CHAPTER - I

INTRODUCTION
1.0.0 INTRODUCTION

**Education is what remains after one has forgotten what one has learned in school**

- Albert Einstein

With a change in scenario, a thrust on Technology, rapid industrialization and modern materialistic achievement, the Education has undergone a drastic change. A person’s education has become an indicator of his status in society. The scores in Examination decide about the level of intelligence whereas the education is linked to the life chances, income and well being **Battle and Lewis** (2002). Therefore it is important to have a clear understanding of what benefits or hinders one's educational attainment.

Opportunities of education depend upon the economic condition of the family and privilege is given to mostly male child in the family. Girl Education is neglected although girls are no less in intelligence and capability than boys. The socio Economic background decides the type of school a child can attend which further affects their growth and academic achievement. Environment and parent education both play a vital role on academic achievement of children. There are many more factors like aptitude, attitude, motivation etc. which govern the academic achievement of a child. Thus the achievement of a child going to a public school varies from a government school. The influence of residential school is more on children as compared to day school.

Education is the process of developing the capacities and potentials of the individual so as to prepare that individual to be successful in a specific society or culture. From this perspective, education is serving primary as an individual development function. Education begins at birth and continues throughout life. It is constant and ongoing. tSchooling generally begins some where between the ages four and six when children
are gathered together for the purpose of specific guidance related to skills and competencies that society deems important. In the past, once the formal primary and secondary schooling was completed, the process was finished. However, in today's information age, adults are quite often learning in informal setting throughout their working lives and even into retirement. In our society academic achievement is considered as a key criterion to judge one's total potentiality and capacity. Hence academic achievement occupies a very important place in education as well as in the learning process. Academic achievement is defined by Crow and Crow (1969) as the extent to which a learner is profiting from instruction in a given area of learning i.e. achievement is reflected by the extent to which skill and knowledge has been imparted to him. Academic achievement also denotes the knowledge attained and skill developed in the school subject, usually designed by test scores. Achievement is influenced by personality, motivation, opportunities, education and training. There are several other factors also which influence the academic achievement of student like study habit, self-concept, socio economic status, intelligence etc.

**Academic achievement**

The main focus of educative process is to improve the performance or learning of the students. The learning outcomes of the students are measured with the help of their achievement or performance. Academic achievement is measured by actual performance in academic tests. Performance assessment is the process of measuring the terminal behaviors of the students at the end of instruction. It is the job of the teacher to measure whether the students have acquired the component concepts as an achievement before proceeding with the instruction which arranges these concepts in proper relationship for the learning of the principle. The achievement is the end product of the instruction usually verbal performance. There are 3 types of objectives
which are emphasized in teaching-learning situation cognitive, affective and psychomotor, but it is the assumption of educationists and psychologists that cognitive achievement is the best representation of the total behavioral change of students. Educational measurement of achievement has two main functions-

1. Prognosis function- how much students have acquired component of concepts.
2. Diagnosis function- What are the causes of not acquiring component of concepts.

The meaning of the term "achievement" must be considered in relation to family involvement in schools. It is important to know how the achievement was measured before conclusions can be drawn about the relationship between family involvement and academic achievement.

The other correlates of Academic Achievement are Gender, Intelligence, socio-economic status of the parents, family environment, parents’ education, Father’s profession, medium of instruction, type of Board, Class, motivation etc.

Academic performance has been considered as an interactive function of many innate, psychosocial and demographic variables. The present study attempted to explore the nature and degree of relationship between academic performance and selected innate, social and demographic variables (such as, age, parents’ education and occupation, number of siblings, family income, age of onset of disability, preschool training and type of schooling), many socio-demographic variables like number of siblings, socio-economic status, and age were found to have significant correlation with academic performance of secondary school students. The differences were analyzed in relation to the educational system, class, medium of instruction, type of board and the vital role played by the family.

More often than not, standardized test scores are used to determine how well students are doing in school. Standardized testing is taken for granted in the country. The
general population does not question whether or not these measures are valid ways to assess their children's development and learning. In reality, these tests are determinants of accountability, a term used by those in power who need to know how effectively systems work. But should schools be so hooked on standardized tests for children?

In recent years, testing programs have increased. Kamii, C. (1990). Raising scores and having a good appearance are the goals for most schools because newspapers and other media rank schools and districts by test scores. Other facets of society also rely on these test scores to determine the "best" schools. For example, real estate agents sell houses for families by using test scores to identify "good" school districts. But do these scores depict children's actual achievement?

The newer approaches to teaching children rely upon old methods of assessing achievement, and the two are not compatible.

Warash and Comuntzis (1996) have pointed out the inadequacies of mixing a more holistic curriculum with traditional pencil-and-paper assessment tools. The authors make a strong argument for looking beyond the traditional evaluation methods.

Gardner (1993) also agrees that academic achievement should be measured in a number of ways:

"Assessment, then, becomes a central feature of an educational system. We believe that it is essential to depart from standardized testing. We also believe pencil-and-paper; short-answer tests sample only a small proportion of intellectual facility. The means of assessment we favor should ultimately search for genuine problem-solving or product-fashioning skills in individuals across a range of materials."

The achievement tests are controlling process for teaching learning activities. It helps in evaluating the effectiveness of teaching instructions. It also provides the feedback
to the students as well as students. Educational measurement is the task of a Student. Teaching and testing are the main responsibilities of Students.

In the achievement test main emphasis is given on content coverage or course. The achievement test has the focus on the realization of objectives of teaching learning are known as criterion test. The same content is taught at different levels but has different objectives. The teaching objectives are assessed in terms of terminal behaviours of the students.

Four basic types of test may be identified. It may be noted that all educational objectives are ultimately concerned with behavior, that is what the examinee can or will do in specified situations. Accordingly the test constructor may:

1. give the examinee special occasions to do some of the things that are specified by the objective (without waiting to observe these things the natural course of events) and assign measures on the basis of the frequency or adequacy with which he does these things;

2. give the examinee occasion to do things similar to some of those specified by the objective, and assign measures on the basis of the assumed relationship between the behavior elected by the test and that constituting the criterion series;

3. Describe the situation in which the examinee would have occasion to do what the objective specifies, and then ask him to tell what he would do in this situation or how would do it, and

4. Discover whether or not the examinee knows the facts, rules and principles etc. that are presumably essential or conducive to the desired behavior.

