



# IMPACT OF PARENTAL ENCOURAGEMENT ON ACHIEVEMENT IN MATHEMATICS AMONG SECONDARY SCHOOL STUDENTS OF JAMSHEDPUR, (JHARKHAND)

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## ABSTRACT

Parents support and encouragement is one of the greatest factors in student's academic success. It is more important if the subject is mathematics. The purpose of this study was to explain parent's own experiences with mathematics and how encouragement of parents help in motivation which can help in achieving good scores in mathematics subject. Some factors related to mathematics like understanding of mathematics, importance of mathematics, knowing of mathematics, nature of school practices, parent's competency, parents as resource provider, and parents as motivator. The researcher tried to examine and explain the impacts of parental encouragement and its direct effect on learning or achieving good marks in mathematics. Encouraging and supportive parents keep a check on their children and provide a guiding mechanism for their academics. Consistent interacting with the child and checking directly all problems and doubts improves the academic performance in mathematics. The study was conducted under a mixed type of research design .The study was done on 300 students (sample size). This study was done by using descriptive statistics. Simple random sampling was used for data collection. Field data was analyzed and chi-square test was applied to check the relation between Parental encouragement and support and academic performance in mathematics. Result of the research highlighted that there is a significant association between students who showed remarkable performance in mathematics, parents were more encouraging and supportive as compared to those who were less encouraging and supportive.

**(Keywords: Parents, encouragement, learning, mathematics, guiding, motivator)**

## INTRODUCTION

Enhancing the educational success of all students is a vital educational goal, one which has received considerable public attention. Therefore, it is critical to identify impact factors that promote academic success and the pathways through which they operate. Parents play a vital role in their children's education. Especially, studies have shown that children have higher achievement if their parents are more involved in their education. It is well known that educating children is a very complex process that demands the collaborative efforts of both parents and schools. Parents support and encouragement is one of the greatest factors in student's academic success. It is more important if the subject is mathematics. Mathematics achievement can be considered to be the vital factor that contributes to the excellence of the education sector. Encouraging and supportive parents keep a check on their children and provide a guiding mechanism for their academics. Consistent interacting with the child and checking directly all problems and doubts improves the academic performance in mathematics. Thus, it is necessary to explore the domain-specific relations between students' mathematics performance and parental involvement.

We know that each individual learning style is different and unique as a signature. We know now that education is child centered as we can see a shift from teacher emphasis to student emphasis. Every student has its own learning style.

Mathematics is the subject which needs little more focus and attention compared to other subjects in understanding the concepts. Its language is also different. It can be taken as a means for developing student's creativity. Mathematics as subject is also rich in situations and problems which can give direction to students to find new different solutions for them. Mathematics aims at developing mental abilities, discipline, accuracy, moral values, and also creativity. Mathematics trains students to criticize situations objectively. Although parents encouragement can be seen for academic achievement but is it motivating to achieve high in mathematics. There is a long history of studying parental encouragement in academic gain but now the question is this really helping in mathematics achievement? This depends on the parent child communication. Personal efficacy will also affect the behavior of the child. This study will expand understanding of the nature of involvement in students' mathematical learning by explaining the influences of mothers' perceptions and beliefs toward mathematics through expectancy-value and attribution theories. The role that parental involvement may play in influencing children's mathematics achievement indirectly through mathematics self-efficacy. Specifically, this research answers the following questions:

1. What are the parent's personal experiences in learning mathematics?
2. What are parent's role or level of encouragement and support that influence in child's mathematics learning?

### PURPOSE OF THE STUDY:

The researcher aims to find the role of parents in learning mathematics in normal home environment and to examine and identify relationship between parents and students learning mathematics. Researcher also aims to find the attitude of both child and parents towards learning mathematics. Questionnaire was designed and given to parents in which different levels of parents support like motivator, monitoring, providing resources, guiding etc. Those parents who returned the questionnaire were great motivator and had positive attitude towards their child's learning mathematics.

