatest fondness for the democratic teacher (Perkins, 1950).
7. Role of classroom climate is crucial for learning.
8. Minimizing the defects in teaching-learning process, through research is possible.
9. Changing classroom behaviour through feedback is possible.

Earlier to Flanders, Withall (1949) had developed and used a seven category scale to quantify teacher behaviour as "teacher-centered" and 'pupil-centered.' The teacher-centered behaviour favours the dominant role of the teacher in the classroom, whereas pupil-centered approach favors the freedom for pupils to participate and express their view in classroom teaching. Flanders (1960) defines teacher behaviour as "those..."
acts of teacher which occur in the contest of classroom interaction." He developed a ten category system to observe teacher verbal behaviour in the classroom. It is popularly known as Flanders’ Interaction Analysis Category System (FIACS). Flanders (1961) termed teacher behaviour as “indirect” and “direct” behaviour. Indirect teacher behaviour expands the freedom of the pupils to participate in the class’ teacher accepts feelings and ideas of the pupils, praises and encourages them to express their feelings. There will be a warm and congenial atmosphere in the classroom whereas direct teacher behaviour is signified by giving directions, lecturing and criticizing the pupils which leaves very little scope for pupils to participate in the discussion. FIACS can be used to assess the socio-emotional climate of the classroom.

Similar to the Flanders’ (1960) “direct” versus “indirect” teacher behaviour or teaching style, some investigators worked to search for other teaching styles after attempting to describe teacher behaviour to pupil growth outcome which is a criterion of teacher-effectiveness.

1.10) Student Personality and Achievement

Another important factor affecting pupil achievement is that of personality variables. Analysis of educational achievement in terms of its predictors has been increasing as a focal point of research activity. Some attempts have been successful in establishing a direct relationship between certain variables and academic performance. During the past two decades there have been fervent researches to probe into variables
other than intelligence which might determine achievement. These variables may be grouped as under:


ii) Personality variables including all its factors, types, traits, attitudes and interests (Child, 1964; Corties, 1963; Demos and Spolyer, 1961; Elliott, 1972; Eysenck, 1957; Lynn and Gordon, 1961; Mohan, 1972 and Savage, 1961). Quite a few investigations have reported certain definite trends, facilitating or interfering, between some personality traits and academic achievement. The results indicate trends but fail to be conclusive and non-controversial. A general tendency has been to relate a major type of personality to academic achievement rather than to discover a relationship between a number of personality traits and academic attainment. Eysenck (157 developed a personality theory providing a major landmark in this approach. Since the formulation of his two dimensional approach to personality—Extraversion/Introversion and Neuroticism, many attempts have been made in assessing the relationship of extraversion/ introversion and neuroticism to academic attainment. Bending (1957) and Eysenck (1963) while not denying the existence of other factors in addition to neuroticism and extraversion contend that these two factors contribute to a description of personality more than any other set of factors in the non-cognitive field. It is contended that neuroticism and extraversion affect academic achievement, but findings concerning direction and magnitude of their influence are not consistent. Elliott (1972), Eysenck (1957), Eysenck and Cookson (1969), Honess and Kline (1972), Lynn (1959), Lynn and Gordon
(1961) and Savage (1961) have reported that stable introverts (low neurotic/low extraverts) performed better in educational tasks.

Another group of studies those of Entwistle and Cunningham (1968), Entwistle and Walsch (1969) and Eysenck and Cookson (1969), Savage (1966) have reported that both extraversion and neuroticism are negatively associated with academic achievement of pupils. Indian studies of Basu (1968), Mohan (1973) and Srivastava (1980) also revealed similar results. However, some of the investigators have reported that neuroticism to be negatively associated and extraversion to be positively associated with achievement (Elliott, 1970; Husain, 1976; Orme, 1970; Rushton, 1966; Vohra, 1981). Another group of researchers have reported neuroticism to be negatively associated and extraversion unrelated to academic success (Brar, 1972; Davison, 1958; Eysenck, 1961; Gupta, 1971; Levin, 1958; and Mohan, 1968).

ATI research resulted from Cronbach’s early and insightful plea for an end to the search for simple solutions to the search for simple solutions to the complex problem of teaching effectiveness (Cronbach, 1957). Cronbach urged that the quest for the effective style or method or technique should be upgraded. Barliner and Cohen (1973) phrased it was follows: “Given this set of learner characteristics, what is the best way to tailor instruction for this particular type of learner? Teaching in this light requires one to consider simultaneously a host of learner characteristics, insight into one’s own knowledge and skills, awareness of
the material to be taught and the learning environment in which the teaching is to occur. The added complexity of ATI has been formidable and lead Cronbach and Snow (1977, p. 492) to state flatly that “no aptitude treatment interactions are so well confirmed that they can be used directly as guides to instruction.”

1.11) Need for the Present Study

Whether teaching is an Art or a Science, to be an effective teacher one must develop certain attitudes and qualities, which make teaching effective.

The role of teachers, particularly those of secondary schools in shaping the personality of younger generation, is becoming increasingly important. Whether teacher is viewed as a model, director, supervisor, guide, co-worker or leader, the teacher has a crucial role in moulding the behaviour of pupils. The secondary school teacher may be regarded as the builder of the nation. The task of a teacher today, is far more difficult than it was a few decades ago. The tremendous explosion of knowledge, development of teaching technology and availability of different channels of education, like TV, video and audio lessons have on the one hand provided opportunities which were not available for effective teaching, and on the other hand, increased the challenges and responsibilities of the teacher. In the past, when the teacher was the main source of knowledge he / she could not afford to be static and lethargic. Studies
have been conducted to analyze and determine the special qualities of successful teachers. Although the studies have revealed different findings, there are certain basic qualities, which are common to most of the successful or effective teachers. These qualities are to be imbibed by all the teachers, if they are being effective teachers. The dimension of effective teaching normally includes: human relations dimension, instruction dimension and evaluation dimension. Those teachers who are good on these dimensions can become good professionals in their fields. Teachers with commitment, interest and love for teaching can be more effective in their profession.

