Chapter - II

Review of Related Literature
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REVIEW OF RELATED LITERATURE

2. INTRODUCTION

The related literature forms the foundation upon which all future work will be built. It enables the investigator to know the means of getting to the frontier in the field of his research. It also provides ideas, theories, explanations, hypothesis or methods of research, valuable in formulating and studying the problems. It furnishes the researcher with indispensable suggestions about comparative data, good procedure, likely methods and tried techniques. The information about the activities of previous investigations stimulate the researcher to use each bit of knowledge as a starting point for new and further progress.

Academic achievement is of paramount importance, particularly in the present socio-economic and cultural contexts. Obviously, in the school, great emphasis is placed on achievement right from the beginning of formal education. The school has its own systematic hierarchy which is largely based on achievement and performance rather than ascription or quality. Thus the school tends to emphasize achievement which facilitates, among other things, the process of role allocation for the social system. The school performs the
function of selection and differentiation among students on the basis of their scholastic and other attainments and opens out avenues for advancement again, primarily in terms of achievement.

The student at school is trained to accept the hierarchy based on achievement. This helps him to be released from the family status in certain ways, his personal status is inevitably a direct function of the position he achieves, mainly in the classroom setting. Acceptance of the system of hierarchy in terms of achievement helps also to integrate the school system in so far as there obtains a congruence between the values of a family and those of society.

A considerable number of students from schools go to colleges and institutions of higher learning. It is very important to ensure that such students acquire the requisite competence so as to benefit most out of higher education. Setting the stage for the achievement of the youth is thus a fundamental obligation of the educational system at the school stage.

A thorough examination into the large volumes of related literature to the area of academic achievement of children at various levels showed that the criterion variables have been studied from different angles. It was
inferred from the majority of the studies that academic achievement is the outcome of several forces acting upon it. Some of the studies attributed that the success or failure of students in academic subjects was the result of several intellectual and non-intellectual factors. It was also observed from these studies that some of the studies emphasized the role of intellectual factors and some other studies stressed the impact of non-intellectual factors on academic achievement.

Guba and Cites (1955) stated "A theoretical framework sharpens research objectives, suggests what variables should be eliminated as non-meaningful and hence wasteful, increases the likelihood of significant findings, simplifies the complex task of interpreting results, aids in interpreting meaningful even if non-significant and makes research cumulative from one study to the other".

Academic achievement is a multidimensional phenomenon and is affected by two main types of factors: subjective factors and objective factors. Subjective factors are related to the individual himself, intelligence, learning ability, aptitude self concept, perception of school, study methods, interests in activities, level of aspiration, motivation, attitude towards teachers and courses and adjustment within the self and the society.
Objective factors lie within the environment, socio-economic status, family traits and value system, educational system, system of evaluation, school situation and environment, number of students and size of the school.

The central aim of all formal educational efforts is academic achievement on the part of the students. Even though, it is desirable to have around development as the goal of educational process where academic achievement would be just one of the dimensions in most educational institutions, academic achievement continues to be the exclusive concern narrowing down the very concept of educational process. Nevertheless, it is important to note that achievement in school subjects is not an independent phenomenon. Rather, it is directly influenced by a number of factors, some of which are personal to the individual while many others are located in the environment in which learning process takes place. Thus in order to fully understand the concept as well as the process of academic achievement it is imperative to identify and explore various factors related to academic achievement.

The effectiveness of any educational system is gauged to the extent the pupils involved in the system achieved whether it be in cognitive or psychomotor domain. In general terms, achievement refers to the scholastic or
academic achievement of the student at the end of an educational programme. It is to this concept that the term achievement is referred to here. To maximize the achievement within a given set up, therefore is the goal of every educationist, a teacher or an educational administrator. Research has come to our aid looking into what variables - personal, home, school etc., promote achievement and what are determinents to it.

The present investigation took note of the above facts and attempted to treat some of the prominent intellectual and non-intellectual factors as sociolgical and psychological factors and coined it as socio-psychological variables and academic achievement on the basis of several investigations.

The topic for the present study being "A study of pupils' achievement in science in relation to certain socio-psychological variables", the review of literature is concerned with the following aspects.

1. Studies related to sociological variables
2. Studies related to psychological variables
3. Studies related to socio-psychological variables
4. Studies related to personal and situational variables
Sociological Factors and Academic Achievement:

The following review of several works throws some light on the large number of sociological and psychological factors and how they influenced the scholastic achievement of pupils.

2.1 CONCEPTUALISATION OF ROLE EXPECTATIONS, SCIENTIFIC APTITUDE AND ACADEMIC ACHIEVEMENT:

2.1.1 ROLE CONCEPT:

Specific role definition is necessary for the smooth functioning of the organisation, as well as for enabling the role occupant, in this case the teacher, to understand the parameters of his own activities, and be aware of the behaviour expected both of him and that expected from others - colleagues, principal, students, parents, community, towards his role. Further, the teacher's role forms a part of a complex set of other role systems which define his role.

Bolton (1973) ascribed to teacher evaluation on the following general goal to safeguard and improve the quality instruction received by the students. With the emergence of role theory in several disciplines and its gradual application to educational personnel particularly to
teachers, the different patterns of behaviour began to be
categorized and combined under different roles.

**Role Definitions:**

According to Linton (1945) 'role' is defined as "the sum total of the cultural patterns associated with a particular status". He also defined (1947) 'role' as dynamic aspect of status'.

Sargent (1951) says "A personal role is a pattern of type of social behaviour which seems situationally appropriate to him in terms of the demands and expectations of those in groups. He further pointed out that roles have ingredients of cultural, of personal and of situational determination. But never is a role wholly cultural, wholly personal or wholly situational.

Havighurst and Neugarten (1957) defined role as "a coherent pattern of behaviour common to all persons who fill the same position or place in society and a pattern of behaviour expected by other members of the society.

Dauvendorf (1961), Haberams (1968), Sader (1969) and Ulich (1974) cited the following aspects of role.

1. Role playing is governed by roles in the form of complementary expectations of behaviour.
2. The role rule as understood by the individual is not absolutely identical with the objective role definition and the actual behaviour.

3. Roles are quasi objective i.e., complexes of behavioural rules, independent of the individual who is made suitable by them.

4. Roles are defined and changed by society.

5. Roles are behavioural expectations and lay claim to positive commitment.

6. Roles are within limits, suitable and eachangeable.

7. A voluntary element is involved in that the individual accepts or rejects the role.

8. Behaviour is characterised by roles only temporarily until its determination is taken over by different roles or by the self.

9. Within the experience of the role player there is, behind the role, his actual personality, the self.

Finner and Sherward (1964) concluded role as a set of behaviour which is expected of everyone is a particular position, regardless of who he is.

Newcomb (1965) reported two important points in the consideration of roles. The first is the relation of every position to the purpose of the entire system and the second is that each position carries with it definite
prescriptions for behaving towards other related positions. Ways of behaving towards others, which are defined for different positions are called roles.

Biddle and Thomas (1966) stated that the idea of 'role' has been used to denote prescription, description, evaluation and action. It has referred to covert and overt processes, to the behaviour of help and others to the behaviour of an individual initiates versus that which is directed to him. In the broad sense, it may refer to any of the following three concepts - role expectations, role perceptions, and role performance. This viewpoint is similar to that expressed by Gross et al., (1958) in their classical study of role analysis.

Sengupta (1966) stated role as a set of expectations.

Davis Keith (1967) mentioned that the idea of role comes from sociology and is the pattern of activities of action expected or a person in its activities involving others. It arises as a result of position he occupies in social structure as he interacts with other people.

According to Brookover (1971) 'Role concerns the behaviour of persons and its relation to the behaviour of the others in a social system'.
According to Good's 'Dictionary of Education' (1973) defined 'role' as "the characteristic behaviour shown by an individual within a given group." He also defined it as, "the behavioural patterns of functions expected of, or carried out by an individual in a given social context."

Harris (1980) expressed that the bundle of typical expectations which actually attach to the member of a practice category i.e., to the occupant of a particular status might be brought to constitute a role.

Emphasising the importance of role Robert Boeock et al., (1980) reported that "In recent years sociologists have been less interested than they once were in culture and national character as background to conduct, partly because stress on the concept of role as the crucial link between the individual and the social structure has directed their attention to the immediate situation in which social interaction takes place.

