

# Relationship between Parent Involvement and Achievement in Mathematics of Higher Secondary First Year Students in the Coastal Area



Varghese P I, K.B.Jasmine Suthanthira Devi

**Abstract:** Higher Secondary Education stage plays a very significant role in one's life and is a basic stone on which one builds a beautiful castle of future higher education. The present study is to find out how parent involvement influences the achievement in Mathematics of higher secondary first year students in the coastal area of Kerala. The investigator adopted normative survey method for the study. A sample of 100 students of both Government and Aided Higher Secondary Schools was selected by random sampling technique. The statistical techniques such as Percentages and Chi-square employed. The result of the study can be made available to the parents of coastal area so that they can involve themselves in the learning process of their wards.

**Key words:** Achievement in Mathematics, Parent Involvement, Higher Secondary first year students, Coastal Area

## I. INTRODUCTION

### A. Higher Secondary Education

Higher secondary education occupies a prominent place in our educational system. It links the secondary education and higher education. This stage includes XI and XII classes for the age group of 16 to 18. Higher secondary education act as interlink between secondary education and higher education at university level. It is an important stage during which a student makes his/her future studies and vocation. Greater efforts are to be made by the parents and teachers for fostering all sorts of knowledge, skills, attitudes and inculcating good habits so that they may lead successful life as a socially responsible individuals. Higher secondary education is an integral part of school education and this important two year course is diversified into academic and vocational streams. The main objectives are promotion of democratic and secular values, inculcation of scientific temper and humanism, imparting of specialized knowledge and skills that contribute national development and good citizens. The booklet entitled, 10+2+3 : A Major Change in School Education published by the Ministry of Education, Government of India (1975) has categorically pointed out the important features of Higher Secondary Education are as follows-

The national integration, training for democratic living, cooperativeness, cultural and religious tolerance through various subjects namely languages and social sciences. The intellectual development of students has to be achieved by teaching the subjects like Languages, Science, and Social Studies;

Physical, emotional and other aspects are achieved by providing field experience like community service, physical and health education, and other activities. In order to inculcate right attitude towards work, work experience has been introduced. Agriculture, engineering, domestic science, commerce and fine arts are the some areas comes under the work experience. In addition to work experience, suitable activities of community services like village uplift, slum clearance, literacy promotion, etc. may be undertaken by the school.

### B. Mathematics Education

Importance of Mathematics Education in everyday life is well known. The subject Mathematics has miraculous role for the development of all the subjects and directly or indirectly influences continuous progress of all the subjects namely Physics, Chemistry, Biological Sciences, Social Sciences, History, Geography, Fine Arts, Drawing, Agriculture, Engineering, Commerce, Economics, Philosophy, Psychology, Logic, etc. Mathematics is also a very important subject for solving problems of daily life with its fundamental operations of addition, subtraction, multiplication and division.

The Mathematical knowledge is very much required by all people engaged in any walk of life. A person may be an accountant, a housewife, a clerk, a mason, a carpenter, a tailor, a farmer, a driver, a labourer, a salesman, a shopkeeper or a vendor, etc. Application of mathematical knowledge involved in all the activities of human being, to name a few, rates, interest- simple and compound, per cent, discounts, rebates taxes, speed and velocity, cost price, selling price, profit and loss, etc. Mathematics provides a definite way of thinking. Children who study Mathematics develop the attitude with which they learn to work systematically, regularly and properly. Along with this, it also develops logical thinking in them.

Mathematics generates logical thinking. Mathematics gives training to different faculties of mind such as concentration, memorisation, imagination, logical thinking and reasoning with which a child develops his mental abilities and it further effects of his intellectual development.

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Mathematics is an exact science. All mathematical concepts, formulae, facts are related to exactness and thus it removes the feeling of doubt. It plays a significant role in the lives of individuals and the world of society as a whole.

### **C. Parent Involvement**

Parent involvement has emerged as one of today's most important topics in educational circles as a result of psychological studies.