There is certainly no implication that tests should be purely of one type or the other, nor is it suggested that many effort should be made to classify existing
tests on the basis. Achievement tests are generally used in education, industry, civil service, also for guidance and counseling and clinical purposes.

Assignments of Grades: Standardized achievement test are more often used to assign course in special programmes in government, industry and trainings courses. It is more meaningful to assign grades on the basis of achievement test score.

1. Promotion to next class: In educational institutions the students are promoted to higher class on the basis of achievement test scores. In some government, services promotion for next higher post is done on the basis of tests score on achievement test.

2. Classification of Individuals: Achievement tests are often used to classify students into special courses or curricula within grammar school, high school, or college. One of the multi subject achievement tests is useful for that purpose.

3. Counseling and Remedial Teaching: Achievement tests are very useful to the school psychologists and the clinical psychologists in understanding the school difficulties of particular children. The practice in some schools of promoting children from one grade to the next even if they do very poorly. This will frustrate him in the next class due to over difficulty of subjects. Achievement tests are used to indicate the school progress and effectiveness of learning situation. The cause of truancy or poor conduct in the classroom is often indicated by achievement tests. A very high score on an achievement test can also indicative of students difficulties in conduct. The very bright student is often bored by the low level or curriculum and turns to behavior or truancy.

4. Vocational Guidance: Achievement tests in combination with course grades are useful in helping the students to choose future programme of school work
or vocational training. Achievement tests are used in vocational guidance must be evaluated as predictors not as assessments. Test scores are used essentially to forecast how well an individual is likely to perform later. After the Delta class achievement tests scores are the basis to select the subject for higher study. If the predictive validity of the achievement test is not known for vocations in question the vocational guidance is as good or as bad as the consenter’s judgment.

5. Measuring the Effectiveness of Learning Situations: If the student’s performance is poor we can infer that Student is not doing well. There are three major variables contributing to the student attainment- (1) Initial aptitude of student (2) Effectiveness of learning experience (3) Nature of test.

Achievement tests have a real purpose in measuring the effectiveness of different kinds of instruction and also the effectiveness of Students.

**Ability and achievement**

Before one proceeds to an examination of particular methods of evaluation, it is necessary to consider the relationship of achievement to such matters as ability, aptitude, and potential, since, as the common argument goes, the amount of achievement must be limited by the potentials of the pupils for learning. It seems that one of the most common complaints about pupils is that they do not work up to their abilities or capacities have been assessed, they usually refer to scores on so called intelligence, mental ability, or aptitude tests or describe pupils' performances in class at some previous time. Thus, they seem to suggest that one relatively brief sample of performance on a test or in regular class work dictates the standard that can be expected of the pupil at all times in the future. Those who say that pupils are not working up to their abilities should note that no test measures ability or aptitude.
All that one can do with a test is to measure performance on a selected set of items. If the terms ability, capacity, aptitude, or potential are used when speaking of test scores, they should be recognized as inferences that may not be dependable for a particular pupil.

The practice of comparing a pupil's performance with some vague potential ability or aptitude based on scores of general mental ability tests is virtually outmoded. To say that a child is or is not achieving up to his ability or potential when that ability is only a score on a test suggests erroneously that the test score is a stable measure of some over all potential that can be mustered to accomplish objectives in any subject at any time, and that the potential is highly correlated with achievement. There is much evidence that neither suggestion is acceptable. In any case, it may be argued that working up to one's ability at all times, is not a desirable objective.

The practice of basing instruction on some vaguely determined potential for each student is not particularly useful to educators. If a pupil is not making progress toward an objective, it is expected that a teacher will do his utmost to help the pupil to make as much progress as he can in the time allotted. No mental test can determine the spot at which the teacher should stop trying to help a pupil toward goals that have been broadly conceived but are flexible enough to consider individual differences. It may be necessary to lower or otherwise change objectives for certain pupils or groups of students, but such changes should be based upon observed performance of pupils under maximum conditions of motivation and effort rather than upon some vaguely defined ability, capacity, or aptitude inferred from the brief samples of performance obtained by administration of a so-called mental ability or maturity test.

**Standardized tests of achievement**
The large numbers of other students with whom a student may be compared are said to be norm groups, and distributions of the scores from such groups are called norms. When one uses the term standardized test, he refers to the fact that the test has norms. It usually means, also, that the test is scored by using a key, which designates the right answers. Tests made up and scored by teachers with a key, but which do not have norms, are not standardized tests.

**Validity of standardized tests**

If a test does what it is employed to do, it may be described as: valid. There are, currently, no completely valid standardized tests, and it seems unlikely, because of the complexity of human beings, that there will be any in the near future. At this time the best that can be done is to define very precisely what one wants the test to do and select the one that seems most likely to accomplish that purpose.

There are four kinds of validity. When a test demonstrably covers completely, or provides adequate samples of, the subject matter taught by the teacher, it is said to have content validity. If scores on a test predict well what pupils will do at some subsequent time, it is said to have predictive validity. If scores on a test are highly correlated with students' current performances, it is said to have concurrent validity. Construct validity is evidenced when individuals' scores are of the kind that one would expect from the theory underlying the test.

In the evaluation of learning, the greatest concern is for content validity. The evaluator will ask whether the test contains the kind of material that the instructor has been trying to teach the children. He will also want to know if it requires them to employ' the materials in the way he has been trying to get them to use it. Assume, for example, that an instructor is trying to teach a child to spell all of the 100 words on a list. In order to test him, he can make up a test that requires him to spell all those 100
words separately. In this case, there can be no question about the validity of the test for determining whether the pupil can memorize a list of spelling words. When standardized tests are used, however, they are not always certain to cover exactly what was taught in a particular situation.

**Reliability of standardized test**

It seems unfortunate that the word "reliability" was borrowed from common usage and employed as a technical term in the measurement movement. In common usage the term implies trustworthiness, general excellence, and dependability. In measurement it refers only to the consistency with which a subject responds to the items of a test over a brief period of time. It is theoretically possible for a test to be highly reliable but utterly worthless. Despite this fact, much of the discussion about educational measurements has revolved about the question of reliability.

**Norms of standardized tests**

Most norms for achievement tests are obtained by computing the average of scores of several thousand pupils at a particular grade or age level in various types of schools and communities.

Norms of this kind are useful to compare the average scores of the pupils in the schools with some hypothetical “national” norm, but they are not particularly useful to the classroom teacher. If his pupils are above or below the norm, it may be that they have reached that level simply because they varied from the subjects of the norm group in the learning opportunities they have had in the past.