Hoyle (1980) revealed, "the role concept is that in which we base our behaving towards the occupant of a particular position on the assumption that in general he will tend to conform to expectation and fulfil certain obligations".
West (1982), the Director of Secondary Science Curriculum Review expressed "Role is perhaps a little more complex to define it is being the character we play, or the purpose we have as participants in or observes of the attempt to use appropriate means to achieve our ends."

According to Shah (1990) "Role constitutes the shared expectations of the members of the organisations and groups of which he is a part, regarding the kind of activities and functions that he is to perform."

2.1.2 APTITUDE:

An aptitude is a psychological characteristic portrait which indicates the potential for development in a specific area with specific training. Aptitude must be distinguished from ability. Aptitude is a psychological potentiality of a specific nature or character which, with necessary and appropriate training, helps bringing about improvement in the performance of that particular type, example musical aptitude. Several individuals may be found to have different amounts of musical ability. Some may not have any musical ability at all. They not only cannot perform musically, i.e. sing or play an instrument but they may not also be able to appreciate music. On the other extreme there may be individuals for whom music is the very life breath. A person with an aptitude for music if provided
with the necessary training can develop his musical ability to a very great extent. When a person has no musical aptitude any amount of special training may not bring about any appreciable improvement in his performance. In common practice psychologists use terms such as scholastic aptitude, engineering aptitude, mechanical aptitude, legal aptitude and so on. These are not specific aptitudes but a combination of many.

Aptitude tests were first developed by Bingham. He defined "aptitude as the measure of the probability of the success of an individual with training in a certain type of situation like a job, school etc." Traxler calls aptitude "a condition or a quality or a set of qualities indicating the probable extent to which an individual may be able to acquire with suitable training some knowledge, understanding or skill of a specific type.

Aptitude is a potentiality which can be built upon or improved upon by suitable training. There is some confusion about the question whether an aptitude is innate or in born or an acquired capacity. A comparison of the three terms 'achievement', 'aptitude' and 'ability' may help understand the three better.
Achievement depends on the past, i.e. from the present performance one judges how much the individual has improved or benefited or profited from the past training or learning. Aptitude is concerned with the feature, what can be achieved if a certain type of training appropriate to the situation is given to the individual. Ability is concerned with the present. It indicates what the individual is capable of achieving in the present situation. In other words, achievement indicates what has been done, ability indicates what the individual is doing at the present, aptitude tells or predicts what an individual may become or may be able to do.

Aptitude tests are only broadly indicative of the probable success of the individual in a specific area. Therefore it is desirable that several aptitude tests are combined such that different aspects of aptitudes are assessed and all such tests which could be called more appropriately 'test batteries'.

A test battery is composed of more than one test. By using an aptitude test battery it would be possible to get information about different aptitudes of the individual such that a more comprehensive picture of the individual's aptitude is obtained. The usefulness of aptitude testing for the identification of potentially talented at the school
level itself was highlighted by the Robbins report (1963) and NCERT Annual Report (1966-67). According to the later "science aptitude begins to germinate by about 12+, 13+ and begins to be developed in full form by about 15+ and 18+". Studies by Berton and Perry (1975) revealed that "science aptitude measure of their respective sample".

2.1.3 ACADEMIC ACHIEVEMENT:

One of the education's puzzling thing has been academic underachievement. Scholastic achievement has always been done one of the most important goals of educational process. It is also a major goal which the youth are expected to pursue in all cultures. It is cherished as a desirable value by all the sections of our society.

According to Comrey (1949) that the achievement in schools consists of moving towards instructional objectives. Describing it as an achievement against some standard of excellence.

The Dictionary of Education defines 'academic achievement' as "knowledge attained or skills developed in school subjects, usually designated or skills developed in the school subjects, usually designated by test scores or marks assigned by teachers or by both" (Good, 1959).
According to the Dictionary of Psychology (Chaplin 1961) "academic achievement is a specified level of attainment or proficiency in academic work as evaluated by teachers by standardised tests or by a combination of both". The above definitions suggest that academic achievement is more accurate when it is studied in the light of multivariate analysis.

Rao (1963) said "academic achievement is related to the question of principles and generalisations and the capacity to manipulate certain objects symbols and ideas efficiently and independently. Cattel (1959) pleaded strongly for a multivariate approach to the complex problem of academic achievement and vehemently condemned the bivariate analysis. He argued that "the bivariate method that relies on the manipulation of an independent variable and the assessment of its impact on a dependent measure artificially considers bits of human behaviour and ignores studying the total organism. In contrast the multivariate experimenter considers the whole person and the complexity of his or her behaviour.

Durbin (1968) termed academic achievement as an activity and mastery making an impact on the environment rather than fatalistically accepting it and competing against some standard of excellence.
Academic achievement is a product variable which gets toned up or bogged down by the positive or negative influence of a host of independent variables. Bhatnagar (1969) considered academic achievement as an aspect of total behaviour of the students. It is an outcome of the interaction of the student, as an individual with his environment, namely, school, college, teachers and peers.

In the opinion of Gupta (1973) academic achievement is influenced by a number of factors which can be mainly classified as (a) abilities (intelligence, scholastic aptitudes, etc.), (b) efforts (drive, achievement motivation, aspiration, etc.) and (c) Environment (social and economic conditions of houses).

Kohli (1977) while reviewing the correlates of academic achievement has stated that the achievement related factors taken singly, contribute very little to academic variations. According to her it is a dynamic interplay of all the determinants which causes academic performance.

Verma and Verma (1978) in their study felt that academic achievement at higher level is a better predictor than at lower levels of ability. He concluded that a different combination of factors tend to influence academic performance at different ability levels. Studies conducted
revealed that intelligence alone does not account for all of the variance in academic achievement, though this is perhaps still the single most effective predictor of school achievement.

Similarly studies conducted by innumerable investigations suggested that academic achievement is conglomeration of several socio-psychological factors. The following analysis of some of the studies will highlight the prediction of academic achievement with the help of certain socio-psychological factors.

2.2 PREDICTION OF ACADEMIC ACHIEVEMENT:

The prediction of academic achievement occupied a pivotal position in many recent studies in the field of educational research. It was observed that these studies focussed their attention to maximise the prediction of academic achievement with the combination of several psychological or sociological factors or both.

Williamson and Knecht (1962) offered an analysis of the literature and concluded that the nature of relationship between personality traits and achievement alone could not help accurate prediction of achievement. They were of the opinion that it could be possible only when
a fairly large number of personality factors in addition to ability scores of the students are available.

According to Rao (1965) the multiple correlation coefficient between achievement and the scores of intelligence, study habits and attitude towards school was 0.81 and accounted for 66 per cent of the prediction of scholastic achievement. Cattell (1968) in their publication suggested that the variance in achievement is equally divided among motivation and personality factors each of which accounted for 25 per cent of the variance. Their evidence supports the major hypothesis that personality, ability and motivational variables independently contribute, to the variance found in academic achievement.

Binder and others (1970) advocated that aptitude tests have been used as the primary prediction and reached an asymptote of around 0.50. Since much of the variance in academic achievement still remains unaccounted for, the search for predictors of intellective as well as non-intellective goes on.

Worthington and Grant (1971) emphasized that individual differences among college students in terms of measured abilities, educational backgrounds, socio-economic status and family characteristics, grades and aspirations,
attitude toward learning planned vocational goals and so on exist and influence differently the student grades.

Dhaliwal (1971) in his two phases of investigation revealed that while superior study habits, reservedness, high verbal ability, home, emotional and school adjustment, poor social adjustment and scanty feeling correspond with over achievement and inferior study habits. Outgoing tendencies low verbal ability, emotional instability, assertiveness happy go like temperament poor adjustment in home, emotional instability in school areas, poor social adjustments and feelings were associated with under achievement.

Chadwick (1977) and others found that the five independent variables (both intellectual and non-intellectual) were capable of explaining significantly more of the variance (38%) of the male academic performance than female (24%) achievement.

Lehrer and Hieronymas (1977) concluded that standardised tests of general cognitive and intellectual ability account for approximately one third to one half of the variability in performance on measures of academic achievement. They outlined that investigations have turned to the non-intellectual aspects of personality in order to account for additional variance.
Roper (1979) with predictor variables like high school G.P.A. number of younger children in the family importance of choice of future vocational goal, time devoted to study, encouragement from the family and relations, high school non-academic achievement personal difficulties with professors and family income accounted for approximately 69 per cent of variance in academic achievement.