Child needs their parents' true love and skilful guidance in the process of overall development -body, mind and spirit. Parents must understand child's strong and weak areas, his needs, interests, feelings, difficulties in growing up in the process of realizing his best potentialities. Parents more than anybody else influence the development of each child in different way. The main role of the parents is involved in creating a conducive home environment where child develops his attitude towards himself, parents, teachers, others, things, incidents and institutions. . Many studies emphasize the role of parents and family as of great importance in the development of child, both physically and psychologically. Berelson and Steiner (1964) are of the view that opinions, attitudes and beliefs are inherited from one's parents. Rosen (1964) admits that parents transmit the values to their children in several ways explicitly through instruction and selective reinforcement of selective responses, or implicitly through their own behaviour.

Home is the most important agency where role of the parents is vital in transmitting cultural heritage, values and basic living habits. Parent involvement have not only a strong impact on relationships within the family but also affect the attitudes and behaviour of the children. Studies on successful and unsuccessful children in the academic achievement have shown that most of those who became successful in academic achievement had come from homes where parent involvement towards them were favourable and where a wholesome relationship existed between them and their parents. While, those who are unsuccessful in academic achievement possess weak intellectual control, usually come from homes where the parent-child relationships are unfavourable.

Parents and teachers are advised to know the modern trends in the teaching and learning process of Mathematics so that students at home and school are benefited to learn Mathematics without difficulty. They can guide the students in a better way if they know the nature of Mathematics and learning process. They must be caring parents, patient in dealing with their children while learning Mathematics, proficient in communicating mathematical ideas,

They must provide quality Mathematics instruction, know mathematical content, skills, facts and attitudes that children need to attain, take children to the public library to have fascinating and interesting Mathematics books, help the children in solving mathematical problems and assist in reading various mathematical books, encourage the children to calculate compare different types of purchase bills from various shops, involve the children in planning selection of home items, cost and purchases so that they will become self-reliant, independent and confident

### **D. Coastal Area**

Three fourths of the earth's surface is covered by oceans accordingly we have wide range of coastal area in all the

continents and India is not an exemption. The coast is where the land interacts with the sea, it is open to the action of wind, waves and tides. One scientific definition of coast is "the space in which terrestrial environs interact with marine environs and vice versa."

India has a land frontier of 15,200 km and coastline of 7,516.6 km) which projects into southwards and is bounded by the Indian Ocean— on the east the Bay of Bengal, on the west the Arabian Sea, to the southwest the Lakshadweep. Kerala state having total area of 38,863 km<sup>2</sup> is situated between the Arabian Sea to the west and the Western Ghats to the east and total coastal area runs some 580 km in length.

In order to make sure balanced academic development of a country, all areas are to be given equal importance and no exemption to the coastal areas. Coastal areas in Kerala are peculiar in the conditions which are not suitable for the academic growth of children belonging to the families in that area. Coastal areas of Kerala are educationally backward crippled with unsuitable eco-system and majority of the family depend on fishing as a major occupation for their livelihood. The density of population is also a major threat for harmonious development of the community.

There is a wide disparity in the educational status of the people compared to the urban areas. The literacy rate in coastal area is pathetically low. The achievement of the children in the coastal area has not in par with that of the urban area. The Socio Familial Status is very poor in these areas and Parental Involvement in the education of the children is also not sufficient.

## **II. NEED AND SIGNIFICANCE OF THE STUDY**

The subject Mathematics is a base for the subjects including arts and science in the school curriculum. Study of mathematics is helpful in learning most of the school subjects. Mathematics helps us to develop all our intellectual powers like power of concentration, imagination, memorisation, logical thinking and reasoning. It controls all individual and social activities in a systematic manner from dawn to dusk; and leads the role in the process of civilization of any country.

Of course a pupil's learning to a great extent depends upon the kind of support given by the teacher, however parents involvement in his learning process in no way less important than teachers. The parents are most influential people. The home transmits vital attitudes, the basic living habits formed with the interaction of the child, which he meets outside and inside the home. If the child gets parental support, then he or she will work whole heartedly and get success and start the next task with enhanced confidence. Children's readiness to learn will also depend on the extent to which their parents and other adults have been able to give time to them; listening to what they have to say; by asking questions from them: and extending their interest by sharing views with them. Proper study habits established during the academic years have a lasting impact that is carried over into later life. There are many factors which may influence formation of study habits like effective study, reading, observation, concentration, self-confidence, adjustment etc.

If the home co-operates with the school and provide rich learning experiences through books, magazines, newspapers, radio, television and other mass media for communication, it will definitely help in developing good study habits among students and create interest in learning.

