

NINTH STANDARD STUDENTS' ATTITUDE TOWARDS MATHEMATICS ON ACADEMIC ACHIEVEMENT IN PUDUKKOTTAI DISTRICT

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ABSTRACT

This study intended to find out the nature of the relationship existing between the IX standard students' perceived mathematics achievement and attitude towards mathematics. The study was conducted on a sample of 300 students who are studying in IX standard. It also aims to find out whether there is any significant difference between the variables of achievement of mathematics and attitude towards mathematics. The investigator adopted the descriptive survey method. At the same time, it also aims at finding out if there is any significant difference between any two subsamples, taken at a time, in respect of their achievement and attitude. There is no significant difference between IX standard students in their academic achievement of mean scores of mathematics with reference to gender and students' residence. There is a significant correlation between the academic achievement and attitude towards the mathematics of IX standard students. Even though the 'r' is positive, the relationship is negligible.

Keywords: Attitude, Mathematics, Academic Achievement.

Introduction

The attitude of students toward mathematics has been the subject of a great deal of attention from educators. Students with a positive attitude toward mathematics tend to enjoy the subject, understand its value, and have confidence in it; thus, they are likely to prioritize the study of mathematics, which could lead to high performance in the same. Although several researchers have reported a positive relationship between students' attitudes toward mathematics and mathematics achievement. The central aim of all formal educational efforts is academic achievement, on the part of the students. Moreover, in some cases, the students are forced to seek academic education, due to the over-enthusiasm and ambition of the parents. Such students do not pursue education with one essential will and year, which enables them to have a negative attitude towards academic achievement. Lack of proper guidance at the right moment hinders the interest, aptitudes, abilities and capacities of an individual. All these problems have contributed to the development of negative attitudes towards education and effects on academic performance.

Academic Achievement

Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in the instructional environment, specifically in school, college, and university. School systems mostly define cognitive goals that either apply across multiple subject areas (e.g., critical thinking) or include the acquisition of knowledge and understanding in a specific intellectual domain (e.g., numeracy, literacy, science, history). Therefore, the academic achievement should be considered to be a multifaceted construct that comprises different domains of learning. Crow and Crow, 1969 defined academic achievement as the extent to which a

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learner is profiting from instructions in the given area of learning (i.e.) achievement is reflected by the level at which skill and knowledge have been imparted to him. Academic achievement also indicates the knowledge attained and skills developed in the school subject, generally designed by test scores.

Mathematics

Mathematics is a fundamental part of human thought and logic and integral to attempts at understanding the world and ourselves. Mathematics provides an effective way of building mental discipline and encourages logical reasoning and mental rigour. In addition, mathematical knowledge plays a crucial role in understanding the contents of other school subjects such as science, social studies, and even music and art. For a student, living can be a mystery, but math provides amazing solutions to all problems. Studying mathematics allows you to understand the world better and it is the "universal language", meaning it is the one language in the world that is universally understood across different cultures, countries, and languages.

Attitude

Attitude is the belief that one has towards people and surroundings. In the case of education, students' positive attitude may influence their academic achievement. A student with a good attitude is likely someone who has a cooperative spirit in terms of complying with what they are asked to do by the teacher. It is essential to mention that attitude is considered a psychological construct. There are three main components of an attitude and they are cognitive, affective, and intentional. The cognitive aspect of an attitude refers to what beliefs a student has about a person or object. The affective component relates to feelings a student has towards a person or object. Lastly, the intentional component addresses the intentions a person has towards a person or object. Naturally, there is some overlap in these components. If a student has negative beliefs about something, it is probable that they have negative feelings as well.

Ninth Standard Students

The ninth standard is the ninth year of school education in some school systems. These students are usually 14 -15 years old. students need to know what courses are available based on their choice of a stream (right in Class 9th). If students explore and decide to pursue a course in Class 9th itself then, it will be easier for them to plan their higher learning. For example, if a student wants to select the Science stream, they should know the possible career options available in this stream apart from engineering and medical science. Moreover, based on their course preference, they would be able to know which subjects to perform better for pursuing a course.

Need and Importance of the Study

Mathematics is considered to be an abstract subject. Many students find it very difficult to score good marks in mathematics. Because nature of learning mathematics is needing logical thinking and mental effort, which in turn is the factor for stress. Mathematics provides an effective way of building mental discipline and encourages logical reasoning and mental rigour. In addition, mathematical knowledge plays a crucial role in understanding the contents of other school subjects such as science, social studies, and even music and art.

Second, knowledge competence is highly required for an individual who wishes to pursue higher studies, research, or any other professional pursuit. Poor achievement in mathematics would undoubtedly deter the progress of an individual. Hence, the investigator wanted to find out some of the factors, which influence achievement in mathematics. Hence, the present study is a humble attempt by the investigator to find out the Attitude toward Mathematics on Academic Achievement.

Statement of the Problem

The present study is entitled "Ninth Standard Students Attitude towards Mathematics on Academic Achievement in Pudukkottai District".

The Objective of the Study

- To find out the significant difference between IX standard students in their academic achievement with reference to (i) gender and (ii) students' residence.
- To find out the significant difference between IX standard students in their academic achievement with reference to parents' annual income.
- To find out the significant difference between IX standard students in their mathematics attitude with reference to (i) gender and (ii) students' residence.

- To find out the significant difference between IX standard students in their mathematics attitude with reference to parents' annual income.
- To find out the relationship between academic achievement and mathematics attitude towards IX standard students.

Hypotheses of the Study

There is no significant difference between IX standard students in their academic achievement with reference to (i) gender and (ii) students' residence.

There is no significant difference between IX standard students in their academic achievement with reference to parents' annual income.