**Diagnostic (analytic) tests**

Since achievement tests survey performances over wide areas and since sampling of each area is limited, intensive evaluation of performance in particular subject fields is impossible. When the teacher wishes to get detailed evidence about a pupil's
progress in a particular subject, he may decide to use a commercial or self-constructed diagnostic test. Such tests are usually devised by breaking down the functions to be performed in a particular subject such as arithmetic into small units and requiring the pupil to respond to items that cover specific types of performance. Basically, diagnosis and remediation go together. One uses a diagnostic test to determine whether remedial steps are to be taken with a particular pupil and to define their coverage if they are to be used.

Teacher-made tests
Standardized tests would probably be most effective in schools in which the materials to be covered, and the teaching methods to he used, were prescribed to the extent that much similarity in practice would be found. As teachers are given increased opportunities to select their own methods and adapt to local circumstances, they are given greater responsibility in the development of tests to evaluate their own programs. Such custom-made tests have definite potential advantages due to the fact that they permit more specific, more detailed, and more individualized evaluation than standardized tests permit.

One of the disadvantages of local construction of tests, however, lies in the waste that may be involved when many teachers do repeatedly what many other teachers in the same school system or even in adjoining classrooms are doing. Another is the fact that skill required in test construction is not always developed by teachers who may be highly proficient in other phases of the teaching-learning process.

Limitations of tests in evaluation
The most complete battery of tests ever assembled and administered would not provide a complete evaluation of a student's learning. it must be noted that tests can provide only the raw materials for evaluation. These need much interpretation.
Measurement by tests may tell us how much the pupils have mastered or how much progress has been made during a course of instruction, but it does not tell how good the results are. Amounts are not necessarily indicators of value. It is possible to determine by use of tests whether pupils have made higher scores than they did previously in reading, but tests do not tell if there has been increased use of reading for personal satisfaction or study of materials that may help in developing concern about social problems.

The use of tests in attempts at evaluation of personality characteristics is particularly difficult. In measuring achievement by tests, the more questions the pupil can answer in the time allotted the better the result is considered to be. In attempts to measure personal characteristics, however, the amount of the characteristic displayed does not necessarily indicate greater excellence.

Despite the various limitations of objectively scored tests, they have served and will continue to serve as devices that emphasize the presence of individual differences among students. They have provided a method for wider sampling of students' powers and achievements and have served effectively in the checking of teachers' judgments about students that may have been based on too rapid, too narrow, and too personalized judgments. Without objectively scored tests it would have been impossible to do much of the research on the mental and academic development of children and youth that has influenced the educational process. As the testing movement comes of age it seems likely that tests will continue to serve effectively in taking better evaluations of the growth and behavior of the students in our schools.

**Socioeconomic Status**

A family's socioeconomic status is based on family income, parental education level, parental occupation, and social status in the community (such as contacts within the
community, group associations, and the community's perception of the family), note Demarest, Reisner, Anderson, Humphrey, Farquhar and Stein (1993). Families with high socioeconomic status often have more success in preparing their young children for school because they typically have access to a wide range of resources to promote and support young children's development. They are able to provide their young children with high-quality child care, books, and toys to encourage children in various learning activities at home. Also, they have easy access to information regarding their children's health, as well as social, emotional, and cognitive development. In addition, families with high socioeconomic status often seek out information to help them better prepare their young children for school.

Crinic and Lamberty (1994) discuss the impact of socioeconomic status on children's readiness for school:

"The segregating nature of social class, ethnicity, and race may well reduce the variety of enriching experiences thought to be prerequisite for creating readiness to learn among children. Social class, ethnicity, and race entail a set of 'contextual givens' that dictate neighborhood, housing, and access to resources that affect enrichment or deprivation as well as the acquisition of specific value systems."

Ramey and Ramey (1994) describe the relationship of family socioeconomic status to children's readiness for school:

"Across all socioeconomic groups, parents face major challenges when it comes to providing optimal care and education for their children. For families in poverty, these challenges can be formidable. Sometimes, when basic necessities are lacking, parents must place top priority on housing, food, clothing, and health care. Educational toys, games, and books may appear to be luxuries, and parents may not have the time, energy, or knowledge to find innovative and less-expensive ways to foster young
children's development. Even in families with above-average incomes, parents often lack the time and energy to invest fully in their children's preparation for school, and they sometimes face a limited array of options for high-quality child care—both before their children start school and during the early school years. Kindergarten teachers throughout the country report that children are increasingly arriving at school inadequately prepared."

Families with low socioeconomic status often lack the financial, social, and educational supports that characterize families with high socioeconomic status. Poor families also may have inadequate or limited access to community resources that promote and support children's development and school readiness. Parents may have inadequate skills for such activities as reading to and with their children, and they may lack information about childhood immunizations and nutrition.

Zill Collins, West, and Hausken (1995) state that "low maternal education and minority-language status are most consistently associated with fewer signs of emerging literacy and a greater number of difficulties in preschoolers." Having inadequate resources and limited access to available resources can negatively affect families' decisions regarding their young children's development and learning. As a result, children from families with low socioeconomic status are at greater risk of entering kindergarten unprepared than their peers from families with medium or high socioeconomic status.

The nature of the relationship between socioeconomic status (SES) and student achievement has been debated for decades, with the most influential arguments appearing in Equality of Educational Opportunity (Coleman, et al., 1968) and Inequality (Jencks, et al., 1973) in the United States of America, and a number of commissioned inquiries in Australia (Commission of Inquiry into Poverty, 1976;
How SES influences student achievement is not clear, and there have been many theories to explain the relationship. In one scenario, school students from low-SES homes are at a disadvantage in schools because they lack an academic home environment, which influences their academic success at school. Another scenario argues that school and neighbourhood environments influence academic success, so that low-SES schools are generally lower-performing, and that only extremely resilient young people can escape the ‘fate’ of low academic achievement. How governments interpret the SES–achievement debate influences education policies designed to ameliorate educational disadvantage, so it is important to examine the contribution SES makes to achievement at both student and school level.

