John Foundation Journal of EduSpark **ISSN 2581-8414 (Print)**
International Journal of Multidisciplinary Research Studies **ISSN 2582-2128 (Online)**

MATHEMATICAL ANXIETY AMONG HIGH SCHOOL STUDENTS

By

***Liyona, D. L., & **Beena Florence Donark, R. J.**

**M.Ed. Student, Bethlahem College of Education, Karungal, Kanyakumari District, Tamil Nadu, India.*
***Associate Professor, Bethlahem College of Education, Karungal, Kanyakumari District, Tamil Nadu, India.*

Abstract

In the present study, the investigator has attempted to study the mathematical anxiety among high school students using a random sampling technique. The sample selected for the study comprised 300 high school students from eleven schools of Kanyakumari District. Statistical technique like the t-test was used to analyse the data. The findings revealed a significant difference in mathematical anxiety among high school students based on gender and the locality of their institution. It is also revealed that there exists no significant difference in the mathematical anxiety among the high school students with regard to the medium of instruction and the nature of the family.

Keywords: *mathematical anxiety, high school, students, and random sampling.*

Introduction

Mathematical anxiety is a negative emotional reaction to mathematics that is increasingly recognized in psychology and education. It is a feeling of tension and anxiety that deteriorates the performance in mathematics. Mathematical anxiety is defined as an inconceivable dread of mathematics that can interfere with manipulating numbers and solving mathematical problems within a variety of everyday life and academic situations. Mathematics anxiety can cause feelings of mild tension to a strong fear of mathematics. These negative feelings towards mathematics significantly influence the learner's ability to perform well and also his aspiration to learn mathematics continuously. Excessive anxiety results in low self-esteem and poor academic performance.

Need and Significance of the Study

Anxiety has been regarded as one of the most important affective factors

that influences problem-solving ability. It is an obstacle to developing our reasoning power. The influence of mathematics is more in our daily lives. It helps in analytical thinking, quickens our mind, generates practicality, and can be applied in our day-to-day life. It develops the ability to think and to find the solutions. Mathematics is fundamental in the education of children. It teaches them to think. Mathematics can greatly affect a child's success throughout their education and their adult life. Since mathematics is connected to so many professional and personal practices, it is important that educators and parents help children to overcome their mathematical anxiety so that they can learn the mathematical skills that they need to succeed. This anxiety is real, and it can happen to anyone at any age regardless of their mathematical ability. Millions of adults are blocked from professional and personal opportunities because they fear or perform poorly in mathematics. These negative experiences remain throughout their adult lives. Today, the society requires a greater need for mathematics. In this study high school students are the target group to check the mathematical anxiety. Therefore, the investigator felt it was necessary to study "Mathematical Anxiety among the High School Students."

Title of the Problem

The problem is stated as "Mathematical Anxiety among the High School Students."

Objectives of the Study

The objectives of the study are as follows:

1. To find out whether there is any significant difference in the mathematical anxiety among the high school students with regard to gender.

2. To find out whether there is any significant difference in the mathematical anxiety among the high school students with regard to the medium of instruction.

3. To find out whether there is any significant difference in the mathematical anxiety among the high school students with regard to nature of family.

4. To find out whether there is any significant difference in the mathematical anxiety among the high school students with regard to locality of institution.

Hypotheses

1. There is no significant difference in the mathematical anxiety among the high school students with regard to gender.

2. There is no significant difference in the mathematical anxiety among the high school students with regard to the medium of instruction.

3. There is no significant difference in the mathematical anxiety among the high school students with regard to nature of family.

4. There is no significant difference in the mathematical anxiety among the high school students with regard to the locality of institution.

Method Adopted for the Present Study

The method adopted for the present study is the survey method.

Population

The population of the study consists of high school students of Kanyakumari district.

Sample

The sample consists of 300 high school students of Kanyakumari district.

Tools Used

The tool used for the present study was mathematical Anxiety Scale constructed and validated by the investigator and the guide.

Establishing Validity and Reliability

(a) Validity of the tool

The item validity was already found by doing item analysis. It was also carefully analyzed by the guide. Some alterations were made according to their suggestions. Thus, the content validity of the tool was established.

(b) Reliability of the tool

The reliability of the tool was established by the split-half method using the spearman prophecy formula. This was done by collecting the scores

on the odd items of the test (1, 3, 5, 7 & so forth) against the even items (2, 4, 6, 8, & so forth).

The coefficient of reliability was calculated by using the following Spearman's Brown prophecy formula.

$$r = \frac{2r}{1+r}$$

The reliability value of the scale was found to be 0.541.

Analysis of Data

Hypothesis 1: There is no significant difference in the mathematical anxiety among the high school students with regard to gender.

Table 1. Difference in the mathematical anxiety among the high school students with regard to gender

Variable	Gender	N	Mean	SD	t-Value	Remark at 5% level
Mathematical anxiety	Male	155	69.89	11.729	3.443	S
	Female	145	65.23	11.681		

(S- Significant)

It is inferred from the above table that the calculated t-value is greater than the table value at the 5% level of significance. Hence, the null hypothesis is rejected. It shows that there is a significant difference in the mathematical anxiety among the high school students with regard to gender.