Stephenson (1979) from his study revealed that cognitive reasoning ability and G.P.A. can be used to predict academic success. Smith (1981) used 17 significant variables out of 58 predictor variables which accounted for only 6.25 per cent of variance in academic achievement. He concluded that although non-intellective variables were used, intellective variables showed strength in prediction. Hurdel (1981) advocated that demographic variables would not be useful as effective predictors of academic in a general education which could produce a variance of 7 per cent only.

2.3 IMPORTANT VARIABLES WHICH CONTRIBUTE TO ACADEMIC ACHIEVEMENT:

2.3.1 SEX:

Many investigators considered 'sex' as one of the variables, which would contribute to academic achievement. Some researchers proved that girl students are more
successful in academic achievement than their counterparts, and some others proved just the reverse. A few studies showed that there was no any significant difference between both the sex groups as for their achievement was concerned. Hence the relationship between sex and academic achievement appears to be a controversial aspect. The following review includes all such studies.

Terman and Tyler (1954) found out that girls typically excel in English spelling, writing, and art, boys in mathematical reasoning, history, geography, and science.

Tyler (1956) in a review of research in the United States reported that in all studies girls achieved consistently higher grades than did boys, when batteries of achievement tests were used to assess achievement rather than using school grades for this purpose, girls continued to exceed boys in performance in languages while boys tended to perform better in mathematics and science. However, the differences between the sexes were small and frequently inconsistent within the same subject area, for example boys performed better on problem solving in mathematics while girls frequently performed better on computation.

According to Northby (1958) that girls do better in schools than boys do, at least so far as teachers rated achievement tests were concerned.
Yamamoto (1960) Mac Gregor and Smith (1965), Solomon (1968), Walker (1969), Cacha (1971), Burgess (1971), were concluded that girls are better in creative thinking than boys, where children from first through sixth grade were involved.

Seashore (1962) brought together a large number of validity coefficients for scholastic aptitude tests and found that groups of girls had typically produced significantly higher coefficients than had groups of boys.

Griffin and Flayharty (1964) found that feminity is positively correlated with grades. Tyler (1965) observed that in special ability tests typically show feminine superiority on verbal fluency, manual dexterity, rote memory and classical aptitude.

Maccoby (1967) also found that girls performed better than boys at elementary and secondary school levels. Girls tend to outperform boys in reading and verbal skills (Stand and Lindquist, 1942; Gates, 1961; Maccoby, 1966; Asher and Gottman, 1973; National Assessment of Educational Progress, 1972, 1976; Flanagan et al., 1961; Rosenberg and Sutton, 1964). Hout and Lutz, 1966-67, Droege 1967 and Very 1967 found that girls have greater achievement in reading and verbal skills persist into high school and beyond.
Eysenck (1969) and others found that sex differences are apparent in English paper but neither in verbal reasoning nor in mathematics the superiority of the girls in English is equalled by their superiority in reading.

Kolesnik (1970) has reported that girls regularly surpass boys in scholastic achievement at both elementary and high school levels.

Sevenson (1971) enunciated that in controlling of verbal intelligence girls scored better on verbal achievement tests than do boys after which they are awarded higher marks than boys for similar achievement test scores.

Klausmeier and Ripple (1971) in their report on research that compared the academic achievement of boys and girls, observed that girls' achievement level was higher than boys.

Keves (1973) found that girls out performed boys in biology at certain ages. Girls generally outperformed boys in literature.

Maccoby and Jacklin (1974) concluded that sex differences were well established with three cognitive constructs, mathematical performance, verbal ability and
spatial visualizing ability. These differences appeared fairly consistently (in over 50 per cent of the studies) by early adolescence.

Bedi (1974) found a significant difference between the performance of males and females in favour of females in measures of non-verbal creativity.

There have been many studies of sex related differences in mathematics (Aiken 1972; Stafford, 1972; Fennema, 1974; Callahan and Glennon, 1975; Fennema and Sherman, 1977).

Sharma (1975) conducted a study on achievement of pupils in general science and mathematics. He concluded that there was a significant difference between the performance of boys and girls on the test in general science and mathematics. The girls were superior to the boys in both the subjects.

Regarding girls’ superiority over boys in mother tongue and science, achievement was found by Kaur (1975) and Pillai (1983) respectively.

Walker (1976) has reported from the International Association for the Evaluation of Educational Achievement (IEA) a study on sex differences in subjects other than
mathematics and science. On reading comprehension tests, boys showed lower performance than girls in a majority of countries, but the differences between the sexes were in general light. In the cognitive literature tests boys did less well and also showed less interest in literature. Again in the study of English as a foreign language boys scored below the girls on both reading and listening tests. In the civic education achievement tests of boys recorded higher scores than girls.

Jayaswal (1977) found that female teacher trainees were significantly superior to male trainees on fluency and flexibility scores.

Cornelius and Cockburn (1978) found that there is little difference between the overall performance of boys and girls, but in individual subjects large differences do exist.

Tauliatos (1979) found that achievement of girls was higher than that of boys. Blattastein (1981) indicated that sex differences for all achievement measures existed initially and finally.

Moss (1982) reported on sex difference in achievement in mathematics in Australia across an interval of 14 years from 1964 to 1978 during which period the
women's liberation movement started to have a significant influence on employment opportunities and on the participation by girls in education at the upper secondary and tertiary levels. The findings from this study which involved the use of same tests on the two occasions and across several autonomous state educational systems within Australia, indicated at the lower secondary school level, a slightly higher level of performance by girls on subjects involving elementary arithmetic and algebra and a higher level of performance by boys on subtests involving advanced arithmetic and geometry. Average achievement of girls did not equal that of boys, greater gains were made by girls over the period from 1964 to 1978.

Ghosh (1985) conducted a science achievement test on 450 boys and girls and concluded that boys did not show superiority in achievement test over girls.

Dass (1985) found that boys studying in urban schools do not show greater achievement in biology than the girls studying in the urban schools.

Dixit et al., (1985) conducted a study on 800 students studying in classes IX and XI belong to both grades equally. They concluded that at all other intellectual levels, the academic achievement of the girls was superior to that of the boys.
Sundararajan (1989) found that boys studying in urban schools do not show greater achievement in biology than the girls studying in urban schools.

Patel (1992) administered achievement tests for students of IV class. He found that there are sex differences in the performance of the students on the test of the four fundamental operations, the girls showing by and large, a better performance than boys.

Busamma (1995) found that girls were found to obtain equally well on mathematic test.

Khemchandani (1996) conducted a comparative study on 188 students on their academic achievement of boys and girls at S.S.C. Examination of Maharashtra Board. She concluded that less number of girls fail at S.S.C. Examination than boys, while there is no difference in the performance of boys and girls in ranking i.e. no difference exists between number of first divisioners, second divisioners and pass class between boys and girls.

Koteswara Rao (1997) found that girls performed better than that of boys on vocabulary comprehension and reading achievement. He further concluded that sex, class and locality had significant influence on comprehension of
the students. He found that students in residential schools performed better than those in rural and urban areas.

Aruna Suri et al (1998) conducted a study on IX and X class students and concluded that girls have higher degree of achievement motivation when compared to their counterparts.

Carpraro, Mary Margaret et al (2000) conducted a study on grade 8, Junior High Schools on a sample of 180 students. They concluded that females were no less likely to score well on mathematics standardise tests than their male counterparts.

Koteswara et al (2001) conducted a study on 1296 school students to find out the influence of sex, class, locality and region on vocabulary of high school students. He found out that girls are better than boys in vocabulary.

Pravinchandran (2001) conducted a study on 648 high school and higher secondary students of X, XI, XII to find out the influence of sex, class and locality on grammar of students. He concluded that girls are better than boys in grammar.

On the other hand some studies showed male superiority in achievement.
Sexena (1963) found that boys studying in rural schools show greater achievement in biology than the girls studying in rural schools.

Kevees (1973) reported from IEA studies of mathematics and science that in general the pattern of results was one of the superior performance by male students. In another IEA surveys of six other school subjects in 21 countries including some underdeveloped ones between 1966 and 1973, boys scored higher at all levels in total science achievement. The differences increased from 10 years through 14 years to the final secondary school year. Boys performed markedly better in physical science as compared to biology in UK, Sweden and Newzealand. Girls outperformed boys in biology at certain ages. Girls generally outperformed boys in literature.