There is no significant difference between IX standard students in their mathematics attitude with reference to (i) gender and (ii) students' residence.

There is no significant difference between IX standard students in their mathematics attitude with reference to parents' annual income.

There is no relationship between academic achievement and mathematics attitude towards IX standard students.

Method of Study

The descriptive survey method was used in the study.

Sample of Study

The sample consisted of 300 students of government, government-aided, and matriculation IX standard.

Tools Used in the Study

- Attitude towards mathematics.
- Academic achievement test in IX standard Mathematics constructed by the researcher.

Statistical Technique Used in the Study

Mean, Standard Deviation, t-Test, F-Test, and Correlation were used in the study.

Testing the Hypotheses

• Hypothesis No. 1

There is no significant difference between IX standard students in their academic achievement with reference to (i) gender and (ii) students' residence.

This hypothesis was tested using a t-test.

Table 1

Sub-Samples		N	Mean	S. D	SE _D	't'-Value
Gender	Male	125	24.0400	2.7573	0.3161	0.434
	Female	175	24.1771	2.6168		
Students Residence	Urban	165	24.1091	2.6733	0.3107	0.078
	Rural	135	24.1333	2.6816		

The above first part of the table shows that the computed value of 't' 0.434 is less than the critical value of 1.96 at 0.05 level and hence it is not significant. Consequently, the first part of the null hypothesis is not to be rejected and it can be said that there is no significant difference between IX standard students in their academic achievement with reference to gender.

The above second part of the table shows that the computed value of 't' 0.078 is less than the critical value of 1.96 at 0.05 level and hence it is not significant. Consequently, the second part of the null hypothesis is accepted and it can be said that there is no significant difference between IX standard students in their achievement with reference to students' residence.

• Hypothesis No. 2

There is no significant difference between IX-standard students in their academic achievement with reference to parents' annual income.

This hypothesis was tested using the 'F' test.

Table 2

Source of Variation	Sum of Squares	df	Mean-Variance of Squares	'F' value	Level of Significance
Between groups	1.614	2	0.807	0.112	NS
Within groups	2134.066	297	7.185		
Total	2135.680	299			

The above table shows that the computed value of 'F' 0.112 is less than the critical value of 3.03 at 0.05 level and hence it is not significant at 0.05 level. Consequently, the null hypothesis is not to be rejected and it can be said that there is no significant difference between IX standard students in their academic achievement with reference to parents' annual income.

- **Hypothesis No. 3**

There is no significant difference between IX standard students in their mathematics attitude with reference to (i) gender and (ii) students' residence.

This hypothesis was tested using a t-test.

Table 3

Sub-samples		N	Mean	S. D	SE _D	't'-Value
Gender	Male	125	84.6640	11.2729	1.2968	0.294
	Female	175	85.0457	10.7894		
Students Residence	Urban	165	84.4303	11.0950	1.2717	0.797
	Rural	135	85.4444	10.8446		

The above first part of the table shows that the computed value of 't' 0.294 is less than the critical value of 1.96 at 0.05 level and hence it is not significant. Consequently, the first part of the null hypothesis is not to be rejected and it can be said that there is no significant difference between IX standard students in their academic achievement with reference to gender.

The above second part of the table shows that the computed value of 't' 0.797 is less than the critical value of 1.96 at 0.05 level and hence it is not significant. Consequently, the second part of the null hypothesis is accepted and it can be said that there is no significant difference between IX standard students in their academic achievement with reference to students' residence.

- **Hypothesis No. 4**

There is no significant difference between IX-standard students in their mathematics attitude with reference to parents' annual income.

This hypothesis was tested using F-test.

Table 4

Source of Variation	Sum of Squares	df	Mean-Variance of Squares	'F' value	Level of Significance
Between groups	58.088	2	29.044	0.240	NS
Within groups	35966.059	297	121.098		
Total	36024.147	299			

The above table shows that the computed value of 'F' 0.240 is less than the critical value of 3.03 at 0.05 level and hence it is not significant at 0.05 level. Consequently, the null hypothesis is accepted and it can be said that there is no significant difference between IX standard students in their maths attitude with reference to parents' annual income.

- **Hypothesis No. 5**

There is no relationship between academic achievement and mathematics attitude towards IX standard students.

This hypothesis was tested using Karl Pearson's Product Moment Coefficient of Correlation.

Table 5

Correlations		
	Achievement in Mathematics	Attitude
Achievement in Mathematics	1	0.218**
Attitude	0.218**	1

The above table shows that the computed value of 'r' (0.218) is greater than the critical values of 0.148 at the 0.01 level and hence, it is significant. Consequently, the null hypothesis is to be rejected and it can be said that there is a relationship between academic achievement in mathematics and maths attitude toward IX standard students. Even though the value of 'r' is positive, the relationship is negligible.

The Finding of the Study

- There is no significant difference between IX standard students in their academic achievement with reference to gender.
- There is no significant difference between IX standard students in their academic achievement with reference to students' residence.
- There is no significant difference between IX standard students in their academic achievement with reference to parents' annual income.
- There is no significant difference between IX standard students in their attitude towards mathematics with reference to gender.
- There is no significant difference between IX standard students in their attitude towards mathematics with reference to students' residence.
- There is no significant difference between IX standard students in their attitude towards mathematics with reference to parents' annual income.
- There is a significant correlation between academic achievement and attitude towards the mathematics of IX standard students. Even though of the 'r' is positive, the relationship is negligible.

Conclusion

This study indicates that the mean score of achievement in mathematics slightly differs between male and female students. Which denotes that there is only a very small difference between rural and urban students. There is no significant difference in the mean scores of achievements in mathematics with reference to parents' annual income. There is a positive correlation between mathematics achievement and attitude towards mathematics among the IX standard students.

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