**Domains of Socio Economic Status**

The literature available on SES indicates change in the concept of social position from time to time. Power (1981) focuses only on occupation while measuring socio economic position. U.S. Department of Defense (1986) identified some traditional components of socio economic status viz education, occupation, income, employment status, possession of materials and presence of reading materials. Australian Bureau of Statistics (1994) identified education health, contact with criminal justice system, employment, housing, access to services, water sewerage, etc. as social position and income, ownership, assets level, holdings etc as economic position of a person. Socio-economic status was assessed at three levels i.e. (i) individual level (ii) household level (iii) community level. Social class, caste and race were also identified as indicators of socio-economic position (Piko and Fitzpatrick, 2001). Income, wealth, social standing/prestige and social deprivation were used as common factors in measurement of social position. Tello et al (2005) developed an ecological index of
socio economic status through factor analysis of 1991 Census (Italy) data. There factors reflected the domains of (i) educational-employment sector (ii) significant relational network (iii) material conditions. A scale was also developed to measure socio economic status. Caste, family, education (of self), occupation, income, possession (material and monetary), land (agricultural/residential), participation in social, political, religious and academic activities, house (own or rented), size of house, etc. were the areas identified to measure socio-economic position.

**Family Background and children’s learning**

It is very well known that children’s educational outcomes vary sharply with their parents’ socio-economic background. Differences in outcomes with parental background emerge early at the pre-school level and are re-enforced in childhood and the teenage years through to tertiary education.

**Parents’ education and children’s achievement**

The production of children’s educational achievement can be usefully conceptualized within the simple framework proposed by Haveman and Wolfe (1995), which drew on Leibowitz (1974). This has three outcome variables, ability, final schooling level, and adult income. These are linked in a recursive structure: ability helps determine final schooling level and both help determine adult income. Ability, within the Haveman and Wolfe framework, has two proximate determinants: home investments represented by the quantity and quality of time and goods inputs in the child, and heredity. Home investments are in turn determined by parents’ education and abilities, both directly and indirectly via family income. Parents’ abilities are passed-on in part via genetic inheritance. The framework serves as a reminder that the total correlation of parental education with the child’s education will not be revealed in an analysis of children’s ability. Final school level is a function of home investments and family
income as well as child ability, and hence reflects additional impacts through those pathways from parental education.

Children with very low mental ability who are classified as stupid children, were born to parents of all Socio Economic Status levels but these are much less common among those belonging to higher economic status. When scales are used to measure economic status, the relationship can be correlated with intelligence. The correlations between the two come to be about 0.30. It was observed in some studies that when subjects are asked to rank occupational titles on the basis of prestige, these ranking tend to follow the pattern of the differences in intelligences.

**Type of school and Academic Achievement**

A school is a formal agency to impart education. The aim of education is learning but this learning process is evaluated in terms of academic achievement. The students in a school come from different backgrounds; different income groups, there is variation in their IQ score; there is discrimination on gender basis as well. Another factor is type of school whether it is government school or private school. Academic performance of a child is influenced by all these factors. But do we categorize our students accordingly and try to educate them to give good results; this question is of utmost importance when the child is appearing for his first board exam at secondary level. The academic achievement can be increased by considering these facts, as it will not only enhance learning but is going to motivate students for better academic results.

In the pre-independence era the school system in India was, mainly managed by either a handful of westernized residential schools or by certain religious and social groups. After independence a sudden awakening led the State Governments to take up the responsibility of opening schools for children. There were thus Government schools
and some privately public schools. But as the need and awareness grew, the
government agreed to share the responsibility of running the schools with voluntary
organizations and offered them grants in-aid to run the schools and thus came a
variety of schools in the education system represented by:

a) Government schools
b) Government-aided schools
c) Unaided schools/private schools/recognized schools, d) Minority schools

**Government Schools**

Government Schools are those schools which are run directly by the State
Government. These schools are looked after by the Directorates of Education of
various states. The establishment of a school, provision of buildings, annual
maintenance of school and its property, admission of students, curriculum framework
and its proper execution are taken care of by the Directorate of School Education.

**Government-aided Schools**

"Aid" means “any monetary help granted to a recognized school either by the Central
Government, the State Government Administrator, a local authority or any other
authority designated by the Central Government, the State Government Administrator
or a local authority".

An aided school is normally a recognized privately managed school which receives
aid in the form of development grant from the Central Government, the State
Government, Administrator or a local "authority.

**Unaided / Private / Recognized Schools**

The expression 'recognized schools' is meant to indicate schools recognized by
appropriate authority which could be the Central Government/The State of the Local
Government or Board with or without aid. There are many schools which affiliate
themselves with some board or the other but do not receive grant. These schools are unaided privately managed recognized schools.

**Minority Schools**

"Minority School" means a school established and administered by a certain minority community having a right to do so under Clause (I) of Article 30 of the Constitution. The Constitution of India guarantees to every religious and linguistic minority the right to establish and administer educational institutions of its own choice. An institution will fall within the definition of the expression "Minority School" only if it is established by a religious or linguistic minority.

**Gender and Academic Achievement**

Gender issue has become the talk of today's forum. Although the literacy rate is more among the boys than girls; it is quite interesting to observe that girls are securing better ranks than boys in almost all competitive examinations. From the last ten years, it is very fascinating to note the girl's figure to be more often in top ten two ranks in tenth class examination.

Earlier some of the researchers reported that intelligence was the only factor that causes gender variations among high achievers. Education aspiration in case of girls was almost negligible causing very poor enrolment of girl children in schools. However, this trend seems to be changing in the recent past and discriminations are not so marked. Hence, the present study is an attempt to find out the gender differences if any, on the factors affecting academic achievement to analyze the academic achievement of high school boys and girls.

As far as general intelligence is concerned, males and females appear to be equal. The differences are related to specific abilities or specific traits.
- Males on an average show superiority over females in the ability to reason and to detect similarities and in certain aspect of general information. Girls on an average show some superiority in memory, language and aesthetic comparisons.

- Males excel in a number of skills and in understanding spatial relations while females excel in verbal aptitude and memory.