Maccoby and Jacklin (1974) support the earlier conclusion of male superiority in mathematics. Fennema (1977) has challenged the view that sex differences in mathematics performance exist one differential course taking on the part of the boys and girls is accounted for.

The International Association for the Evaluation of Educational achievement examined mathematics achievement in twelve high literacy countries during the 1960s (Finn et al., 1979). Boys at all levels performed better than girls,
with the expectation of certain aspects like computational problems in U.S, Sweden and Israel. Sex differences were highest among 13 years old in Belgium.

Benbow and Stanely (1980) argue that course taking alone can not account for sex differences, because they find more boys than girls among mathematically precocious prior to ages when mathematics courses become elective. Although Benbow and Stanely argue that their data support a genetic explanation, they fail to consider experimental factors other than course taking that might explain sex differences in mathematics' performance.

Leibovich (1980) compared the scholastic achievement of 30 male and 30 female students from 5th, 6th and 7th grades in Buenos Aires, Argentina. A battery of 35 tests covered perception, general reasoning, space, verbal ability, numerical ability, memory and attention. A two way ANOVA was performed for each test to determine the influence of sex and school level on scores, school level did not significantly influence scores on perceptual test but it did influence the other. The achievement of males was generally higher than that of the females.

Parson (1981) for example, finds that parental expectations exert powerful influence of boys versus girls.
Riley (1981) found that male students performed significantly better than female students on final accounting examinations.

The study of Nongunch and Elements (1982) revealed that males significantly out performed females on 25 of 72 occasions, but on no occasion did females significantly outperform males in spatial tasks.

Singh (1984) found that sex difference were statistically effective in all the four areas of home environment.

Misra (1986) concluded that the academic performance of boys was superior to the performance of girls.

Mishra (1997) found that personality factors, and self efficiency are significantly related to achievement only in case of boys.

Jyothi Rathore (2000) conducted a study on 500 boys and 500 girls and found that "the performance of the boys was found better than that of the girls studying in N.F.E. centres and formal primary schools.

On the other hand some studies showed no sex differences in their academic achievement.
Satyanandam (1969) revealed that sex had no bearing upon the achievement level.

Entwistle and Welsh (1969) observed that correlation between attainments and SES rating showed no sex differences, but there was the expected positive relationship between high social class and school attainment.

Fennema (1974) stated that no significant difference was found between boys and girls in mathematical achievement before or during early elementary years.

However Sharma (1977) observed no significant differences in the achievement of boys and girls in arithmetic but in reading tests girls achieved significantly higher scores.

Reddy (1978) concluded that there was no significant difference in the achievement of boys and girls.

Girls in UK generally performed as well as boys in elementary school up to 11 years and their performance dramatically drops at the secondary school level (Bristol Women’s Studies Group, 1979; Sharpe, 1976).

Similarly, Sharma and Bhargava (1980) found that difference between the mean academic achievement of males and females was insignificant.
Jain (1981) observed that there was no sex difference in the achievement in the subjects under study.

Shashidhar (1981) in his study on high school SC students found that there was no significant difference in the achievement of boys and girls.

Barua (1981) conducted a study on high school students and found that boys and girls were not different with respect to intelligence and scholastic achievement.

Lynn and Steven (1983) also found no gender difference in science and mathematics achievement.

Shukla (1984) found that there were no significant sex differences in the academic achievement of primary school children.

Subramanyam (1985) also found that there is no sex difference in respect of scholastic attainment, are not significant. Boys and girls performed equally in the examinations. However, inspite of poorer academic adjustment the girls are able to exhibit their patience, higher intelligence and better concentration on the subject matter.

Grewal and Bansbir (1987) observed that sex had no significant influence on the development of verbal reasoning
Chakrabarti (1988) conducted a study in 12 schools on a sample of 500 students and he found out that there was no significant difference in the achievement of boys and girls.

No sex differences in achievement was found in Singh and Saxena (1995), Jain and Arora (1995).

Mishra (1997) found that the personality factors (except, self-sufficiency) are not significantly related with the academic achievement of both boys and girls. However the personality factor, self-sufficiency is significantly related to achievement only in case of boys.

2.3.2 CASTE:

One of the most obvious facts about society and social life is the existence of divisions based on, or related to, various kinds of inequalities. Considerable arguments are going on among sociologists on whether or not there is any relationship between educational performance and social inequalities. However, studies have been done to establish relationship between educational achievements and number of variables such as socio-economic background, family structure and stability, racial ethnic group differences, social variations etc. Some of the studies which related caste with achievement are discussed below:
Sharma (1967) concluded that among the different caste groups, those from higher castes were better in achievement.

Lalithamma (1973) in her study quoted that pupils belonging to scheduled caste and scheduled tribes do not achieve adequately. Sarala (1975) found that pupils belonging to forward communities are slightly better than pupils belonging to backward communities with regard to their academic achievement.

Sharma (1975) noticed that scheduled caste and backward class pupils achieve much lower than other caste groups.

Usha Rani (1978) found that socially disadvantaged pupils (Harijans) and socially non-disadvantaged pupils differed significantly in their academic achievement.

Yadav (1979) found no significant difference between scheduled caste and non-scheduled caste groups in intelligence or other motivational tendencies.

Singh (1980) compared the academic achievement of tribal and non-tribal students and tribal students are low in achievement than non-tribal students.
Khurshid Alan (1985) reported a distinct superiority of non schedule caste children over the schedule caste children in achievement motivation, an important social motive contributing to scholastic achievement.

Verma (1985) found that the mean achievement of scheduled caste students was found to be significantly lower than that of tribal students and of students belonging to other castes.

Jagannadhan (1986) also found that children from backward communities scored significantly below that of the forward communities.

Kamala S. Pillai (1986) found that there is a significant difference between scheduled caste pupils and other caste groups in attitude towards education. The low or under achievement of scheduled caste students in almost all school subjects and the lack of progress of these students in general education may be due to their unfavourable attitudes towards education. Neither sex nor the rural urban localities of the secondary school pupil have any interactive effect on their attitude towards education.

Sujatha et al (1986) conducted a study on IX class students belong to SC/ST students and non SC/ST students of boys and girls equally drawn from 27 high schools, out of
Rani (1980) found that academic achievement of the scheduled caste students was significantly lower than that of non-scheduled caste students. Arun’s (1981) study also reported similar results. However, achievement of the scheduled tribe students was found to be higher than that of the scheduled caste students.

Shashidar (1981) studied that the relationship between certain school variables and the achievement of scheduled caste and scheduled tribe secondary school students of Karnataka. The variables openness of the school, teacher’s attitude towards scheduled castes and intelligence were found to be significantly related to the achievement of scheduled caste students.

Blattestrin (1981) also indicated that ethnic differences were consistently found in achievement.

Sukumaran Nair (1981), Parvathy (1984), Sulatha (1984), and Adiyodi (1984) observed that the portion of under-achievers in different school subjects is greater among backward class and/or scheduled caste students.

Verma (1985) found that the achievement in scheduled caste students was significantly lower than that of tribal students and of students belonging to other castes.
which 14 were govt. schools and 13 were private. She concluded that SC/ST students were low in their academic achievement and achievement motivation. They had relatively poor school adjustments compared to non SC/ST students.

Murthy et al., (1987) carried out a study of differences between SC/ST students and non-SC/ST students in relation to their intelligence, socio-economic status and birth order. The scheduled tribes children were found to be more intelligent (on non-verbal tests) as compared to their scheduled caste counterparts. Socio-economic status and sex were also found to be related to the level of intelligence. The impact of socio-economic status and sex were also found to be related to the level of intelligence.

Gupta (1988) conducted a comparative study of educational achievement of SC and non-SC students of X class. He found out that female pass percentage rate was higher than the overall female pass percentage. In general non-SC students had performed better than the SC students.

Goyal and Chopra (1989) conducted a study to find out whether there is a relationship between psychological variables and the achievement of SC, ST students and non-SC, ST students. Though there was no difference in their total self-concept, the non SC, ST students teachers had higher
self concept, better social adjustment and higher achievement.

Mishra (1989) aimed at studying the impact of bilingual experience on the cognitive skill, metalinguistic competence, coding, process and educational achievement of children in a tribal setting on 360 children. He concluded that the additive bilingual experience was found to be associated with subtle metalinguistic, academic and intellectual benefits for the bilingual children.