Teaching process is an interaction between the personalities of the teacher and the pupils. The teachers' personality, his values, attitudes, outlook, behaviour and overall performance exert illustration on his pupils. A competent teacher is considered to be one who is not only intelligent, personally desirable and socially adequate and also professionally able individual with optimum motivation for self-actualization. Researches conducted so far have revealed that teachers' personality as well as students' personality have significant effect on students' academic achievement. Many studies have related the two important dimensions of personality, extroversion and neuroticism, to school achievement. The former characterizes the person who is outgoing, social, and interested in others rather than himself. The latter is developed from chronic anxiety, caused by multiple and obscure
sources, that makes the person ineffective in carrying out the ordinary affairs of living. He feels exhausted, helpless, and excited. The findings though not completely consistent, have tended to indicate that these two personality variables of students are important in predicting school achievement. Attitudes of students towards science and teaching profession have been shown to be a significant predictors of school achievement. Studies have revealed that students who achieved the highest grade in each subject had students with highly favourable attitudes towards science and teaching profession. Attitude is a comparatively stable, emotional and learned pattern of behaviour, which predisposes the individual to act in some consistent way towards his / her profession.

Chandra, D. (1976) studied the perception of work values in teaching. The study, among other things, revealed that students with favourable attitude towards teaching perceived their achievement effectively on work values like social service, chances of progress, intellectual challenge, prestige and power, etc. Further, effective teachers differed significantly from ineffective teachers on work values like economic returns, chances of progress, prestige and power, etc. Sukhwal, K.D. (1977) studied the attitudes of students towards the teaching profession. The study revealed, among other things, that a high percentage of those who were identified as having a favourable attitude towards the teaching profession gained more than with unfavourable attitude.
Thus, it is revealed that a liking for the profession is an essential pre-requisite for its success in the teaching profession, success is measured in terms of the academic achievement of students. Hence, the teachers should develop right type of attitude amongst the students and also towards his profession in order to achieve the goal in the educational field. The goal is to transform the personalities of the students into beings useful to the society.

The review of studies conducted so far clearly shows that although, teaching effectiveness, personality and attitudes of the students are thoroughly investigated and these studies examined their effect on dependent variable separately. There is a need to study the interactive effect of these variables on the dependent variable. Therefore, the pre-sort study is an effort to investigate the interactive effect of students' personality, attitude towards science and teachers teaching effectiveness on the academic achievement of students in science.

1.12) Research Questions

Specifically, the current study attempted to answer the following questions:

1. Whether students personality type like extroversion introversion and neuroticism influence upon academic achievement of students in independently in case of male teachers, female teachers, teachers with minimum qualifications, teachers with higher qualifications, teachers
with higher teaching experience and teachers with lower teaching experience?

2. Whether students attitude towards science influence upon academic achievement in science independently in case of male teachers, female teachers, teachers with higher qualifications, teachers with minimum qualifications, teachers with higher teaching experience and teachers with lower teaching experience?

3. Whether teachers' teaching effectiveness influence upon academic achievement of students in science independently in case of male teachers, female teachers, teachers with higher qualifications, teachers with minimum qualifications, teachers with higher teaching experience and teachers with lower teaching experience?

4. Whether the interactive effect of students personality types, attitude towards science and teachers' teaching effectiveness taken 2 variables and 3 variables at a time, significantly effect upon the academic achievement of students in science when the data were classified into male teachers, female teachers, teachers with higher qualifications, teachers with minimum qualifications, teachers with higher teaching experience and teachers with lower teaching experience?

1.13) Statement of the Problem

"Interactive Effect of Teacher Effectiveness, Secondary School Student Personality and Attitude towards Science on their Academic Achievement"
The present study is intending to know the factors affecting on academic achievement like teacher effectiveness, students personality factors and attitude towards science.

1.14) General Objectives of the Study

The present study was designed with the following general objectives.

1. To study the effect of students personality factors, attitude towards science and teachers' effectiveness on academic achievement in Science.

2. To study the effect of male teachers' effectiveness, students personality and attitude towards science on academic achievement.

3. To study the effect of female teachers' effectiveness, students personality and attitude towards science on academic achievement.

4. To study the effect of higher qualification of teacher effectiveness, students attitude towards science and personality on achievement of students in science.

5. To study the effect of minimum qualification of teacher effectiveness, students attitude towards science and personality on achievement of students in science.

6. To study the effect of higher experienced teachers' effectiveness, students' personality, attitude towards science on achievement in science.
7. To study the effect of lower experienced teachers' effectiveness, students' personality, attitude towards science on achievement in science.

Specific Objectives

1. To study the effect of students' personality factors like extroversion and high neuroticism and introversion and low neuroticism on achievement in Science.

2. To study the effect of students' desirable and undesirable attitude towards science on academic achievement in Science.

3. To study the effect of teachers' effective and ineffective teaching effectiveness on academic achievement of students in Science.

4. To study the interactive effect of students' personality factors and attitude towards science on academic achievement of students in science.

5. To study the interactive effect of students' personality factors and teachers' teaching effectiveness on academic achievement of students in Science.

6. To study the interactive effect of students' attitude towards science and teachers' teaching effectiveness on academic achievement of students in Science.

7. To study the interactive effect of students' personality factors, attitude towards science and teacher teaching effectiveness on academic achievement of students in science.