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Maths Anxiety In Relation To Achievement In Mathematics Among Secondary Students

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Abstract

Math anxiety is caused by poor test grades, inability (or unwillingness) to complete difficult assignments, negative predispositions of parents, and even the mathematics teacher. Teachers and parents that are afraid of mathematics pass that on to their students and children (Furner & Duffy, 2002). It could be very difficult for students to like mathematics when their parents did not do well in mathematics themselves, and thus do not understand it or do not think it is important. Students could see their parents as having a job and doing well without a great love for mathematics and think that they will be successful without an appreciation of mathematics as well. So, with the intention of this, the investigator intended to carry out the present study on relationship between maths anxiety and achievement in mathematics among secondary students. The data were collected from 300 IX standard students from Government and Private schools in Coimbatore District using Maths Anxiety Questionnaire adopted from Amutha Wilcy Thangam (2011). The simple random sampling method was adopted to select the sample. The collected data were analyzed using descriptive analysis and correlation. The study concludes that there is no significant relationship between maths anxiety and achievement in mathematics among secondary students Coimbatore District.

Keywords: Maths Anxiety, Achievement in Maths, Secondary Students, School Education.

1 INTRODUCTION

Math anxiety is caused by poor test grades, inability (or unwillingness) to complete difficult assignments, negative predispositions of parents, and even the mathematics teacher. Teachers and parents that are afraid of mathematics pass that on to their students and children (Furner & Duffy, 2002). It could be very difficult for students to like mathematics when their parents did not do well in mathematics themselves, and thus do not understand it or do not think it is important. Students could see their parents as having a job and doing well without a great love for mathematics and think that they will be successful without an appreciation of mathematics as well. If the teacher does not value mathematics, his students certainly cannot be expected to value mathematics either. There are many things the mathematics teacher can do that will provoke his students to dislike mathematics. The teacher may be perceived as not caring about students because he is unwilling to give extra help to students who need it. The students need to know that their teacher is able and willing to help them. The teacher may become angry or frustrated when his class does not understand the problems. The teacher may also have unrealistic expectations of his students. Covering the textbook problem by problem can turn students of from learning mathematics. Also, giving written work every day, insisting there is only one correct way to complete a problem, and

assigning mathematics problems as punishment for misbehavior can cause students to dislike mathematics (Furner & Duffy, 2002). No one enjoys discipline. Making students do mathematics as a form of discipline could very likely cause students to dislike mathematics.

2 NEED AND SIGNIFICANCE OF THE STUDY

In the modern world, mathematics is being increasingly used in science, technology, industry, education, economics, etc. With the use of computers and other devices, there is more emphasis on mathematics. Though the world is more mathematically inclined, the students in schools feel it is more abstract. The teaching of mathematics is a challenge to teachers because of its wide utility in all developmental programs of mankind. This shows not only the importance of learning mathematics but also the need for revolutionizing the teaching of mathematics in schools. Though the teachers can teach the subject with the help of modern educational technology and more advanced, effective methods of teaching, the students continue to fare badly in the subject. Hence, there must be some psychological factors like aptitude, attitude towards mathematics, mathematical creativity, test anxiety, and interest, and also social factors like gender, type of a school, cultural back ground etc. influencing the learner in learning mathematics. Math anxiety is described as "feelings of tension and anxiety that interfere with the manipulation of mathematical problems in a wide variety of ordinary life and academic situations" (Richardson and Suinn, 1972). Studies indicate that math anxiety is found in elementary students (Jackson and Leffingwell, 1999; Steele and Arth, 1998), in high school students (Hembree, 1990; Jackson and Leffingwell, 1999), and in college students (Bitner, Austin, and Wadlington, 1999; Tobias, 1990).

It is well known to all that in National competition examinations like IIT, CAT, MAT, Medical Entrance examinations, AICTU, AIIMS, GATE, SSC, UPSC, NDA Kendriya vidyalaya students are showing excellent performance in mathematics comparing to state board school students. The investigator want to find out why the state board school students are not able to perform in par with other board students even though both are from same locality and getting equal quality of education and belonging to same age group. The reasons behind this difference and improve the state board school performance equal and bring out better out come.

3 LITERATURE REVIEW

Khasawneh, E., Gosling, C. & Williams, B. (2021) has aimed to identify the facilitators and barriers of maths anxiety in university students. A scoping review methodology was used in this study. **Barroso, C et. al. (2021)** has presented meta-analysis was to provide an update of the math anxiety-math achievement relation and its moderators. The relation was significant for all moderator subgroups, with the exception of the relation between math anxiety and assessments measuring the approximate number system. **Monika Szczygie (2021)** presents the results of cross-sectional and longitudinal studies conducted among early school-aged children on the cognitive mechanism whereby math anxiety impairs math achievement.**Soumen Chandra Kundu & Susanta Kar (2018)** has studied the Mathematics anxiety and its relationship with the achievement of secondary school students. The study employed descriptive survey method .The Sample of the study were 310 students of the 10 the grade selected from Purulia district in West Bengal. The correlation test showed a significant and negative relationship between student's mathematics achievement and their mathematics anxiety.

4 RESEARCH DESIGN OF THE STUDY

Since the objective of the study is to find out the relationship between maths anxiety and achievement in mathematics among secondary students, it needs to adopt survey method. The data were collected from 300 9th standard students from Government and Private schools in Coimbatore District using Maths Anxiety Questionnaire adopted from Amutha Wilcy Thangam (2011). The simple random sampling method was adopted to select the sample. The collected data were analyzed using descriptive and correlation test.

5 RESULTS AND INTERPRETATIONS

Hypothesis – 1: There will be a significant relationship between Maths Anxiety with its dimensions and Achievement in Mathematics among the selected IX Standard students.

Table – 1: Mean, standard deviation and r-values between Maths Anxiety with its dimensions and Achievement in Mathematics among the selected IX Standard students.

Table 1: Dimensions of Maths Anxiety and their Correlation with Achievement in Mathematics

Dimensions	N	M	SD	Correlation (r)	p-value	Achievement in Math (M, SD)
Confusion	300	19.29	5.42	.047	.421	74.85, 16.10
Fear	300	11.14	4.11	.008	.887	74.85, 16.10
Physical	300	34.82	8.98	.011	.853	74.85, 16.10
General	300	13.76	5.06	.043	.461	74.85, 16.10
Anxiety (Total)	300	79.02	21.00	.029	.622	74.85, 16.10

Table 1 shows the relationship between Maths Anxiety with its dimensions and achievement in mathematics among the selected IX standard students. According to the table, the calculated r-values are not significantly correlated with each other. Hence, hypothesis 1 is rejected. Further, it can be said that there is no relationship between Maths Anxiety and Achievement in Mathematics among the selected IX Standard students

6 FINDINGS AND CONCLUSIONS

Based on the results of the present study, it is found that there is no significant relationship between Maths Anxiety and Achievement in Mathematics among the selected IX Standard students. Hence, it is concluded that the variable maths anxiety does not influence the achievement in mathematics among the selected 9th standard students.

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