Sharma, Pushpalata (1989) the researcher found the tribal pupils to be significantly inferior to the non-tribals on a comprehensive scientific aptitude test but significantly superior to them on accuracy of observations at both levels of educational status.

Gaur, Yashoda (1989) conducted a study on 544 SC and BC girls studying in graduate and postgraduate courses. She found that SC and BC girl students were lower in intelligence, less aggressive and less dominant than their non-SC counterparts and non-backward class students.

Gautam Rajni (1990) compared SC students with non-SC students in terms of creativity, values, academic achievement and attitudes, towards education on a sample of 540. She concluded that the two groups were found to be
significantly different from each other in personal values, teaching attitudes, achievement and creativity.

Gharmode (1990) and Rawat (1991) conducted a study on tribal and non-tribal students comparing the mental abilities, occupational aspirations and interest patterns. The non-tribal students were found to be significantly higher than tribal students in logical ability and mechanical interests. The tribal students were higher in scientific and outdoor interests. Among the high occupational aspirants, the tribals were high in numerical ability, scientific and outdoor interests, and the non-tribals were high on mechanical and clerical interests, among the low occupational aspirants, the tribals were higher in verbal ability and scientific and outdoor interests than the non-tribals.

Kabra (1991) studied the educational backwardness of SC, non-SC higher secondary girls. He found out that a positive relationship between family education, socio-economic status and personality correlates. SC girls showed lower participation in co-curricular activities, lower social adjustment and lower scholastic achievement. Occupational aspirations were significantly related with fathers’ education and scholastic achievement, for both SC and ST girls.
Aggarwal, Archana (1992) conducted a study on 225 scheduled caste students and non-scheduled caste students studying in the secondary classes. He found the scheduled caste students to be inferior to non-scheduled castes in self concept, occupational aspirations and academic achievement, but the SC students did not differ from the non-SC students in terms of their intelligence on socio-economic status, self concept and academic achievement. SC girl students were found to be higher in academic achievement than their male counterparts.

Vyas, Uma (1992) conducted a study on 400 SC students and non-SC students on their academic achievement, self concept and laws of control on XI and XII class students. They found out that the two groups differ significantly in terms of academic achievement, but not in self-concept and laws of control. The high self-concept group SC and non-SC students differed in their academic achievement.

Santhamma Raji et al., (1994) conducted a study on 400 tribal and non-tribal students in socio-personal factors in relation to their achievement in Biology. They found out that caste acts as a determiner of the achievement in biology and non-tribals have significant advantage over the tribal pupils with respect to their achievement in biology.
They also found that pupils with high socio-personal adjustment have the highest achievement compared to pupils with average and below average socio-personal adjustment. They concluded that caste has strong influence on the achievement of the pupils. Non-tribals possessed significant or slight advantage over the tribal pupils in the various categories of social and personality variables.

Umachitra et al., (1995) found that SC students differed in their socio-economic status. Their academic achievement was positively related to intelligence, occupational aspirations and socio-economic status. The relationship between personality and academic achievement was higher in SC students than their counterparts.

Nasar (1996) conducted a study on SC, ST and BC students appeared at SSC public examinations for the last 8 years in Andhra Pradesh, to find out the relative differences in the achievement levels of SC, ST and BC students. He concluded that the achievement of SC students were found to be comparatively lower than the achievement levels of the other two groups, and also on the overall achievement level.

2.3.3 LOCALITY:

In educational research urban, rural difference is one of the neglected aspect, in academic achievement. It
is a known fact that urban rural difference exists in their environmental condition. There is much difference between urban and rural students in their style of living, parental influence, value orientation, peer group relation, exposure to entertainment, educational facilities and occupational and educational status for parents. All these factors have influence upon academic activities and involvement of the students. The following review includes all such studies.

Sinha (1966) has reported that low achievers come from rural areas, high achievers come from urban areas.

Kulkarni and et al (1970) found that the urban students got higher mean values than the rural students.

Pandey (1974) found that academic achievement was significantly related to rural and urban background.

Chaterjee (1977) found that V class level city pupils tend to do better than rurals.

Sharma and Bhargava (1980) also found that rural and urban children differed significantly in academic achievement.

Jain (1981) found that the achievement of the pupils from urban areas was better than that of the pupils from rural areas.
Shanmuga Sundaram (1983) found that urban students were more intelligent, had better study habits and higher achievement motivation and performed better academically than semi-urban and rural students.

Doraiswamy (1985) found that the performance of students in urban areas was better than that of students of rural areas. He also concluded that the performance of students in the initial classes was not significantly dependent upon the nature of management of the school. He further concluded that the income range of the parents did not have any adverse effect on the performance of students.

Misra (1986) concluded that the academic achievement of the rural students was lower than the achievement of the urban students.

Premalatha Sharma (1986) in a study on achievement of rural girls found that poor study habits were highly associated with under-achievement.

Chakrabarti (1988) conducted a study in 12 schools on a sample of 500 students. He found out that students from private schools scored better than zilla parishad and corporation schools.
Sundararajan (1989) observed in his study that the girls studying in urban schools show greater achievement in biology than the girls studying in rural schools. He also found that the boys studying in urban schools do not show greater achievement in biology than the girls studying in the urban schools. He further stated that boys studying in rural schools show greater achievement in biology than the girls studying in rural schools.

Sundararajan and Mohanraj (1991) found that there is a significant difference between the urban and rural students in respect of their attitude towards science and the urban students have a more favourable attitude towards science than the rural students. They also found that there is no significant difference than urban boys and girls in respect of their attitude towards science. He further stated that the urban students are better than the rural students in respect of their achievement in mathematics.

Kamala et al., (1994) found that rural, urban students differ significantly in their mean achievement in biology. Urban group of students scored high in achievement in biology.

Busamma (1995) shows that rural children fared relatively poor on a standardised test in arithmetic, and the institutional factors were prominent in that students
from private institutions were better scorers; also girls were found to obtain equally well.

Rangappa et al (1995) conducted a study on 1000 students studying in VII standard selecting from urban and rural schools and conducted an achievement test in mathematics. He found that students coming from urban schools performed better than their counterparts in rural schools.

Koteswara Rao (1997) found that urban pupils performed better than that of rural pupils. Residential pupils performed better than rural and urban pupils in reading achievement.

Pravinchandra (2001) conducted a study on 648 high school in higher secondary students of X, XI and XII to find out the influence of the locality on grammar of the students. He concluded that the place influences on grammar of students. Students in district schools performed better than that of students in village and taluk. Among the three groups, students in rural were the least in grammar.

On the other hand some studies showed that rural students achieved better than urban students in their academic achievement.
Saxena (1963) concluded that boys studying in rural schools show greater achievement in biology than the girls studying in rural schools. This is in agreement with the findings of Williams (1979).

Ojha (1979) found that the achievement of rural boys was found to be better than that of urban boys of class XI.

Ghosh (1985) conducted a science achievement test on 450 X class boys and girls belong to urban and rural areas. He concluded that urban students did not show better performance in the achievement test than rural students.

The study conducted by Grewal and Singh (1987) revealed that the rural students were academically as good as urban students.

Sundararajan (1989) found that boys studying in urban schools do not show greater achievement in biology than the boys studying in rural schools.

Koteswara Rao (1997) concluded that sex and locality had significant influence on comprehension of the students.

Jyothi Rathore (2000) conducted a study on 1000 students of urban and rural areas. She concluded that there
was a significant difference in the scholastic achievement of children studying at the rural and urban areas. Children coming from rural areas achieved better in environmental studies-II (science) when compared with urban students.

On the other hand some studies showed no locality influence on academic achievement.

According to Beedwat (1976) the intensity of incidence of underachievement was more or less uniform in urban and rural areas.

Verma (1977) found that the academic achievements of the urban-rural schools were at par, but there was significant difference in the intellectual standards of the rural and the urban pupils.

Maestas (1981) findings suggested that region did not influence students' achievement, nor did the size of the community or size of the school.

Shukla (1984) found that there were no significant rural and urban differences in the academic achievement of primary school children.

Grewal and Bansbir (1987) observed that the residential background had no significant influence on the verbal reasoning of boys and girls.
In view of these findings, localities of the children were intended to be examined and its magnitude of relationship with achievement was resolved to be examined.

