

Research Paper

Level of Academic Achievement in Mathematics among Higher Secondary School Students

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ABSTRACT

The Aim of this study is to find out the Level of Academic Achievement in Mathematics among Higher Secondary School Students. The Sample of the study was selected by using Random Sampling technique which includes 1050 Higher Secondary School Students in Chennai. Normative Survey Method was used to collect data. Percentage analysis was the Statistical Technique used. Study reveals that there exists a Moderate Level of Academic Achievement in Mathematics among Higher Secondary School Students with respect to their Personal Variables (Gender, Single Parent, Single Child, Type of Family, Parents Education, Parents Occupation and Monthly Income of the Family) and School related Variables (Board of Affiliation, Subject Group, Type of the School and School Management). Based on the results, it was recommended that the Mathematics Teachers should increase their Students' Interest in Mathematics by using moderately difficult task. If the mathematics problem is too easy, it will be boring or embarrassing and may communicate the feeling that the teacher doubts their abilities; a too-difficult problem will re-enforce low self-efficacy. The target for difficulty is slightly above the students' current mathematics ability level. The Students need to be encouraged to develop their Interest in Mathematics as they have a role in keeping the Mathematics Marks in check.

Keywords: *Academic Achievement in Mathematics, Higher Secondary Students, Percentage Analysis, Interest, Self-Efficacy, Personal Variables and School related Variables*

Mathematics Achievement may be defined as “a product which can be measured by means of achievement test” (Van den Aardweg, 1988). It is the amount of knowledge and skills acquired after certain instruction or training in the related subject. Reber (1985) has explained achievement as “accomplishment or the attaining of a goal.” Teaching of all the subjects starts with some instructional aim and goal. These aims are achieved after the teaching of certain content of that subject.

According to Oxford Advanced Learners' Dictionary of Current English, “achievement is the success gained by effort and skill”.

Mathematics achievement means the amount of knowledge attained in Mathematics after the instruction or study. It is the score obtained by the students on mathematics achievement test.

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Chaman (2014) in a study 'Factors influencing mathematics achievement among secondary school students: A review' have found that mathematics achievement is influenced by a range of factors including mathematics self-concept, mathematics anxiety, attitude towards mathematics, mathematics self-efficacy, parental involvement, teachers, peers and gender. Thus, there are numerous factors which can affect mathematics achievement of students. Intelligence, Teaching effectiveness, Mathematics anxiety, Mathematics self-efficacy, peer grouping, quality of teachers, Interest in Mathematics and Attitude towards mathematics are some of the well-known constructs which may affect mathematics achievement of the students.

Operational Definition of the Key Term

Academic Achievement in Mathematics

Academic Achievement in Mathematics refers to the mathematics marks secured in the Board Exam.

Objectives of the Study

To find out the Level of Academic Achievement in Mathematics among Higher Secondary School Students with respect to

- Gender
- Board of Affiliation
- Subject Group
- Single Parent
- Single Child
- Type of Family
- Type of School
- School Management
- Education of the Father
- Education of the Mother
- Occupation of the Father
- Occupation of the Mother
- Monthly Income of the Family

METHODOLOGY

The present study focuses on the Level of Academic Achievement in Mathematics of Higher Secondary School Students. Normative Survey method was used for the present study.

Sample of the Study

1050 Higher Secondary School Students were selected randomly from Government, Government Aided and Private schools in Chennai.

Sampling Technique

Simple Random Sampling technique was adopted to select the sample.

Statistical Techniques

Data were collected from higher secondary school students on the following variable. Academic Achievement in Mathematics is subjected to statistical analysis. Analysis was categorized under Percentage Analysis.

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DATA ANALYSIS AND INTERPRETATION

Level of Academic Achievement in Mathematics with respect to the Entire Sample

The Level was calculated for the Academic Achievement in Mathematics with respect to the Entire Sample and the same is given in Table 1.

Table 1 Level of Academic Achievement in Mathematics of Higher Secondary School Students

VARIABLE	LOW		MODERATE		HIGH	
	N	%	N	%	N	%
Academic Achievement in Mathematics	245	23.3	603	57.4	202	19.2

The above table reveals that 57.4% of Higher Secondary School Students have Moderate Level of Academic Achievement in Mathematics.

Level of Academic Achievement in Mathematics with respect to the Personal Variables

The Level was calculated for the Academic Achievement in Mathematics with respect to the Personal Variables and the same is given in Table 2.

