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## A Study of Achievement in Mathematics in Relation to Socio-Economic Status of Secondary School Students

\* Dr. Inderjeet Singh Bhatia

**Keywords :** *Achievement in Mathematics, socio-economic status, secondary school etc.*

### Abstract

*The Socio-Economic Status (SES) of families is an important determinant of child learning outcomes. This study was aimed at finding relationship among Achievement in Mathematics and socio-economic status of secondary school students of Indore city. The population of study included secondary school students of Indore city. The sample was selected through multi-stage random sampling technique. The study adopted a descriptive survey design and data was largely descriptive by nature. Data were collected using SES Scale for the students of XII standard. These were administered on a sample of 60 students selected from 02 secondary schools of Indore city. Through SPSS, Pearson's Product Moment Coefficient of Correlation (r) was run to calculate Correlation between Achievement in Mathematics and Socio-Economic Status. Correlation between Achievement in Mathematics and overall SES of students was not significant.*

### Introduction

Lot of studies have been conducted in the area of student achievement and these studies identify and analyse the number of factors that affect the academic performance of the student at school, college and even at university level. Their findings identify students' effort, previous schooling, self-motivation of students, age of student, learning preferences and entry qualification of students as important factors that have effect on student's academic performance in different setting. The past study of BARRY (2008) of Wichita State University revealed that socio-economic factors are also said to be great contributors in the academic performance of many students Education and Mathematics are the both sides of a same coin. One is interrelated with other. The socio-cultural and socioeconomic duo always intermingles with each other. One has no value with other. The common and specific roots of the both social aspects, especially economic connotations are based on mathematics as

subdue fact. Socio-Economic Status (SES) contributes to the physical, economic and social well-being of individuals and families (Sirin, 2005). Children born into poor families face an educational disadvantage both before they enter school and throughout their education, such that SES to a large extent determines educational outcomes, which in turn determine the SES of the next generation (Willms, 2002; Willingham, 2012). Home is the first school of children. Home environment at influences a child's school education with his/her aspirations towards a good citizen for the future. As the children of today will be the nation builder of tomorrow, it is significantly essential to run the children's educational programmes very sincerely and effectively. Through scientific-designed and fruitfully implemented educational programmes children can be made equipped with necessary knowledge, skills and moral values. Family has also an important role in all-round development of the school children. Parents or guardians have to take a great responsibility in promoting societal knowledge, behavioural aspects, attitude etc. The facilities and environments provided to a student to study, is the basis for his success. Socio-economic status can play both positive and negative role in the future life of a student..

### **Academic Achievement**

Achievement of pupil in school may be affected by various factors like intelligence, study-habits, aptitude, interest, attitude towards school, different personality traits, socio-economic status etc. The desire of success is derived from individual's definition of himself and is also measured in terms of various incentives in explaining success and failure in the eyes of theirs. Therefore, a child who sees himself as a top ranking scholar may set his attainment of the highest grade in the class. It had been rightly mentioned that in our society academic achievement more specifically Mathematical Achievement is considered as a key criterion to judge one's total potentialities and capacities. Hence, Mathematical academic achievement occupies a very important place in education as well as in the learning process.

### **Socio-Economic Status (SES)**

The word, socio comes from the word 'social' and refers to people and the ways (level) they fit into the community in which they live. It reflects how well they are educated, have job etc. Economic refers to the financial position of the people within society and include, how much they regularly earn, whether own a house and the assets owned etc. In other words, it is an economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position in relation to others, based on income, education, and occupation. When analysing a family's SES, the household income,

earners' education, and occupation are examined, as well as combined income versus, when their own attributes are assessed. Socioeconomic status is typically broken into three categories, High SES, middle SES, and low SES to describe the three areas a family or an individual may fall into. When placing a family or individual into one of these categories any or all of the three variables (income, education, and occupation) can be assessed. Moreover a 4<sup>th</sup> variable, wealth is also an important component of determining socio-economic status.

### **Review of Literature**

**Carter (2014)**, academic performance measures the amount of academic content a student learns in a determined amount of time. Each grade level has learning goals or instructional standards that educators are required to teach. Nevertheless, quality education can also be affected by many factors.

**Bailey and Dynarski (2011)** found that the imbalance in college completion between high- and low-income students has grown by approximately 50% since that late 1980s. This is cause for concern because college completion is the single most important predictor of success in the workforce, and a strong determinant of subsequent earnings.

"Socio-economic" status (SES) being a background variable signifies social construction in a society (**Oakes & Rossi, 2003**). There are a number of definitions as of SES including "differential access (realized and potential) to desired resources" (**Oakes & Rossi, 2003**), and "a shorthand expression for variables that characterize the placement of persons, families, households, census tracts, or other aggregates with respect to the capacity to create or consume valued goods in our society" (**Hauser & Warren, 1997**). Commonly, SES is supposed to be connected with money and education.

A study conducted on children of Brazil indicated a correlation between success motivation and SES, especially income of the family (**Oakland et.al., 1994**). Moreover, an effect of SES on academic aspirations of students was also reported. Obviously, the importance of studying SES in an educational setting was stressed by the research investigating correlations between "socio-economic" status and success and success-connected variables.