2.3.4 BIRTH ORDER:

Several studies have drawn their attention closer to the variable 'Birth Order'. These studies have stressed that the importance of the ordinal position of the child in the family will influence their academic achievement. The following are some of the studies relating to birth order and academic achievement.

Srivastava (1967) found that underachievement was related to SES, father’s profession, number of siblings and birth order.

Bradly (1968) hypothesised that first born are more academically interested and less socially interested than later borns.

Smith and Rosenberg (1974) found that first borns have generally been shown to achieve better academically than later borns, they more frequently attain eminence.

Oberlander and others (1970) concluded that birth order versus family size interaction is more meaningfully related to measures of scholastic aptitude and achievement than either birth order of family size alone.
According to Farley and Others (1974) a major social and psychological variable which has been shown to be powerfully involved in academic achievement, attainment of eminence and a wide range of personality and motivational factors, is birth order. But he found that only among academically high attainers does birth order seem to relate to attainment.

Gallagher (1977) stressed that first borns have greater educational success and fewer academic problems than do other birth order groups. However few studies found no relationship.

Gupta (1982) found that birth order and fathers profession influenced the reading ability.

Narang (1987) found that the number of siblings seemed to affect the performance. Most high achievers had only one sibling. In the village areas most of the respondents among all categories of achievers had three siblings.

According to Indira (1991) it is found that there is a relationship between birth order and students achievement.
On the other hand some studies showed contrary of the above.

Schooncer (1959) made an attempt to access the effects of birth order, sex siblings, age, interval of siblings and so on, on academic performance. He found that birth order was not related to academic achievement.

Chopra (1966) found that ordinal position among siblings did not have any consistent relationship with intelligence tests scores or academic achievement of students.

Reddy (1978) found that birth order and the size of the family were not related to academic adjustment nor to scholastic performance.

Gaur (1982) showed that birth order did not affect the speed of reading comprehension and vocabulary of students.

Among these studies majority of them have found that first born children exhibited greater achievement than later borns. The present investigation took note of the above fact and attempted to find out significant differences in the academic achievement of the children who were first born and later born.
2.3.5 SIZE OF THE FAMILY:

According to Coleman et al., (1966) and Mostellar and Moyniha (1972) concluded that home and family background variables made a much more significant contribution to student achievement than any school or teacher variables.

Brenstein (1968), Fraser (1969), De and Singh (1970), Oberlander and others (1970), Abraham (1974), Katherene (1975), Harris (1979) have all found that family size and achievement are inversely related. This is larger the family size, lesser was the performance and vice versa.


Oberlander and others (1970) concluded that birth order vs. family size interaction is more meaningfully
related to measures of scholastic aptitude and achievement than either birth order or the family size alone.

Chatterji, Kuherjee and Banerjee (1971) found that the family size and the number of siblings were inversely related to the scholastic achievement specially in low intellectual level.

Salunke (1979) found that the academic achievement of the students was related to their home environment.

Siddiqui (1979) found that the family background factors had positive relationship with the academic achievement of the students when the intelligence factor was held constant.

Subrahmanyam et al., (1982) found that with respect to home conditions type of house, home reading facilities, educational level of parents, occupation of the parents, income of the family, and social participation of the members of the family influenced the reading attainment of the children positively.

Shukla (1984) found out that the size of the family had significantly better academic achievement than those of average and small family categories. He also found that there was a tendency of better achievement among the children who belong to small family size.
Narang (1987) found that the number of siblings seemed to effect the performance. Most high achievers had only one sibling. In the village areas most of the respondents among all categories of achievers had three siblings.

Indira (1991) found relationship between family size, birth order and students achievement.

On the otherhand very few studies has shown negative relationship between size of the family and academic achievement.

Reddy (1978) found that birth order and the size of the family were not related to academic adjustment nor to scholastic performance.

2.3.6 TYPE OF MANAGEMENT OF THE SCHOOL:

Dhami (1974) reported that the relationship between scholastic achievement and intelligence was higher in the case of students of private schools than for those of government schools.

Doraswamy (1985) found that the performance of students in the initial class was not significantly dependent upon the nature of management of the school.
Sabapathy (1986) found that the emotional maturity, socio-economic status and social maturity turned out to be significant predictors of total academic achievement and students from private schools scored higher than students from government schools.

Sujatha et al (1986) found that there was a significant association between academic achievement and type of school in the case of SC/ST students, but not in the case of non SC/ST students.

Chakrabarti (1982) conducted a study in 12 schools on a sample of 500 students. He found out that students from private schools scored better than Zilla Parishad and Corporation schools.

Sundararajan et al., (1991) found that there is no significant difference between the government and private school students in respect of their attitude towards the study of mathematics.

Patel (1992) administered achievement tests for 3,374 students of IV class belong to private and corporation school. Pupils of private schools were better scores in both the subjects than those in corporation schools. The girls in private schools scored more than the boys in the private schools. In the case of the corporation schools the
achievement of boys and girls did not differ in arithmetic in both cities.

Rathaiah et al (1994) found that the students achievement in private colleges was high when compared to government colleges.

Busamma (1995) shows that rural children fared relatively poor on a standardised test in arithmetic, and the institutional factors were prominent in the students from private institutions who were better scorers.

Koteswara Rao (1997) concluded that sex and locality had significant influence on comprehension of the students. He found out that students in residential schools performed better than those in rural and urban pupils in reading achievement.

2.3.7 PARENTS EDUCATION AND OCCUPATION:

There has been a controversy among researchers on the precise impact of social class of the student - on academic achievement. It has been observed that at every stage of education, the middle class students are generally over represented among the high achievers.

Malleson (1959) found that social class grouping had very little influence on failure rate.
Sehonell (1963) found that working class students performed relatively poorer than those whose parents were in professional, semi-professional and administrative occupations.

Astin (1964) found a highly significant relationship between the tendency to drop out college and low level of mothers’ and fathers’ education and fathers’ occupation. Opinions have also differed with regard to first generation students. Though most of the workers felt that prior connection of the family with university study is an important consideration with Robbins Committee on higher education (1963) found on an evidence that the ‘first generation’ university students leave without success than other students.

Satyanandam (1969) revealed that children of graduate parents performed far better than the children of matriculate parents.

Sinha (1970) found only small differences between high achievers and low achievers on the variables of parental occupation and no differences on parental income and educational level.

Wig and Napal (1970) observed significant differences on mothers’ and fathers’ education and fathers’
occupation but not on fathers’ income. In both these Indian studies the low achievers were more represented in the occupational category of ‘agricultural’ or ‘business’.

Chatterji et al (1971) found that parents’ educational level was directly related the achievement of their children.

Saini (1977) found that in the case of science students academic achievement was significantly related to educational standard of parents, but not to economic status.

Ojha (1979) found that parental education is also related with the educational achievement of both rural and urban boys of class XI.

Sarma (1984) conducted a study on which indicated parental education was highly associated with the academic achievement of their sons and daughters.

Bandyopadhyay (1984) conducted a study on 420 adolescent students of boys and girls to assess adolescent students attitude towards science, and to find out the environmental and academic factors that influence their attitude towards science. He found that parents education and SES led to favourable attitude towards science.
On the other hand some studies show no relationship with father's education. Parikh (1957) had conducted a study on achievement test in general science for standard VIII, construction and standardisation in Baroda city for age group sixteen. He found that students from higher occupational group perform better than others.

Jamuar (1961b) had found that those students whose fathers had more prestigious occupation achieved better than their counterparts whose fathers held low status occupation.

Srivastava (1967) found that under achievement was related to SES, father's profession, number of siblings and birth order.

Gupta (1968) found that parents' education and pupils' achievement are not significantly related to each other.

According to Irving D. Harris (1976) differences in social class proved to be one of the few general factors distinguishing the entire learner group from the entire non-learner group. Taking occupation and education of the father as the prime indicator of the social class. He found that among the hundred learners a much greater proportion of boys whose fathers has professional occupation (teachers,
ministers, physicians, lawyers, scientists, etc.) or who had little college education. In contrast, among the hundred non-learners there was a great frequency of boys whose fathers had occupation which could be categorised as semi-skilled or who had not completed high school.

Subrahmanyan et al (1982) found that with respect to home conditions, type of house, home reading facilities, educational level of parents, occupation of parents, income of the family, and social participation of the members of the family influenced the reading attainment of the children positively.