Table 2 Level of Academic Achievement in Mathematics with respect to Personal Variables

PERSONAL VARIABLES	CATEGORY	ACADEMIC ACHIEVEMENT IN MATHEMATICS					
		LOW		MODERATE		HIGH	
		N	%	N	%	N	%
Gender	Boys	113	10.8	257	24.5	82	7.8
	Girls	132	12.6	346	33.0	120	11.4
Single Parent	Yes	34	3.2	55	5.2	10	1.0
	No	211	20.1	548	52.2	192	18.3
Single Child	Yes	18	1.7	69	6.6	30	2.9
	No	227	21.6	534	50.9	172	16.4
Type of Family	Joint	44	4.2	140	13.3	55	5.2
	Nuclear	201	19.1	463	44.1	147	14.0
Father's Education	Uneducated	43	4.1	57	5.4	13	1.2
	School Level	163	15.5	349	33.2	76	7.2
	College	39	3.7	197	18.8	113	10.8
Mother's Education	Uneducated	42	4.0	67	6.4	13	1.2
	School Level	166	15.8	349	33.2	76	7.2
	College	37	3.5	187	17.8	113	10.8
Father's Occupation	Daily Wages	143	13.6	176	16.8	24	2.3
	Private	53	5.0	188	17.9	88	8.4
	Government	11	1.0	64	6.1	32	3.0
	Self-Employed	38	3.6	175	16.7	58	5.5
Mother's Occupation	Home Maker	170	16.2	449	42.8	146	13.9
	Daily Wages	44	4.2	31	3.0	7	0.7
	Private	17	1.6	70	6.7	34	3.2
	Government	5	0.5	24	2.3	12	1.1
	Self-Employed	9	0.9	29	2.8	3	0.3
Monthly Income of the Family	Below 10,000/-	94	9.0	146	13.9	22	2.1
	10,000/- to 20,000/-	96	9.1	207	19.7	64	6.1
	20,000/- to 30,000/-	29	2.8	101	9.6	39	3.7
	Above 30,000/-	26	2.5	149	14.2	77	7.3
Total		245	23.3	603	57.4	202	19.2

Level of Academic Achievement in Mathematics among Higher Secondary School Students

The above table reveals that more than half of the Higher Secondary School Students has Moderate Level of Academic Achievement in Mathematics with respect to Personal Variables.

Level of Academic Achievement in Mathematics with respect to the School-related Variables

The Level was calculated for the Academic Achievement in Mathematics with respect to the School-related Variables and the same is given in Table 3.

Table 3 Level of Academic Achievement in Mathematics with respect to School related Variables

SCHOOL RELATED VARIABLES	CATEGORY	ACADEMIC ACHIEVEMENT IN MATHEMATICS					
		LOW		MODERATE		HIGH	
		N	%	N	%	N	%
Board of Affiliation	State	210	20.0	357	34.0	48	4.6
	CBSE	35	3.3	246	23.4	154	14.7
Group of Study	Mathematics	136	13.0	305	29.0	134	12.8
	Business Maths	109	10.4	298	28.4	68	6.5
Type of School	Boys	54	5.1	95	9.0	11	1.0
	Girls	76	7.2	145	13.8	26	2.5
	Co-Education	115	11.0	363	34.6	165	15.7
School Management	Government	117	11.1	89	8.5	10	1.0
	Aided	66	6.3	179	17.0	27	2.6
	Private	62	5.9	335	31.9	165	15.7
Total		245	23.3	603	57.4	202	19.2

The above table reveals that more than half of the Higher Secondary School Students has Moderate Level of Academic Achievement in Mathematics with respect to School-related Variables.

Delimitations of the Study

- The population of the study was confined to Higher Secondary School Students only.
- Due to time constrain the study was limited to 1050 samples only.
- The Study was confined to only 42 schools in the Chennai District.
- The Study was delimited to Government, Government-Aided, and Private Schools only.

CONCLUSION

The present study reveals that the Level of Academic Achievement in Mathematics is Moderate in Nature. Hence, efforts have to be taken by the Teachers and Parents to reduce the Mathematics Anxiety among the students. The Students need to be encouraged to develop their Interest in Mathematics as they have a role in keeping the Mathematics Marks in check.

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Conflict of Interest

The author(s) declared no conflict of interest.

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