



A Study of the Interests in Mathematics of Secondary Level Students of West Bengal

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ABSTRACT

Mathematics is one of the most important and major subjects at secondary level. Mathematics has a very important role in modern education and it also plays a crucial role in the economic and social development of the country. The present paper focuses on the comparisons of secondary students in terms of their gender and area of residence. Descriptive survey method is used in this study. The data for the present study has been collected from 100 secondary students (50 boys and 50 girls) of both rural and urban areas using simple random sampling technique. For collecting data from sampled secondary students Math Interest Inventory by Gabrielle Marie Snow has been used. According to result analysis of the present study, it is found that maximum percentage of students show high interest in Mathematics and there is no significant difference of mathematics interest between boys and girls and also between students of rural and urban areas.

Keywords: Mathematics, interest, secondary students.

1. Introduction

Mathematics has an important part of learning of children from old days because it provides vital life skills. National Policy on Education (2020) has also emphasized the importance of Mathematics in School Education. Therefore, Mathematics is a core subject for school student. One of the main goals of mathematics education is to foster a lifelong interest and belief in the subject. Interest and enthusiasm are the definite way to teach easily and effectively. Interest is the key factor in achieving success in learning. It plays a vital role in learning. Mathematical interest is characterised as a student's desire to learn mathematical activities, as evidenced by solving problems, studying, and participating in mathematics activities as a leisure activity. Interest refers to the motivating force that impels us to attend a person, or a thing or an activity or it may be the activity itself. Interest is a motivational process to energize the learning which leads to essential academic success. Interest is closely related to drivers, motives, and emotional responses (Sharma, 2014). Merriam Webster (n.d.) defines interest as "a feeling of concern or curiosity about or desire to be involved with something". Interest is an unique motivational variable, as well as psychological state that occurs during interactions between persons and their objects of interest, and is characterized by increase attention, concentration and affect (i.e. feeling) as well as relative enduring pre disposition re-engage with particular content such as objects, events, ideas and tasks.

Mathematics is a well-established and proven key to unlock the infinite potential of human mind to create new conceptual structures and to discover existing ones. Mathematics is a science of space, numbers, magnitude, measurement and logical reasoning. It involves conversion of abstract concepts into concrete form (Kulshrestha, 2014). Mathematics can develop in the child varied mental capabilities such as logical thinking, reasoning power, systematic examination of facts and analytical approach leading to discovery or solution of a problem (Kulshreshtha, 2008). So, in this complex world, importance of

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mathematics cannot be neglected or overlooked. Any person ignorant of mathematics will be at the mercy of others and may be cheated. Mathematics helps students to build mental discipline and also encourages logical reasoning.

1.1. Review of Related Literature

Ainley (2006) described interest as an affective state that refers to the subjective experience in learning. In this study, interest defined as students' affective state of being engaged in mathematics learning and students enjoyed the learning process. Chavan (2017) in his study "Improvement of Mathematics Interest" concluded that Mathematics interest of male and female student teachers are same and the Mathematics Interest enhancement programme was effective. Frenzel et al. (2010) conducted a study on "Development of Mathematics Interest in German Adolescents: Influences of Gender, Family and School Context" and reported that girls had lower mathematics interest than boys. Lazarides (2012) carried out a study on "Mathematics Interest and Achievement: What Role Do Perceived Parent and Teacher Support Play? A Longitudinal Analysis" and found that structural equation modelling showed a positive effect of perceived parental school support on students' interest in mathematics. Sharma (2011) conducted a study on "Mathematical Interest of VIII Standard Students: A Comparative Study" and found that there was no significant difference between boys and girls on the variable of mathematical interest and also rural and urban area Students did not show any significant difference on mathematical interest.

1.2. Objectives of the Study

1. To find out the differences in interests in mathematics of secondary level students with regard to their gender.
2. To find out the differences in interests in mathematics of secondary level students with regard to their area of residence.

1.3. Hypotheses of the Study

H₀₁ There is no significant difference in interests in mathematics between male and female students of secondary level.