### STATEMENT OF THE PROBLEM

The proposed study is entitled as **“IMPACT OF PARENTAL ENCOURAGEMENT ON ACHIEVEMENT IN MATHEMATICS AMONG SECONDARY SCHOOL STUDENTS OF JAMSHEDPUR JHARKHAND”**

## LITERATURE REVIEW

Once we have decided on a research area/topic we would like to study, and have formulated a research question, we need to review the literature on that topic. A literature review is a critical summary of all the published works on a particular topic. Conducting a comprehensive literature review is an essential step in research and publication. Review is most often associated with the research, dissertation, and thesis. The aim of literature review is to bring the researcher up to date with current literature on topic and forms basis for another goal that is the future research that may be needed in the area.

Following literature was reviewed for the proposed study:

- According to Steven O. Robert it was said that parental involvement is typically classified as deliberate acts of engagement. These acts are found to have a profound effect on children's academic achievement.
- Parents thoughts and believes about themselves as parents are different. Parents differ in terms of their ideas about their role in their child's learning .[ICEMST2014: International conference on Education in mathematics, science& technology]
- Motivation plays a vital role in achieving one's ends. It acts as a catalyst in an endeavor. It is shaped up with many internal and external factors in academia. [By Ajit Mondal in University News A weekly Journal of higher education ISSN 0566-2257 ,Association of Indian Universities January 2020]
- 'Problem parents' and 'problem teachers' are also the very important causes, which may motivate the students to adopt problematic behavior. [Dr. S.P, Kulshrestha Educational Psychology, Chapter-Exceptional Children]

Johnson- 'Motivation is the influence of general pattern of activities indicating and directing the behavior of the organism' Chapter –Motivation and learning, Dr. S. P Kulshrestha, Psychology

- Factors that influence learning : Motivation, encouragement, Proper orientation, Student's desire, instructor's attitude [Dr. S.P. Kulshrestha , chapter Fundamentals of teaching]
- The aspiration level of the families and their desire to help children do well at school in the regional language go a long way in Influencing the children [Language across the curriculum by Ranjana Pandey , Chapter-10 multilingual classroom: Challenges and strategies]
- The relationship between student's mathematics achievement and social influence: Parental involvement, teacher support, and peer influence. [By Liu, Xingfeiyue ]
- The best predictor of student success is the extent to which families encourage learning at home and involve themselves in their child's education .[How Parent involvement Leads to Student success, 2018,www.waterford.org ]
- Findings indicate that parent involvement as a form of social capital was generally a salient indicator for explaining the mathematics achievement of the Caucasian students. [Journal of educational research, Wenfan Yan and Qiuyun Lin [www.jstor.org/stable/27548119](http://www.jstor.org/stable/27548119)]
- If schools are to be successful in raising levels of parental engagement in children's learning, and in turn raising levels of children's attainment, it is essential that we gain an understanding of how parents construct their role. [ Research Article by Tim Jay, Jo Rose, Ben Simmons ]

## RESEARCH QUESTIONS

Following four questions are formulated for finding the impact of parental encouragement on mathematics achievement by secondary school students of Jamshedpur:

1. Do parents support or have concern or any kind of encouragement for their child's achievement in one very special subject mathematics?
2. What happens when there is no care, support, or encouragement from parent's side and its effect on child's math's achievement?
3. Does the achievement in mathematics vary because of the variation of medium of instruction language and child's home language?
4. What is the level of parent's encouragement that helps the children to achieve remarkable not only in academic but also in mathematics?

## OBJECTIVES OF THE STUDY

The main objectives of the study are:

1. To find the level of parental encouragement of secondary school students.
2. To find the significant difference in parental encouragement and achievement in mathematics of secondary school students with respect to gender, locality, and type of school, and medium of instruction.
3. To find out the relationship between parental encouragement and achievement in mathematics of secondary school students.

## SIGNIFICANCE OF THE STUDY

There is a great significance of this study as parental support is the fundamental factor for future orientation of a child. Educated and literate parents give more encouragement to their children. Some parents give more encouragement and some give less encouragement to their children. Home is basically a unit in which parents and children live together. The parents should show real interest towards child's future. A little support from the parent side can change their child's future.

## HYPOTHESES

Hypothesis 1: There is no association between gender and encouragement by parents.

Hypothesis 2: There is no significant association between encouragement and performance.

Hypothesis 3: There is no association between gender and performance.

## RESEARCH METHODOLOGY

Research methodology is a systematic way of solving the research problems. The research methodology provides all the necessary tools and techniques and materials which are relevant for the problem. It is a science of studying how research is to be carried out. It describes the procedure of describing, explaining, and finding predictions are called research methodology.