**Amato and Keith (1991)** also studied family and academic success. They conducted a meta-analysis on 92 studies about parental divorce and the well-being of children. The researchers

Found that students of divorced families scored lower than students in intact families across a variety of outcomes. Their findings from the meta-analysis revealed that family conflict strongly influences the relation between family structure and the wellbeing of students.

**According to Cicourel and Kitsuse (1963)**, academic development and interest of the pupil is significantly influenced by counselors, who spend more time and effort helping students go on to college. The students' parents also supported this plan and frequently asked about their children's progress. These parents tended to belong exclusively to the middle and upper social classes.

### **Objectives of the Study**

1. To find out the socio-economic status of family of students at secondary level.
2. To find out the relation between socio-economic status of family and achievement in mathematics of students at secondary level

### **Hypotheses of the Study**

**H1:** There will be no significant relationship between Achievement in Mathematics and Socio-Economic Status.

**H2:** There is no significant correlation between 'socio-economic status' and 'Achievement in mathematics' of students.

### **Research Methodology**

The population of the present study consists of all the secondary level students studying in various secondary schools of Indore city. In the present study the researcher has employed descriptive survey method of research. Descriptive studies are more than just a collection of data they involve measurement and interpretation. The researcher has observed the facts collected data by administering the tests for the variables specified in research work and analysed the data by employing appropriate statistical techniques.

### **Sample and Sample Size**

In the present study, secondary school students from Indore city, was selected as target population to generalize the results. The Sample comprises of 60 (male and female) Secondary Level Students of Indore city. These subjects have been taken from randomly chosen 02 different Schools of Indore city.

## Statistical Tool

### Socio-Economic Status Scale Revised (SES Scale) by T.N. Pan, (2012)

The socio-economic status scale (SES) which was used by researcher was constructed by Prof T.N. Pan. The SES scale was also validated by the author of the scale. The reliability of the scale was estimated with reference to its validity.

### Analysis and Interpretation

**Table No. 01 4.3.2**

Pearson's Product Moment Coefficient of Correlation (r) between Achievement in Mathematics and Socio-Economic Status

Variables	Achievement in Mathematics	Level of Significance
Number of Family Members	0.35*	Significance
Educational Qualification of the Parents	0.41*	Significance
Occupation of the Parents	-0.20*	Significance
Source of Income of the family	0.39*	Significance
Monthly Income of the family	0.38*	Significance
Land Area	0.037*	Not Significance
House Category	0.22*	Significance
Over all SES	0.41*	Significance

\*p < 0.01 level;

Statistical analysis of the data using Pearson's Product Moment Coefficient of Correlation (Table 4.3.2) revealed that different dimensions of Socio-Economic Status (SES) such as Number of Family Members, Educational Qualification of the Parents, Source of Income of the Parents, Monthly Income of the Family, Land Area, House Category as well as the total SES are positively correlated with the secondary level students' Achievement in Mathematics.

Most of the dimensions of SES (except Land Area and Number of Family members) are having statistically significant relationship with Individuals' Achievement in Mathematics, as all the values of co-efficient of correlations are significant at 0.01 level. Land Area as a dimension of SES is not at all related with Individuals' level of Mathematical Achievement. The above table also revealed that the co-efficient of correlation between House Category as a dimension of SES and Achievement in Mathematics is 0.22. Though these variables are positively related to each other, their strength of relationship is significant at 0.01 level. Among all the dimensions of SES only one dimension is negatively related to achievement and that is occupation of the parents. The co-efficient of Correlation between occupation of the parents and achievement in mathematics is -0.20, which is significant at 0.01 level.

## Findings

The students with high socio economic status group is better than the students with low socio economic status group is Achievement in Mathematics.

1. The students of small families are well off than the students of big families with regard to achievement in Mathematics.
2. The students whose parents are highly qualified are better in Achievement in Mathematics.
3. The students whose parents are in secure profession are better in Achievement in Mathematics.
4. The students whose parents are having a fixed and adequate source of income are better in Achievement in Mathematics.
5. The students whose monthly family income is more are comparatively better in Achievement in Mathematics.
6. The students who reside in pucca stable house are better in terms of Achievement in Mathematics.

## Conclusion

Though the world is more mathematically inclined, the majority of students in school feel it as more abstract. The teacher can teach it with the help of modern educational technological devices and more advanced effective methods of teaching, there is a poor performance of the students in the mathematics. But it is found that students' achievements in mathematics at secondary level under Tripura Board of secondary Education are very poor. Hence, there must be some factors like psychological, social and biographical affecting the learner in learning of mathematics at large.

The major thrust of the present research was to study the nature and contributory factors of Achievement in Mathematics of the secondary level students. The study aims to explore the factors that are enhancing as well as deteriorating the Achievement of Mathematics of the students and for this purpose the following important variables have been undertaken Socio- Economic Conditions.

## Suggestions to Parents and Teachers

1. Students with low socio-economic status are comparatively poor in mathematics so students with low socio-economic status should be given special emphasis so that they can overcome the problems in mathematics and can do good results.



2. Students with big families are to be given attention by the family members and the teachers so that they improve their achievement in mathematics.
3. As the parents educational qualification has a role in achievement in mathematics so the teachers of the school should take care those students whose parent's educational qualification is low.
4. Security in parent's occupation has an impact on their children's achievement in mathematics, so those students whose parents occupation is not secured they should be encouraged for good achievement in mathematics.

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