Studies have shown that female students develop facility in the use of language at an earlier age than the male counterparts. Studies on pre school children have shown that girls had larger vocabulary than boys of the same age and had consistently higher scores in reading, sentence completion and the like. Generally speaking, differences in terms of intelligence or what is called scholastic aptitude are not such as to call for different roles assigned to them by society. Therefore, in educational programs there should be no discrimination in the treatment given to boys and girls. This is because of their future needs rather than due to any innate differences in the mental ability. Society perceives a female child as different from a male child and assigns stereotyped roles to the female child. Some teachers in the school while teaching give examples and use teaching strategies which are biased against the girl students. Such teachers think that girls should have a different type of education which may be helpful for them to develop as a good housewife and a mother. This not only negates individual differences both in terms of personality traits and specific abilities in which girls are different from boys, but in comes in the way of competencies to be developed among all the students studying at a particular level. Girls and boys may differ in terms of certain abilities, so specific teaching learning strategies have to be evolved to develop their inherent abilities to the maximum and also to prove extra opportunities for development of other competencies in which they are weak. An
attempt should be made to recognize the individual differences between girls and boys and make use of these during the teaching–learning process. The second issue relates to the social attitude towards girls which is reflected not only in the treatment received by girls but also in the instructional materials meant for them. This becomes more serious in case of girls coming from weaker sections of society that is scheduled castes, scheduled tribes, nomads and other disadvantaged classes. They carry the stigma of belonging to the disadvantaged group and that also coming from a weaker section. Both these educational and social perceptions come in the way of the development of a girl child in our society. Economically, most parents feel uncomfortable in sending their daughters to school for education. They feel that the money required for educating girls could be more usefully spent on their marriage instead of education. While the various State governments have started a number of welfare schemes for female children and some programs have been developed to promote their education, girls still remain the biggest group outside the educational system. The economic, social and educational issues related with education of girls are of immense importance for the teacher to ponder.

**Intelligence**

Intelligence is a term describing a property of the mind including related abilities, such as the capacities for abstract thought, understanding, communication, reasoning, learning, learning from past experiences, planning, and problem solving. Intelligence is most widely studied in humans, but is also observed in animals and plants. Artificial intelligence is the intelligence of machines or the simulation of intelligence in machines. Numerous definitions of and hypotheses about intelligence have been proposed since before the twentieth century, with no consensus yet reached by scholars.
Francis Galton was the first scientist to propose a theory of general intelligence; that intelligence is a true, biologically-based mental faculty that can be studied by measuring a person's reaction times to cognitive tasks.

Galton's research in measuring the head sizes of British scientists and laymen led to the conclusion that head-size is unrelated to a person's intelligence.

Alfred Binet, and the French school of intelligence, believed intelligence was an aggregate of dissimilar abilities, not a unitary entity with specific, identifiable properties. He created the Binet test with his partner Théodore Simon.

Concept of Intelligence

Psychologists are agreed that they do not know what intelligence is. They can only observe how it works in terms of behaviors. The assumption is that behavior reflects intelligence. The present basis of study has yielded such important and usable information about man’s behavior as to be extremely helpful to Students. If a Hindi Student teaches in a class, a student responds correctly and quickly for Student’s questions. The Student usually says that the boy is very intelligent. Similarly a Mathematics Student says that boy is intelligent as he attempts the problems quickly and correctly, because his behavior in the class is above all the students of his class. The Student does not say that he us good in Hindi or in Mathematics. Thus intelligence is nothing but intelligent behavior. There are two aspects of intelligence which must be considered: the innate potential of an individual and the functional expression of that potential. The first aspect is physiological and second aspect is behavioral. The measurement if intelligence of today is not absolute. It should be used for tentative planning and for tentative prediction. There are innumerable definitions of intelligence and psychologists have defined it in several ways. The term intelligence and ability are used interchangeably to denote the powers or capacities of
an individual. Such powers or capacities differ from one individual to another or from one species to another in terms of the range and depth of their operation.

Intelligence has been defined by a number of authors in different ways. The following definitions of intelligence support this proposition.

A. Anastasi “Intelligence is not a single, unitary ability, but rather a composite of several functions. The term denotes that combination of abilities required for survival and advancement within a particular culture.”

M. Anderson “…that face of mind underlying our capacity to think, to solve novel problems, to reason and to have knowledge of the world.”

A. Binet “It seems to us that in intelligence there is a fundamental faculty, the alteration or the lack of which, is of the utmost importance for practical life. This faculty is judgement, otherwise called good sense, practical sense, initiative, the faculty of adapting oneself to circumstances.”

E. Boring “Intelligence is what is measured by intelligence tests.”

H. Gardner “Intelligence is the ability to solve problems, or to create products, that are valued within one or more cultural settings.”

J. P. Guilford “…performing an operation on a specific type of content to produce a particular product.”

R. J. Herrnstein and C. Murray “…cognitive ability.”

A. Jensen “Intelligence is a general factor that runs through all types of performance.”

J. Piaget “Intelligence is assimilation to the extent that it incorporates all the given data of experience within its framework. ..There can be no doubt either, that mental life is also accommodation to the environment. Assimilation can never be pure because by incorporating new elements in to its earlier schemata the intelligence constantly modifies the latter in order to adjust them to new elements.”
L. L. Thurstone “Intelligence, considered as a mental trait, is the capacity to make impulses focal at their early, unfinished stage of formation. Intelligence is therefore the capacity for abstraction, which is an inhibitory process.”

L. L. Thurstone “The capacity to inhibit an instinctive adjustment, the capacity to redefine the inhibited instinctive adjustment in the light of imaginally experienced trial and error, and the capacity to realise the modified instinctive adjustment in overt behavior to the advantage of the individual as a social animal.”

D. Wechsler “A global concept that involves an individual’s ability to act purposefully, think rationally, and deal electively with the environment.”

Binet and Simons (1905) intelligence refers to ‘judgement, good sense, and initiative, the ability to comprehend and to reason well and to adapt one’s self to circumstances.”

Burt (1947) holds that intelligence is ‘the power of readjustment to relatively novel situation by organizing new psychophysical combinations’.

Terman (1921) intelligence is ‘the ability to carry out abstract thinking.”

Stoddard (1943) holds that ‘intelligence is the ability to undertake activities that are characterized by difficulty, complexity, adaptiveness to a goal, social value and the emergence of originals, and to maintain such activities under conditions that demand a concentration of energy and resistance to emotional. A variety of definitions have been given by psychologists, but as a matter of fact, each can be classified into one of the three groups. One group of definitions places the emphasis upon ‘adjustment or adaptation of the individual to his total environment’ or to limited aspects of it. According to definitions of this type, intelligence is general mental adaptability to new problems and new situations of life or otherwise stated, it is the capacity to reorganize one’s behavior patterns so as to act more effectively and
more appropriately in novel situations. Thus, the more intelligent person is one who can more easily and more extensively vary his behavior as changing conditions demand, he has numerous possible responses and is capable of greater creative organization of behavior, where as the less intelligent person has fewer responses and is less creative. The more intelligent person has fewer responses and is less creative. The more intelligent person, accordingly, can deal with a greater number and a greater variety of situations than the less intelligent; he is able to encompass a wider field and to expand his area of activity beyond that of the less intelligent.