## RESEARCH DESIGN

Qualitative approach is followed as well as Quantitative. So it will be a mixed type of approach. Data will be collected from past reports and also from interview, surveys, observation and questionnaire as tools of data collection. It will be a descriptive type of research. The research will be cross sectional.

## SAMPLING DESIGN

It will comprise of Government and private secondary school students of Telco, Jamshedpur. The Population for the present study was limited to the schools of Jamshedpur. The researcher selected the students from class 9. It is assumed that children at this age and class have much better mental understanding and capacity that of lower class students.

## DATA COLLECTION METHOD

Data collected by random selection method observation, survey, taking interview, and by questionnaire filled by the students, teachers and parents. For the data collection from schools both males and females were selected. Simple random sampling technique was used. Lottery method was used for selection of schools. Based on this 5 schools were chosen. Total 60 from each school and 30 male and 30 female students were chosen.

## DATA ANALYSIS: TOOLS AND TECHNIQUE

After reviewing the literature, a questionnaire was designed. Closed ended questions were included in the questionnaire related to their personal information. The data was analyzed. The Chi square test was applied to test the significance of the relation between independent variable (Parents encouragement or support in mathematics) and the dependent variable (level of children's academic achievement in mathematics). Percentage analysis and **comparison of mean.**

## RESULT AND DISCUSSION:

### Hypothesis testing 1: t Test

*H<sub>0</sub>: There is no significant association between gender and encouragement by parents.*

*H<sub>a</sub>: There is significant association between gender and performance.*

### Observation and calculation:

**Table 1**

Gender	Encouraged	No. of students	Proportion
Male	120	150	0.80
Female	110	150	0.73
Pooled proportion	230	300	0.77

Alpha value is 0.05, z value is 1.365, p value is 0.17 df is 1

than 0.05 hence the researcher accepts null hypothesis

p value is more

**1. Hence there is no significant association of gender and encouragement. It means encouragement by parents is independent on gender of students**

Chi square test was conducted to find out significance of encouragement with performance .where

Excellent means student has got more than 90%, Good means student has got 70-90% satisfactory means student has got 40-70% and unsatisfactory means less than 40% marks in mathematics

Hypothesis

***H<sub>0</sub>: There is no significant association between encouragement and performance.***

***H<sub>a</sub>: There is significant association between encouragement and performance***

Observed value					
	Excellent	Good	satisfactory	unsatisfactory	Total
Encouraged	80	70	40	40	230
Not Encouraged	2	8	40	20	70
Total	82	78	80	60	300

Table 2

Expected					
	Excellent	Good	Satisfactory	unsatisfactory	
Encouraged	62.87	59.8	61.3	46	230
Not Encouraged	19.1	18.2	18.6	14	70
Total	82	78	80	60	300

(O-E) <sup>2</sup> /E				
	Excellent	Good	Satisfactory	Unsatisfactory
Encouraged	0.0257	1.73	7.42	0.78
Not-Encouraged	15.34	5.71	24.38	2.57

Chi-Square value is 57.98, p value is 0.0, df is 3, Since p value is less than 0.05, we reject null hypothesis and accept alternate hypothesis.

**2. Result: Hence there is significance of encouragement on performance. It means students who are encouraged by parents are likely to get good marks than who are not encouraged by parents.**

Chi square test was conducted to find out significance of Gender on performance

Hypothesis

*H0: There is no significant association gender on performance.*

*Ha: There is significance association of gender on performance.*

Table 5

Observed					
	Excellent	Good	satisfactory	unsatisfactory	Total
Females	37	40	40	33	150
Male	45	38	40	27	150
Total	82	78	80	60	300

Table 6

Expected					
	Excellent	Good	Satisfactory	unsatisfactory	Total
Females	41	39	40	30	150
Male	41	39	40	30	150
Total	82	78	80	60	300

Table 7

Gender	Excellent	Good	Satisfactory	Unsatisfactory
Female	0.019	0.025	0	0.3
Male	0.39	0.025	0	0.3

Chi Square value: 1.061

Degree of freedom: 3

p value : 0.79

Since p Value is greater than  $\alpha$  level (0.05) so we accept null hypothesis

**3. Result: Hence there is no significant association of gender on performance. It means performance is independent on gender of the students.**

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