H₀₂ There is no significant difference in interests in mathematics between rural and urban students of secondary level.

1.4. Methodology of the Study

Method: For measuring the Mathematics interest of secondary level students, descriptive survey method is used.

Population and Sample of the Study: The population for this study is the secondary level Mathematics students of West Bengal. The data has been collected from 100 Mathematics students (50 boys and 50 girls) of both rural and urban areas from four different schools of Burdwan, Bankura and Kolkata districts of West Bengal using simple random sampling technique.

Tool Used: For the present study Math Interest Inventory (MII) by Gabrielle Marie Snow (2011) has been used to measure the mathematics interest of secondary level students.

Procedure of Data Collection: For the collection of data a prior permission has been sought from the school principals. The investigator has explained the purpose of present study to the students. The subjects have been assured that their responses and information given about them will be kept confidential and it will be used for research purpose only. After assurance the Mathematical Interest Inventory has been given to the students.

Statistical Technique Used: The collected data has been analyzed using SPSS and t test has been used to find out the difference between two groups.

2. Results and Discussions

Testing of H₀₁:

Table 1. Descriptive statistics along with 't' value for secondary level students of boys and girls with regard to interests in mathematics

Pair of Comparison	N	Mean	S.D	Mean difference	df	Calculated t value	Critical value	't'	Remarks
Boys	50	97.44	8.40	0.40	98	0.212	1.99 (0.05) & 2.63 (0.01)		Not Significant
Girls	50	97.84	10.29						

Table 1 shows that the mean of interests in mathematics for boys and girls students of secondary level are 97.44 and 97.84 respectively with mean difference 0.40. The standard deviations are 8.40 and 10.29 respectively. The calculated 't' value is 0.212 which is less than that of critical 't' value for the degree of freedom 98. So, the calculated 't' value is not significant at 0.01 level of significance. Result revealed that there is no significant difference exists between boys and girls students of secondary level with regard to interests in mathematics. So, the null hypothesis "There is no significant difference in interests in mathematics between boys and girls students of secondary level" is retained.

Testing of H₀₂:

Table 2. Descriptive statistics along with 't' value for secondary level students of rural and urban areas with regard to interests in mathematics

Pair of Comparison	N	Mean	S.D	Mean difference	df	Calculated t value	Critical value	't'	Remarks
Rural	50	98.28	8.32	2.70	98	1.136	1.99 (0.05) & 2.63 (0.01)		Not Significant
Urban	50	95.58	14.59						

Table 2 shows that the mean of interests in mathematics for rural and urban students of secondary level are 98.28 and 95.58 respectively with mean difference 2.70. The standard deviations are 8.32 and 14.59 respectively. The calculated 't' value is 1.136 which is less than that of critical 't' value for the degree of freedom 98. So, the calculated 't' value is not significant at 0.01 level of significance. Result revealed that there is no significant difference exists between rural and urban students of secondary level with regard to interests in mathematics. So, the null hypothesis "There is no significant difference in interests in mathematics between rural and urban students of secondary level" is retained.

3Major Findings of the Study

The results of the present study showed that most of the students have high mathematics interest. Mathematics interest of both male and female students is same. No significant gender difference has been observed in terms of interest in mathematics. Students of urban and rural areas also show equal interest in mathematics. No significant difference has also been observed in terms of interest in mathematics.

4. Conclusions

The above findings show that the influence of gender and area of residence in the interest of students in mathematics does not have any differential effect. This may be because now-a-days rural areas are developed in education and in all the facilities such as (electricity, transport, school buildings and modern facilities like television, radio etc.). Mathematics is the main subject of school curriculum. It develops many skills among children. Results of the present study demonstrated that mathematical interest among children is high. They are very much interested in mathematics. Also, no significant difference has been observed between boys and girls, and between rural and urban area students in terms of mathematical interest. The findings of the present study

suggested that teachers and parents should take care of interest of students in mathematics for their better achievement. Students should be provided with equal and more facilities to increase their mathematical interest.

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