Gupta (1982) found that birth order and fathers' profession influenced the reading ability.

Rajput (1984) found that fathers' occupation was not at all meaningfully related to academic achievement.

Deka (1985) studied the causative factors behind the academic success or failure of the students by mainly comparing the characteristics of the high and low achievers, and found that school success and failure were significantly and positively related to family income, involvement in domestic activities, and home study, while they were unrelated to parental education and occupation.
In Sontakey (1986) the high achievers had a high socio-economic status and they hailed from highly educated families.

In contrary to the above studies Singh (1989) found that there was no significant difference among children of working and non-working women, regarding scholastic achievement.

2.3.8 SOCIO-ECONOMIC STATUS:

Among the several socio-economic status (SES) variables of a child was examined in wider prospective. The variable still continues to be examined by several investigators and relates it to the academic achievement of pupils. The following are some of the studies relating to socio-economic status and academic achievement.

In most of the studies parent's education, occupation and income were regarded as the components of socio-economic status. But in recent times a growing interest is shown to include more number of family aspects like size of the family, caste, and other such aspects. The present study was planned in such a way to include several of these aspects in SES both for rural and urban children.

The reviewed studies revealed that socio-economic status of the children was studied on one hand by including
the global aspects of the family's physical and social aspects and on the other side certain other studies attempted these aspects to be examined individually or in combination with only few variables. The following discussion of these studies showed that SES has got varying degrees of over achievement. Some of them have attributed SES as a strongest predictor of academic achievement, yet some other studies showed a lesser degree of relationship between them.

Coaster (1959) reported positive relationship between socio-economic status and academic achievement. This shows that socio-economic factors play a major role in the development of students ability and in fostering student achievement.

The difference in children to a great extent depends upon their socio-economic background and culture. Studies by Dave (1963), Masin (1975), Chatterji, Mukherji and Benergi (1972), Masin (1976), Gupta (1968), Richhavia (1952), Washburn (1959) have reported on the relationship between socio-economic background and child's scholastic achievement.

Curry (1962) believes that social and economic factors have an effect upon language achievement in the
middle intellectual ability groups. Both the upper and the middle SES groups achieved better than lower SES groups.

Mathur (1965) had tried to study the effect of socio-economic status on achievement and behaviour of higher secondary school students. He found that students who are superior in conduct and who are from high socio-economic status have superior intelligence.

Chopra (1966) also found that socio-economic background was positively related to success in high school achievement.

Srivastava (1967) concluded that under achievement was related to SES, fathers’ profession, number of siblings and birth order.

Hall (1969) found that students belonging to the lower SES experienced low academic success, while those with middle SES fared better.

Entwistle (1972) found that in the high intellectual ability group even when measures of intelligence were held constant the richer the SES background and less was the probability of failure.

According to Abraham (1974) achievement level in English was associated with SES.
Khanna (1980) found that the academic achievement of rural and urban students was closely related with their guardian's income.

Subrahmanyam et al (1982) found that with respect to home conditions, type of house, home reading facilities, educational level of parents, occupation of parents, income of the family, and social participation of the members of the family, influenced the reading attainment of the children positively.

Dwivedi (1983) found that SES significantly affected achievement in biology of higher secondary pre-medical students when taught through a linear programme.

In the study by Sarah (1983) it was found that the co-efficient of correlation between and SES was positive and significant when the effect of pupils' attitude towards science and towards science education were partialled out. Adolescents of high SES possessed high scholastic achievement. According to Sharma (1984) Sukhla (1984) showed a positive relationship between SES and academic achievement of the students.

Bandyopathayay (1984) conducted a study on 420 adolescent students both girls and boys to assess adolescent students' attitude towards science, and to findout the environmental and academic factors that influence their attitude towards science. He found out that parents' education and SES led to favourable attitude towards science.

Deka (1985) studied the consecutive factors behind the academic success or failure of the students by mainly comparing the characteristics of the high and low achievers, and found that school success and failure were significantly and positively related to family income, involvement in domestic activities and home study which they were unrelated to parental education and occupation.

Sambapathy (1986) found that the emotional maturity, socio-economic status and socio maturity turned out to be significant predictors of total academic achievement and students from private schools scored higher than students from government schools.

Srivastava and Ramaswamy (1986) found that the effect of SES on achieving in mathematics and social studies was significant.
Trivedi (1987) showed that students belonging to upper socio-economic status group showed better academic achievement than students belonging to lower socio-economic status groups.

Mohammed (1987) found that there was a significant positive correlation between SES and achievement. He also stated that there existed significant negative correlation between SES and errors and achievement and errors.

Kapoor (1987) conducted a study of factors responsible for high and low achievement at the junior high school level. He found that majority of the achievers belonged to the higher SES groups and a large number of low achievers belonged to the low SES groups.

According to Rathaiah et al (1994) who conducted an achievement test to 600 selected senior intermediate students, equal representation was given to both the sexes and found that there was a significant and positive association between achievement and socio economic status of the student.

On the other hand some studies showed negative relationship between socio-economic status (SES) and academic achievement.
That achievement was not significantly related to socio-economic status was found by Rao (1965), Colemen et al (1966), Fenskl (1969), Sudhama (1973), Reddy (1973) and Shaehdeve (1974).

Srivastava (1967) found that under achievement was related to SES, fathers' profession, number of siblings and birth order.

Saini (1977) found that in the case of science students, academic achievement was significantly related to educational standard of parents, but not to economic status.

Reddy (1978) found that the socio-economic status of the pupil's parents' was not significantly related to scholastic performance but class X pupils having from homes with higher socio-economic status performed better.

Salunke (1979) found that though SES was unrelated to academic achievement, educational facilities and emotional happiness in the home were found to contribute positively to the pupils' performance in studies. He also found that economic management was found related.

Rajput (1984) found that income and fathers' occupation and father's and mother's education was not at all meaningfully related to academic achievement.
Doraswamy (1985) concluded that the income range of the parents did not have any adverse effect on the performance of the students.

Narang (1987) found that SES did not affect academic performance in the city, town and village areas.

Ramila Salvi and Smita Trivedi (1991) found that socio-economic status did not have a significant influence on achievement.

Koteswara (1997) concluded that socio-economic status was negatively correlated in the case of rural students from high socio-economic status families.

Mishra (1997) conducted a study on 100 high school boys and girls of Puri town in Orissa to find out the relationship between academic achievement and intelligence, socio-economic status and personality factors. He found out that socio-economic status and other personality factors did not show any significant relationship with academic achievement of boys and girls.

Aruna Suri et al (1998) conducted a study on 1,500 students including both the sex is equal of class IX and X to study the difference in the scores of achievement, motivation between different levels of socio-economic status.
and sex and concluded that socio-economic status effects the achievement motivation.

Capraro, Mary Margaret et al (2000) concluded that the effects of socio-economic status varied among groups but were found to be consistently across racial lines.

In view of these findings socio-economic status of the children were intended to be examined and its magnitude of relationship with achievement was resolved to be examined.

2.3.9 ROLE EXPECTATIONS:

Among the several sociological variables, pupils' role expectations determine to large extent, the academic performance. If the expectations are closer to the exhibited role, the student is likely to achieve better grades than one who does not attain this closeness of relationship.

Expectations form the basis for more favourable performance. It can also be stated as expectations also influence the teaching-learning process thereby creating an impact on academic achievement.

The present investigation tried to explore the relationship between degree of congruence of pupils on pupils' role expectations and their academic achievement. As
the study attempted to ascertain the self expectations of the pupils on their role, the studies related to self concept were also reviewed in the following pages.

Chambers (1957) assumed that accuracy in interpersonal perception is a generalized ability and concluded that it is a determinant which contributes to the scholastic achievement even after the effects of intelligence have been partialled out.

Shaw and others (1960), Brookovr and Others (1962), in their correlational studies repeatedly identified strong relationship between expectation measures in the form of self concept and academic achievement.

Aronson and Carlsmith (1962) found that self expectations are also determinant of performance, who experimentally demonstrated by provided adult subjects with false information regarding their abilities to identify schizophrenic males from pictures. Bloom (1964) and Rosenthal and Jackson (1968) indicated that the individual child’s attitudes and expectations are most easily influenced from external sources in the younger groups.