A second type of definitions stated that intelligence is the ability to learn. According to this definition, then a person’s intelligence is a matter of the extent to which he is educable, in the broadest sense. The more intelligent the individual is, the more readily and extensively is he able to learn, hence, also the greater is his possible range of experience and activity.

The third type of definitions defined intelligence as the ‘ability to carry on abstract thinking’. This means the effective use of concepts and symbols in dealing with situations especially those presenting a problem to be solved through the use of verbal and numeric symbols. Binet’s conception of intelligence belongs largely in this category, for he maintains that it is the capacity to reason well to judge well and to be self critical.

Some psychologists believe that several kinds of intelligence should be distinguished from one another. Noteworthy among them is E.L. Thorndike, who has divided intelligent activity into three types (1) Social intelligence or ability to understand and deal with persons (2) Concrete intelligence or ability to understand and deal with things as is skilled trades and scientific appliances (3) abstract intelligence or ability to understand and deal with verbal and mathematical symbols.
The merit of this classification of types of intelligent activity for psychological testing, and diagnosis, is that it indicates several realms in which persons might be functioning and implies that separate and sufficiently specialized test might be devised to measure how effectively persons are functioning in each.

**Social Intelligence:**

This kind of intelligence is exhibited by those who manage, or manage to get along with, people: business executives, salesmen, Students, statement, and the like. For persons operating in this cluster area, people must be managed in order to be successful Social relationships and interaction are of prime importance, even at the expense of the social being’s subjugating himself in certain respects to obtain success. This kind of intelligence is of such importance in the public regard that a Dale Carnegie can sell million of copies of a book which shows ‘how to do it in terms that the average citizen can understand. The importance of socially intelligent behavior is dependent upon the structure of the society, not the structure of intellect. Our society is willing to pay a premium to persons behaviourally competent in this are.

**Concrete Intelligence:**

This kind of intelligence is exhibited in the management of concrete things. On a lower plane, it is shown by the unskilled and skilled labourer. In an intermediate degree, it is illustrated by the work of the skilled craftsman. In its highest form it is shown by the creative artist. When invention and design are combined with skilled craftsmanship, we get a form of intelligence highly valued by society.

**Abstract Intelligence:**

This is the kind of intelligence that manifests itself in the management of abstract symbols. As a nodal point, it would include all types of verbal activities, sciences, mathematics any field where thought is carried out with non concrete objects. In
certain cases even dealing with concrete objects would call for abstract intelligence. In general, abstract intelligence is found in ‘bookish’ persons. Our society has tended to look on such persons as impractical and rather self centred, living in an ‘ivory tower’ removed from reality. The materialistic quality of our society’s value system has led to this stereotype for people who operate primarily on an abstract plane. The simple truth, however, is that they are the ones who produce for society, and their products often have far reaching and long range consequences. The fact that society does not always reap the harvest of these products immediately is often due more to society’s lag than to the abstract thinker’s lack of realism. Greater awareness of such contributions has led to some change in view points about ‘eggheads’ in recent years. Many citizens may not understand the abstract thinker, but they can enjoy his products.

These kinds of intelligence are not independent of on another. Persons of high abstract intelligence will also have and use social and concrete intelligence, though to a lesser degree. The predominant kind of intelligence shown will depend upon possibilities of connection plus exposure, learning, and the building of interest. All of society cannot be abstract workers, fortunately, because of the difference in connection forming. But neither will a given individual deal only in the abstract. Society will not allow him to, for in its complexity it includes too many different behavioral situations.

The theories of intelligence have been developed by psychometrician, because statistical methods i.e. factor analysis have been employed in formulating the theories of intelligence. Thus the following are most popular theories of intelligence

1. Binet’s Unifactor Theory
2. Spearman’s Bi-factor Theory
3. Thurston’s Multifactor Theory
4. Thompson’s Sampling Theory
5. Holizenger’s Two Factor Theory
6. Vernon & Burt’s Hierarchical Structure Theory
7. Guilford’s Structure of Intellect
8. Cattle’s Fluid and Crystallized Intelligence

Intelligence as a concept has been understood in different ways by different psychologists. It is the general mental adaptability to new problems and conditions of

**Nature of Intelligence**

The true nature of intelligence can be understood by first, defining it to understand its meaning; discussing the various theories explaining its structure in terms of the several constituents and factors; and identifying the numerous other aspects and characteristics related to intelligence and it’s functioning.

**Distribution of Intelligence**

Distribution of intelligence is not equal among all human beings. It resembles the pattern of distribution of health, wealth, beauty and similar other attributes or endowments. Its normal distribution is governed by a definite principle where the majority of people are simply average, a few very bright and a fewer dull.

** Individual differences in Intelligence**

Wide individual differences exist among individuals with regard to intelligence. Truly speaking, no two individuals, even identical twins or individuals natured in identical environments are endowed with equal intelligence or even mental energy. The assessment of intelligence by various tests has given reasons enough to believe that not only does intelligence vary from individual to individual but it also tends to vary in the same individual from age to age and situation to situation.
Intelligence changes with Age

As the child grows in age, so does the intelligence, as shown by intelligence tests. But where does it stop? The age at which mental growth ceases, varies from individual to individual. It tends to stabilize after the age of 10 and is fully stabilized during adolescence. The idea that intelligence continues to grow throughout life is not strictly true. Since intelligence is basically a function of neurons and neuralgia, its development or deterioration goes hand in hand with the development or deterioration of the nervous system. However, in majority of the cases the growth of a person’s intelligence reaches its maximum sometime between the age of 16 and 20 years, after which the vertical growth of intelligence almost ceases. Horizontal growth i.e. achievements, realization of the intelligence in terms of accumulation of knowledge and acquisition of skills etc., however, may continue throughout an individual’s life. It is, nonetheless, a matter worth probing.

Intelligence and the Gender

So, also whether men are more intelligent than women and vice versa thereby that no significant difference, remains quite a question for deeper probe. Apparently, there seems to be implying difference in sex does not contribute towards difference in intelligence. In fact this has remained as perennial a question as antiquity since the beginning of human life as such.