Hypothesis 2

There is no significant difference in the mathematical anxiety among the high school students with regard to medium of instruction.

Table 2. Difference in the mathematical anxiety among the high school students with regard to medium of instruction

Variable	Medium of instruction	N	Mean	SD	t-value	Remark at 5% level
Mathematical anxiety	Tamil	44	64.59	12.278	1.845	NS
	English	256	68.16	11.798		

(NS- Not Significant)

It is inferred from the above table that the calculated t-value is less than the table value at the 5% level of significance. Hence, the null hypothesis is accepted. It shows that there is no significant difference in the mathematical anxiety among the high school students with regard to medium of instruction.

Hypothesis 3

There is no significant difference in the mathematical anxiety among the high school students with regard to nature of family.

Table 3. Difference in the mathematical anxiety among the high school students with regard to nature of family

Variable	Nature of Family	N	Mean	SD	t-value	Remark at 5% level
Mathematical anxiety	Nuclear	251	67.17	12.068	1.545	NS
	Joint	49	70.04	10.907		

(NS- Not Significant)

It is inferred from the above table that the calculated t-value is less than the table value at the 5% level of significance. Hence, the null hypothesis is accepted. It shows that there is no significant difference in the

mathematical anxiety among the high school students with regard to the nature of family.

Hypothesis 4

There is no significant difference in the mathematical anxiety among the high school students with regard to locality of institution.

Table 4. Difference in the mathematical anxiety among the high school students with regard to locality of institution

Variable	Locality of Institution	N	Mean	SD	t-value	Remark at 5% level
Mathematical anxiety	Rural	153	67.82	11.797	0.262	NS
	Urban	147	67.46	12.077		

(NS- Not Significant)

It is inferred from the above table that the calculated t-value is less than the table value at the 5% level of significance. Hence, the null hypothesis is accepted. It shows that there is no significant difference in the mathematical anxiety among the high school students with regard to locality of institution.

Findings and Discussions

There is a significant difference in the mathematical anxiety among the high school students with regard to gender. Female students have less anxiety towards mathematics than male students. This may be due to the fact that female students develop positive attitudes and work hard towards mathematics, which automatically influences their aptitude and achievement.

There is no significant difference in the mathematical anxiety among high school students with regard to medium of instruction. This may be due to the fact that both Tamil and English medium high school students have the

common understanding ability and both students followed the same type of syllabus and methods.

There is no significant difference in mathematical anxiety among high school students with regard to nature of family. This may be due to the fact that in both joint and nuclear families the elders of the family teach the art of learning fundamental mathematical operations by their daily experiences.

There is no significant difference in mathematical anxiety among the high school students with regard to locality of institution. This may be due to the fact that locality of institution is not the factor that triggers mathematical anxiety among high school students. High school students from both rural and urban areas experience the same level of mathematical anxiety.

Conclusion

Mathematical anxiety is very real and occurs among thousands of people. Much of this anxiety happens in the classroom due to the lack of consideration of different learning styles of students. Today, the needs of society require a greater need for mathematics. Math must be looked upon in a positive light to reduce math anxiety. Therefore, teachers must re-examine traditional teaching methods, which often do not match students' learning styles and skills needed in society. Lessons must be presented in a variety of ways. For instance, a new concept can be taught through playacting, cooperative groups, visual aids, hands-on activities and technology. As a result, once young children see math as fun, they will enjoy it, and the joy of mathematics could remain with them throughout the rest of their lives.

References

****

Amaravathi, D. (2015). The impact of anxiety in language learning on academic performance of ninth standard students. *EduTracks, 14*(8), 31-35.

Anthonyraj, S. J. (2018). A comparative study of the levels of anxiety among Tribal students from urban and rural backgrounds. *New Frontiers in Education*, *51*(4), 46-50.

James, A. (2005). Techniques of mathematics, New Delhi: Neelkamal Publications.

Kaur, M., & Amp Sood, S. (2014). Study of Anxiety among Adolescent students. *New Frontiers in Education, 47*(3), 3-8.

Rani, K. V. (2013). A study on the relationship between examination anxiety and adjustment of prospective teachers. *New Horizons in educational research*, *5*(2), 67-74.

To cite this article

****

Liyona, D. L., & Beena Florence Donark, R. J. (2025). Mathematical Anxiety among High School Students. *John Foundation Journal of EduSpark, 7*(3), 24-31.

****

ABOUT THE AUTHORS

Liyona, D. L. *completed her Master's Degree in Education in 2023 under Tamil Nadu Teachers Education University, Chennai, Tamil Nadu, India. She also holds a Master's Degree in Mathematics from Manonmaniam Sundaranar University, Tirunelvelli, Tamil Nadu, India. She has participated in and presented papers at various national-level seminars and workshops.*

Beena Florence Donark R. J. *is working as an Associate Professor at Bethlahem College of Education, Karungal, affiliated with Tamil Nadu Teachers Education University, Chennai, Tamil Nadu, India. She holds Master's Degrees in Zoology and Education from Manonmaniam Sundaranar University, Tirunelvelli, Tamil Nadu, India. She completed her Doctorate in Education in March 2018 under Tamil Nadu Teachers Education University, Chennai. She has participated in and presented papers at various national-level seminars and has published articles in national-level journals.*

****