Beez (1967) found that teachers who had been lead to expect better pupil performance tried to teach their
preschool pupils significantly more words than teachers who had been lead to expect poorer performance.

Katz (1968) found that achievement which do not conform to the self expectation has hypothesised to produce a state of anxiety, tension, which is reduced by bringing the expectations closer to actual performance, and performance closer to expectations.

Porter and Lawler (1968) have suggested that role perceptions may also contribute to predict performance.

Jones and Greeineeker (1970) studied certain non-intellectual factors like identity rating scale, self concept of ability and self expectations. All the variables were positively associated with achievement with the expectation of self expectation and scholastic aptitude which were positively associated with each other. It was inferred that, at this developmental periods self perception appears to be the most accurate predictor of academic achievement.

Binder and others (1970) after a thorough review of many works felt that 'not only many individuals define their roles in terms of expectations, but they also may define their ability to succeed in these roles'. In view of the fact, it was seen that individual's self-expectations
for their behaviour in the role of student and their self concepts of ability are vital factors to be explored in the study of differential academic achievement.

Rothbart and others (1971) found that in a discussion setting with high school pupils, teachers spent more time attending the pupils who had been described as having greater academic ability than those designated as lacking in intellectual potential.

On the other hand, expectation defined by Finn (1972) was "an expectancy or expectations set, is a conscious or unconscious evaluation which one person forms of another or of himself which leads the evaluator to treat the person evaluated in such a manner as though the assessment were connect. An expectation implies the anticipation of the behaviour most likely to actually occur, given the individual and circumstances".

Jagannadhan (1985) found that pupils' role expectations had profound influence on academic achievement.

Shah (1990) expressed that role constitutes the shared expectations of the members of the organisations and groups of which he is a part, regarding the kind of activities and functions that he is to perform.
Vanamathi (1992) who studied on role expectation and role performance of women, found that the men and women in her sample had a similar perception of the role expectations of women, but differed on the role performance of women.

The above discussion centered around studies which investigated the expectancy effects and their relationship with academic achievement. As already pointed out, the expectations are the perception of ideal role about others held by a person. Among these studies it was clearly revealed how the degree of congruency between expectation of teachers and pupils about each other or about the pupils alone would influence their academic performance. Expectations of pupil's role are generally formed by teachers, parents, co-students or peer groups and the student himself or herself. On the other hand self-concept or his own expectations about his role as a pupil do have a significant effect on the scholastic achievement. The present investigation instead of examining the teacher and self-expectations in isolation, it aimed at bringing their expectations closer together. The matched groups whose expectations converged closer to each other, were called congruent groups and these diverged much from each other, were called 'ingruent' groups. These groups were then related to academic achievement. Majority of the above
studies were of recent origin. At present much emphasis was laid on the examining of the students' role in the social and psychological setting in the classroom and school. Based on these findings, the study aimed at analysing this variable in relation to achievement.

2.3.10 SCIENTIFIC APTITUDE:

Many researchers indicate that intelligence and aptitudes in specific areas are two important determinants of school attainment and therefore are potential predictors of success in all form of performance in school subjects. During the early years of the mental measurement movement of the present century, intelligence was considered to be the sole determinant of successful academic achievement and its predictive efficiency has been unquestionably established. Later many psychologists and educationalists focussed their investigations on different aspects of aptitude - its nature, measurement, its efficiency in predicting academic achievement.

Those who study science aptitude complex of interacting hereditary and environmental determinant producing pre-disposition to science learning, focussed on aspects such as its predictive efficiency, identification of its important correlates, group differences, aptitude
treatment interaction on instruction and the like. As said earlier the usefulness of aptitude testing for the identification of the potentially talented at the school level itself was highlighted by the Robbins report (1963) and the NCERT annual report (1966-67). According to the later "science aptitude begins to germinate by about 12+, 13+ and tern to be developed in full form by about 15 and 18+ ....." Studies by Berton and Perry (1975), Joseph (1979), Sudha (1981), Nair and Joseph (1978), and Thampy (1984) revealed that science achievement can be predicted with the help of science aptitude measure of their respective sample. Some of the studies related to scientific aptitude are discussed below.

Seashore (1962) brought together a large number of validity coefficients for scholastic aptitude tests and found that groups of girls had typically produced significantly higher coefficients than had groups of boys.

Tyler (1965) observed that special ability tests typically show feminine superiority on verbal fluency, manual dexterity, rote memory and classical aptitude.

Chatterji and others (1972) studied the achievement levels of 52 pupils of class X and 32 pupils of Class XI technical stream students of Calcutta in relation
to their aptitudes and biographical factors. They found a high degree of correlation among three variables.

Aptitude has been identified as an important correlate towards academic success in certain specific fields. Medical aptitude is indicated as a contributing factor for proficiency in medical examinations in the study by Agrawal (1973).

Singh (1972), Sumathy Kuttyamma (1973), Chatterji et al (1978), Senapathi (1978) also studied with respect to science and study the predictive value of interest in science and scientific aptitude in predicting success in higher secondary science.

Thakur (1974) in his study revealed that boys with less aptitude for a particular subject failed to achieve satisfactorily in that subject.

Pal (1982) conducted a study on 200 pre-adult age group students for determining the different factors of abilities in learning science by adolescent pupil. He found that general ability, scientific aptitude/reasoning, speed and precision and problem-solving ability were significantly responsible for the learning of science.

Sharma (1984) conducted a study on 2318 subjects on aptitude and found that the demographic variables like
age, education and experience had their own district relations with the performance on the aptitude tests. He further concluded that the groups differing in age, education, experience, state ethnicity and rural, urban background showed a significant difference in the performance on the aptitude tests.

Bandyopadhyay (1984) conducted a study on 420 adolescent students of boys and girls to assess adolescent students' attitude towards science, and to find out the environmental and academic factors that influence their attitude towards science. He found out that parent education and SES led to favourable attitude towards science.

In the study of Mehna (1986) it is found that scientific aptitude is indicated as a significant predictor of academic achievement in science.

Ghosh (1986) conducted a scientific aptitude test on IX class students studying in different urban and rural schools and found that urban students did not show better performance in scientific aptitude test than rural students. He also found that boys did not possess more scientific aptitude than girls. There was a positive relationship between scientific aptitude and scientific attitude; scientific aptitude and academic motivation. He also
concluded that students having high scientific attitude were superior to those having low scientific attitude with respect to their scientific aptitude. Urban students belonging to the high SES group had more scientific aptitude than urban students belonging to the low SES group.

Sundararajan et al (1991) found that there is no significant difference between government and private school students in respect of their attitude towards the study of mathematics.

Meera (2001) conducted a study on the nature and efficient relationship of language aptitude, self attitudinal and motivational variables with achievement in English, total and content wise. She concluded that among five dependent variables selected for the study, language aptitude and attitude towards education are the best correlates of achievement in English. She also found that high mean achievement in English scores were found to be associated with high language aptitude and favourable attitude towards education.

**AGE:**

A number of studies have reported differences in academic performance according to the age. The successful students have been found to be in lower age groups by some
workers, Bear (1928), Dwyer (1939), Pierson (1948), Kamat (1963), Kapoor (1969), Wig and Nagpal (1970), and Sinha (1970) reported a negative relationship between age and scholarship up to the age of 21 and positive trend beyond. Other workers Summerfield (1951), Hopkins et al (1958), and Astin (1964) observed only marginal relationship.

It seems that age, a specific factor is not crucial in success or failure. The higher age of the poor achievers could be due to their past failure or break in study or due to their starting late owing to socio-economic reasons or family traditions. It is equally likely that parents with better education and professional occupations send their children to school at an early age. The findings of Dwyer (1939) indicate that relatively higher age is not necessarily a handicap and may be an advantage in terms of a specific kind or intensity of achievement motivation or maturity. It is also likely that any superior academic performance of younger students is not so much a function of age as of intelligence. Students who enter university earlier than their peers are more likely to be of superior ability.

There has been, thus, no consensus on the relevance of age, but it is generally agreed that students who enter college at the normal age or a year younger tend
to do better work and are usually of superior intellectual endowment.

Apart from these variables hobbies of the subjects, type of residence of the subjects, was also taken into consideration for the purpose of analysis. The above discussions were centered around several of the studies related to the socio-psychological factors considered in the study. Keeping all these observations in view the problem is stated clearly with its objectives and suitable hypotheses are formulated in the succeeding chapter.