Intelligence and Racial or Cultural Differences

The hypothesis whether a particular race, caste, or cultural group is superior to another in intelligence has been examined by many research workers particularly, ever since the First World War. In the U.S.A., Europe and Germany, it has been a burning problem for centuries. The results of earlier studies which take the Whites to be a superior race in comparison to the Negroes have been questioned. It has now
been established that intelligence is not the birthright of particular race or group. The bright and the dull can be found in any race, caste or cultural group and the differences if any, which are found, can be the result of environmental factors and other extraneous influences.

**Assessment of intelligence**

Intelligence of an individual can be observed only to the extent that is manifested by him, in his behavior and more, by one or more intelligence tests. Many such tests have been devised by psychologists for the measurement of intelligence. In reference of these, however, the term assessment is preferred because intelligence, being only a concept or an abstraction rather than a substance, it cannot be measured in physical units like a length of cloth or temperature of the body. It can only be assessed to a degree. In this context, Griffiths (1933) observes: “the standard of measurement is a group of performance”. Therefore, when we measure an intelligence by means of an intelligence test, we try to interpret his score in terms of the norms set group performance (by the author of the test). One’s intelligence is thus determined in relation to classified group to which one belongs. Thus, whereas a piece of cloth may be measured in absolute terms, relative measurement or assessment has to be resorted to in the case of intelligence. This assessment is carried out through intelligence tests categorized as individual and group test involving the use of verbal or non-verbal material.

**Biological**

The biological factors that correlate with IQ include ratio of brain weight to body weight and the volume and location of gray matter tissue in the brain. However, the basic mechanisms by which the brain produces complex phenomena such as intelligence are still poorly understood. Studies indicate that general intelligence
"draws on connections between regions that integrate verbal, visual spatial, working memory, and executive processes."

Because intelligence appears to be at least partly dependent on brain structure and the genes shaping brain development, it has been proposed that genetic engineering could be used to enhance the intelligence of animals, a process sometimes called biological uplift in science fiction. Experiments on mice have demonstrated superior ability in learning and memory in various behavioral tasks.

**Environmental Factors**

Evidence suggests that family environmental factors may have an effect upon childhood IQ, accounting for up to a quarter of the variance. Other variance in IQ results from environmental influences not shared by siblings who grow up in the same home. Another important influence on IQ that was often neglected in earlier human genetic studies is the "maternal effect" of the prenatal environment of the mother's womb. There are indications that in middle age intelligence is influenced by life style choices (e.g. long working hours).

Cultural factors also play a role in intelligence.

**Sex difference**

The general use of the intelligence' test reveals that the average scores of the sexes are normally similar.

Many investigations have revealed only very small differences in the average test scores of boys and girls and of men women. Boys and girls are generally similar in intelligence. It is, of course, true that there are more male than female "drop'-outs" in school.
Race differences in intelligence

To eliminate cultural influence, a number of attempts have been made to construct “culture free” or “culture-fair” tests. These tend to be related to nonverbal and performance tests of other intelligence tests, since a culture-free test is necessarily largely nonverbal. In addition to being nonverbal the test must be free of any particular cultural content.

The Cattell Culture-Free Intelligence Test is one attempt to develop a fairer test. General intelligence is assumed to be basically a matter of seeing relationships. It is further assumed that the ability to relationships can be tested with pictorial or diagrammatic material. And the material must not be peculiar to any particular cultural group. Evidence is lacking that the test is truly culture-free or that it is usable in widely different cultures.

Intelligence and aptitudes

Interest in the measurement of aptitude developed shortly after tests of general intelligence appeared. Although the more specialized tests were an outgrowth of job analysis, the areas of measurement soon included talents such as music, art, and different aspects of intelligence, without specific concern for job analysis.

What do intelligence tests measure?

One may be confused about what intelligence tests measure. They do not measure innate or natural ability to learn new behavior. An intelligence test measures present ability-specifically the behavior required by the test at the time the test is given. Thus when people talk about an individual’s intelligence they are referring to that person’s test score (Ausubel & Robinson, 1969)

Rohwer (1971) questions whether a child’s intelligence test score is even an accurate reflection of his learning ability. He states that the confusion over children’s
performances on an intelligence test is based on the faulty assumption that equivalent chronological age implies equivalent learning opportunities. An intelligence test compares what a child has learned over some period of time to what his peers have learned; however not all children of the same chronological age have had an equal opportunity to learn the material tested by an intelligence test. Because of this inequity the teacher who concludes that a student with a low intelligence test score simple “lacks the capacity to learn” is making a serious error in interpreting the meaning of the test score.

**Are Intelligence Tests fair to all students?**

The critics of intelligence tests argue that the tests favor the middleclass over the lower-class child by emphasizing verbal rather than mechanical or social ability. The development of verbal ability is a middle-class preoccupation disadvantaged children will inevitably do poorly on these tests regardless of their innate verbal potential (Ausubel & Robinson, 1969)

Teachers use intelligence test scores consciously or unconsciously to label students as poor. If a teacher notices that a student has a low intelligence test score she will hold a low expectation for his classroom performance and will be less likely to provide remedial instruction for him.

Intelligence test is a basis for discriminatory practices in school especially in the placement of poor and minority children in special classes for mentally retarded or slow students.

**1.1.0 Need and significance of the problem**

Education for the common man is a recent development. In all parts of the world a few hundred years ago education was confined to a selected group of society. The need of education for all was not there. The stage of development of society did not
demand the spread of education for all. Education was considered valuable for
cultural refinement. But with the advance of Science and technology the old basis of
society changed.

In the 19th century the development of Industrial society created conditions for the
spread of education. New investigations in science were done in all fields and
changed the productive process which in turn demanded an entirely new basis of
production relations. In this period technology also developed. The advancement of
science and technology demanded wide spread education. Through advancement of
science and technology new skills were developed. Development of communication
was also based on advancement of science.

The selection of this problem has not been arbitrary. The investigator has been in the
teaching profession for more than 12 years and she always felt that this problem of
academic achievement is vitally connected with our educational system and needs the
attention of psychologists and educationists. The investigator had an opportunity to
administer some intelligence tests to the pupils of secondary school of age group 13 to
16 years and noticed that in every class most of the students had IQ range from 100 to
130 but most of them in spite of average or above average intelligence could not make
progress in their class.