Achievement in mathematics is the competency shown by the student in the subject. No doubt, there are differences among the individuals in the achievement in mathematics and these differences may be due to their aptitude in the subject. The incident of large failure in mathematics in higher secondary school examination and in university

examination is of great concern not only to the parents but also to the educators. Sometimes, the parents, due to their overenthusiasm and ambitions force the child to learn mathematics without knowing the aptitude of the child. The child due to lack of aptitude and due to distaste for mathematics gradually develops hatred for the subject and becomes backward in mathematics.

Looking at the importance of higher secondary education in one's life, parent involvement and support in academic achievement – in particular achievement in Mathematics the investigator is inspired to study the topic in the central coastal area of Kerala as no research work of this nature has been done by the previous researchers. Considering all the factors, this study is undertaken to find out the relationship between the parent involvement and achievement in Mathematics of higher secondary first year students in the central coastal area of Kerala.

### III. OBJECTIVES OF STUDY

1. To find out the level of parental involvement of higher secondary first year school students in the coastal area of Kerala.
2. To find out the association between the parental involvement and achievement in mathematics of higher secondary first year school students in the coastal area of Kerala.

### IV. HYPOTHESIS OF THE STUDY

1. There exists a significant association between the parental involvement and achievement in mathematics of higher secondary first year school students in the coastal area of Kerala

### V. METHODOLOGY

Normative Survey Method is used for this study. Sample selected for the study consists of 100 Higher Secondary first year students belonging to coastal areas in Kerala based stratified random sampling technique. Parental Involvement Scale is used as tool. The statistical techniques such as Percentages and Chi-square employed.

### VI. ANALYSIS AND INTERPRETATION

#### Level of Parent Involvement of Higher Secondary First Year Students in the Central Coastal Area of Kerala in Their Study of Mathematics

For identifying the level of Parent involvement in the study of Higher Secondary first year students in the

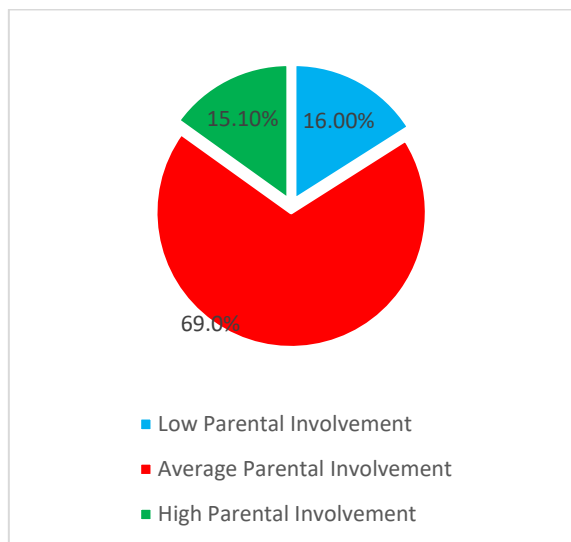
central coastal area of Kerala, investigator classified into the High, Average and Low groups based on their Parent involvement scores in the test. Assuming a normal distribution of Parent involvement scores, the conventional procedure of using sigma distances was used for classifying sample. Considering the baseline of the normal curve representing the distribution extending from  $-3\sigma$  to  $+3\sigma$ , i.e. over a range of  $6\sigma$ ; Higher Secondary students in the central coastal area of Kerala. Whose Parent involvement scores fall between  $M+\sigma$  and  $M-\sigma$  were classified as 'Average-Parent involvement Group' (APIG), Higher Secondary students in the central coastal area of Kerala. Whose scores were below  $M-\sigma$  were classified as 'Low- Parent involvement Group' (LPIG), and Higher Secondary students in the central coastal area of Kerala. Whose scores were above  $M+\sigma$  were classified as 'High- Parent involvement Group' (HPIG). For the distribution of Parent involvement scores, Mean was 74.83 and Standard Deviation was 10.54. Therefore, Higher Secondary students in the central coastal area of Kerala. whose Parent involvement scores were 85 or more (rounded value of  $M+\sigma$ ) were considered to possess 'High Parent involvement', whose scores were less than 64 (rounded value of  $M-\sigma$ ) were considered to possess 'Low- Parent involvement', and the remaining who come in between these scores were classified as of 'Average Parent involvement'. The data and results of the classification done are shown in the Table-I given below.