In today’s competitive learning environment it is vital that more holistic approach be
employed to enhance student’s learning and as a result to improve student’s academic
achievement, there is a need to do further research on the topic. In this world of cut-
throat competition, both the students and teachers wish to enhance their academic
achievement. Although a comparative study of all the three variables taken together
have yielded substantial results so far but with continuous change in the educational
environment and better facilities day by day, there seems to be an ever widening need for persistent research on this subject.

1.1.1 Research Questions

This report seeks to answer the following questions:

1. To what extent SES impact the students’ achievement going to secondary school?
2. The government has made available the facilities for girl education. To what extent these have made a difference in academic achievement of the female student?
3. Does the secondary school students achievement is hampered due to their socio economic status?
4. Do the secondary school students differ in their intelligence level? Does this difference in intelligence affect their academic achievement?
5. Is medium of instruction affects the students’ achievement?

Though in this area a lot of research has been conducted but they are not able to answer the above questions.

1.2.0 Statement of the Problem:

The above observation made the investigator interested in studying the academic achievement of secondary school students. The problem is sated as under:

Influence of Socio-Economic Status and Intelligence on Academic Achievement Of Secondary School Students of Lucknow City.

1.3.0 Definitions of the terms used in the study

1.3.1 Academic Achievement

Performance assessment is the process of measuring the terminal behaviors of the students at the end of instruction. It is the job of the teacher to measure whether the students have acquired the component concepts as an achievement before proceeding
with the instruction which arranges these concepts in proper relationship for the learning of the principle. The achievement is the end product of the instruction usually verbal performance.

Operational Definition
For the purpose of the Study, Academic achievement is measured by actual performance in academic tests.

1.3.2 Socio Economic Status
A family's socioeconomic status is based on family income, parental education level, parental occupation, and social status in the community (such as contacts within the community, group associations, and the community's perception of the family), note Demarest, Reisner, Anderson, Humphrey, Farquhar, and Stein (1993).

Operational Definition
For the purpose of the study, the socio economic status of the students is taken to be based on the score of Dr. Meenakshi’s test of SES.

1.3.3 Intelligence
“Intelligence is the ability to solve problems, or to create products, that are valued within one or more cultural settings.” H.Gardner

Operational Definition
Intelligence is taken to be as per the score of the students in the intelligence test by G.C. Ahuja group test of intelligence.

1.3.4 Secondary School Students
Students of Class IX and X of CBSE, ICSE and UP board are considered as secondary school students.
1.4.0 Objectives of the study:

The present study is conducted to attain the following objectives:

1. To study the influence of gender on academic achievement of secondary school students.
2. To study the influence of class on academic achievement of secondary school students.
3. To study the influence of Intelligence on academic achievement of secondary school students.
4. To study the influence of Socio Economic Status on academic achievement of secondary school students.
5. To study the influence of Board of examination on academic achievement of secondary school students.
6. To study the influence of medium of instruction on academic achievement of secondary school students.
7. To study the influence of medium of instruction on intelligence of secondary school students.
8. To study the influence of Gender on Socio economic status score of secondary school students.
9. To study the influence of Gender on Intelligence of secondary school students.
10. To study the relationship between intelligence and Socio Economic status of secondary school students.
11. To see the influence of Socio Economic Status and Intelligence jointly on Academic achievement of secondary school students.
1.5.0 Hypotheses:

Investigator shall take the hypotheses to be Null Hypotheses:

1. There is no significant difference between the Academic Achievement of Male and Female Secondary School Students.

2. There is no significant difference between the Academic Achievement of Class IX and Class X Secondary School Students.

3. There is no significant difference between the Academic Achievement of various categories of Intelligence of Secondary School Students.

4. There is no significant difference between the Academic Achievement of various categories of Socio-economic Status of Secondary School Students.

5. There is no significant difference between the Academic Achievement of Secondary School Students of various boards.

6. There is no significant difference between the Academic Achievement of Hindi Medium and English Medium Secondary School Students.

7. There is no significant difference between the Intelligence of Hindi Medium and English Medium students of Secondary School.

8. There is no significant difference between the Socio-economic Status of Male and Female Secondary School Students.

9. There is no significant difference between the Intelligence of Male and Female Secondary School Students.

10. There is no significant relationship between Intelligence and Socio-economic Status of Secondary School Students.

11. There is no relationship of Socio-economic Status and Intelligence with academic achievement of Secondary School Students.
1.6.0 Delimitation of the problem:

Due to limited time at the disposal of the investigator, it was not possible to include in the sampling each & every school of Lucknow city. The sample consists of 14 secondary schools of Lucknow district.

More precisely the problem has been delimited under the following heads.

1. The sample consists of 614 pupils of 14 secondary schools of Lucknow district only.

2. The variables taken are socio-economic status, intelligence and, academic achievement.

3. The secondary schools affiliated to CBSE Board, ICSE & UP Board have been taken up.

4. The medium of instruction is limited to English medium and Hindi medium secondary schools only.

5. The sample consists of both class IX and class X students of secondary schools.

6. The investigator used Mark sheets from school record for the study. As a primary source of data, Exam Result of 9th & 10th students was taken up.

1.7.0 Variables

1.7.1 Dependent Variables

1. Academic Achievement

1.7.2 Independent Variables

1. Socio Economic Status

2. Intelligence


Research Methodology

1.8.0 Sample of the study
A sample for 614 students was collected comprising of 358 males and 256 females from 14 secondary schools of Lucknow city. The selection of schools was done through purposive sampling.

1.9.0 Method
Keeping in view the nature of the study, the Descriptive survey method was employed.

1.10.0 Tools & Techniques
To furnish the data in detail various suitable and standardized psychological tools were used. By observing the nature of the study the following tools will be preferred.

1 The investigator used G.C. Ahuja Group Test of Intelligence-for assessment of intelligence by Dr.G.C.Ahuja to measure the intelligence.

2 The investigator used Socio-Economic status scale for assessment of Socio Economic Status by Dr. Meenakshi.

3 The investigator used Marksheets from school record for the study. As a primary source of data, Exam Result of 9th & 10th students was taken up.

4 Sampling Technique: Purposive sampling technique is used for collection of the sample.
1.11.0 Statistical techniques

To analyze and interpret the data, Mean, Standard Deviation, ANOVA, t-values, f-value, coefficient of Correlation and multiple correlation are used.
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