**Table- I Number and Percentage of Higher Secondary students in The central coastal area of Kerala with respect to the Level of Parent involvement**

Level of Parent Involvement	Frequ ency	Percent
Low Parent Involvement	16	16.0%
Average Parent Involvement	51	51.0%
High Parental Involvement	33	33.0%
Total	100	100.0%

Above table shows that 51% of Higher Secondary students in the central coastal area of Kerala have average level of Parent involvement, 33% have high Parent involvement and 16% have low Parent involvement. The result indicates that majority of students have average level of Parent involvement .it can be shown in figure 1

# Relationship between Parent Involvement and Achievement in Mathematics of Higher Secondary First Year Students in the Coastal Area



For this investigator find out the Level of Parent Involvement and level of achievement in Mathematics of higher secondary first year students in the coastal area of Kerala. The data and results of the classification done are shown in the Table- II given below.

**To find out the association between the parental involvement and achievement in mathematics of higher secondary first year students in the coastal area of Kerala**

**Table- II Number and percentages of Level of Parent Involvement and level of achievement higher secondary school students in the coastal area of Kerala**

		Low Achievement	Average Achievement	High Achievement	Total
Low Parent Involvement	N	2	10	4	16.00
	%	12.50%	62.50%	25.00%	100.00
Average Parent Involvement	N	9	25	17	51.00
	%	17.65%	49.02%	33.33%	100.00
High Parent Involvement	N	6	10	17	33.00
	%	18.18%	30.30%	51.52%	100.00
Total	N	17	45	38	100.00
	%	17.00%	45.00%	38.00%	100.00

$$\chi^2 = 17.10 \text{ p} = 0.002$$

Above table shows that the number and percentages of Level of Parent Involvement and level of achievement higher secondary school students in the coastal area of Kerala. It is clear that 51.52% of the High parent involvement students have High achievement in Mathematics, 30.30% of students have average level of achievement in Mathematics and 18.18% have low achievement in Mathematics.

In the case of low parent involvement 12.5% have Low achievement in Mathematics, 62.50% have average achievement in Mathematics and 25.00% have high achievement in Mathematics. The obtained Chi-square value  $\chi^2 = 17.10 \text{ p} = 0.002$  is significant at 0.05 level of significance that means there exist a significant association between the Level of Parent Involvement and level of achievement in Mathematics of higher secondary first year school students in the coastal area of Kerala. So it can be concluded that

parent involvement depends on the achievement in mathematics

## VII. FINDINGS OF STUDY

1. Three levels of parent involvement is studied and found that 16 per cent low parent involvement, 51 per cent average parent involvement and 33 per cent high parent involvement.
2. In the category of high parent involvement, 51.52 per cent students have high achievement in Mathematics. The students supported by the parents scores higher levels of achievement in Mathematics.

3. The achievement in Mathematics of first year higher secondary students in the coastal area of Kerala depends on the parent involvement in their study.

### VIII. IMPLICATIONS OF THE STUDY

The study reveals that parental involvement in the study process and achievement in Mathematics of higher secondary first year students plays an important role. The findings of the study can be made public so that the concerned parents as well as the Government agencies can take appropriate measures in implementing various educational programmes for the parents to improve their involvement in the teaching learning process of the children. This study is limited to the central coastal area of Kerala and Higher Secondary plus one students and focussed only to study how far achievement in Mathematics influenced by Parent Involvement. This study can be extended to complete coastal line of India as development of the coastal area is as important as other areas. Also other appropriate variables can be integrated in studying the combined effect on achievement in Mathematics.

### IX. CONCLUSION

In the present study, the investigator tried to find out the level of parental involvement in the study of their wards and the association between the parental involvement and achievement in mathematics of higher secondary first year school students in the coastal area of Kerala. The results of the study reveals that there exists a significant association between the level of Parent Involvement and the level of achievement in Mathematics of higher secondary

first year students in the coastal area of Kerala. The country like India having long coastal area needs awareness programme among the parents of this area regarding the importance of parents involvement in the study of their wards so that overall development of all regions of the country is ensured.

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