Research Paper Education

Study of the Impact of Mathematical Interest on Reasoning Ability Among CBSE Secondary Class Students

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ABSTRACT

This study was conducted to find out the impact of interest in mathematics on reasoning ability among secondary school students. The sample consisted of 120 CBSE school students from Barnala district of Punjab state. Mathematical Interest Inventory and Reasoning Ability Test were used to collect data. The statistical techniques were used the Mean, Standard-Deviation, t-test and Pearson's Product Moment Method of Coefficient of Correlation. The result showed that there exists no significant difference in mathematical interest of CBSE Urban and Rural students.

KEYWORDS Interest in Mathematics, Reasoning-Ability and CBSE school students.

INTRODUCTION

Civilized people have always recognized mathematics as an integral part of their cultural heritage. Mathematics is the oldest and most universal part of our culture, in fact, for we share it with the entire world and it has roots in the most ancient of times and the most distant of lands. Many people think mathematics is a difficult subject to study. However, there a few who like it and even create fun in it. The good thing is that all of them accept that it is a very useful subject because of its utilitarian nature especially in science and technology. A lot of people talk about mathematics but very few do mathematics. You will hear members of the public complaining about poor mathematics performance and even blame teachers and the ministry responsible for education for not taking appropriate measure to solve the problem. Interest attention and learning all are quite matter, dependent interest is said to be the mother of attention and attention is the mother of learning. Therefore if one wants to learn something he should try to catch hold from the very beginning the grand mother is the interest. It is equally true for the learning of mathematics. In a mathematics class a teacher should try to inculcate sufficient interest in his classroom teaching so that the subject mathematics may not be treated as dull, tiresome and difficult. Cohen, Martin Paul (2008) This study tested the existence of a positive relationship between interest and problem-solving ability when problems were set in the area of interest among secondary-school students. Results showed that it was not possible to predict the type (context) of problem on which a student will be most successful based on a knowledge of the student's interests alone, nor on knowledge of the student's interests and arithmetical reasoning ability. Hidi (2011) Studying entitled "Interest and Its Contribution as a Mental Resource in Learning" stated that our preference in processing certain types of information is determined by our interest most of the time. She continued that our interest can also affect our cognitive functions and learning. She proposed that there is a huge difference in psychological and physiological processes when the information received is interesting or not. Study is an essential in everyday life .When we have to make a decision in a surrounding that is new to us or when the decision refer to contact that is unknown we tend to relate to similar past experiences to find an answers. This distinguishing feature of mathematical is called mathematical reasoning, reasoning that makes use of the structural organization by which the parts of mathematics are connected to each other and not just to the real world object of our experience, as when we employ mathematics to calculate some practical result. Munn:"Reasoning is combining past experiences is order to solved by more reproduction of earlier solution." Diaynostica (2000) study on working memory capacity explain reasoning ability and a little bit more and suggest that specific working memory resources as opposed to general capacity are the limiting factors for corresponding counterparts in the structure of mental abilities . Manger and Rolf (2010) study on reasoning and academic performance in this study found that belonging to classes with a numerical majority of boys or girls did not affect the achievement of the either roxes. A. Yenilmz and Sungur. S (2011) study of revealed statistically significant mean different b\w students at high and low formal levels with respect to achievement, and stepwise multiple regression analysis revealed that reasoning ability, prior knowledge and gender were significant predatory of students achievements in photo synthesized reparation plants explaining 41% of the variance 997 the variance.

JUTIFICATION OF THE STUDY

Education is very important to everyone to lead a successful life. Every person develops likes and dislikes for things or activities within his field of experience. These likes and dislikes have a definite effect on his behavior. He tends to avoid anything that he dislikes and to seek whatever he likes. The students who develop a dislike for a subject will tend to avoid it and subject whom he likes will tend to learn more and more. The teacher knows the interest of pupils towards different subjects. Mathematics is an essential not only for education but also very useful in day today life. Now a day's student's interest is going down and down. If the students keep interest in mathematics then automating they have high level of reasoning. We can say that interest in mathematics and reasoning ability related to each other. So, Investigator felt need study the reasoning ability and interest in mathematics.

STATEMENT OF THE PROBLEM

STUDY OF THE IMPACT OF MATHEMATICAL INTEREST ON REASONING ABILITY AMONG SECONDARY CLASS STUDENTS

OBJECTIVES

1. To study the difference between mathematical interest of CBSE boys and girls.
2. To study the difference between mathematical interest of CBSE urban and rural.
3. To study the difference between in reasoning ability of CBSE boys and girls.
4. To study the difference between in reasoning ability of CBSE urban and rural.

HYPOTHESES

1. There exists no significant difference in mathematical Interest of CBSE Boys and Girls.
2. There exists no significant difference in mathematical Interest of CBSE Urban and Rural students.
3. There exists no significant difference in reasoning ability of CBSE Boys and Girls.
4. There exists no significant difference in reasoning ability of CBSE Urban and Rural students.

DELIMITATION OF THE STUDY

1. The study was limited to only 120 students.
2. The study was limited to CBSE board schools only.
3. The study was limited to Urban and Rural.
4. The study was limited to Barnala district only.

METHOD AND SAMPLE OF THE STUDY

The method of the present study was descriptive survey. The sampling of the present study was consisted of 120 student of CBSE high school students of Barnala district out of which was randomly selected from urban and rural boys and girls school.

STATISTICAL TECHNIQUES TO BE USED

Mean, S.D. S.ED. and 't'- ratio were computed.

TOOLS USED

1. Mathematical Interest Inventory by L.N.Dubey
2. Reasoning Ability Test by Sadhna Bhatnagar(1985)

HYPOTHESIS 1

Variable	N	Mean	S.D.	$S.E_{D.}$	't' Value	Level of Significance
CBSE Boys	60	31.50	4.78	1.69	0.88	Insignificant
CBSE Girls	60	30	9.57			

The t-value between the mean score of mathematical interest of CBSE Boys and Girls is found to be 0.88. The degree of freedom (df) is 118 at 0.05 levels the table value 1.98 is greater than the calculated value is 0.88. Therefore it is insignificant at this level, at 0.01 level the table value 2.63 is greater than the calculated value 0.88.Therefore,"There exists no significant difference in mathematical interest of CBSE Boys and Girls." Is Accepted

HYPOTHESIS 2

Variable	N	Mean	S.D.	$S.E_{D.}$	't' Value	Level of Significant
CBSE Urban Students	60	32.55	8.39	1.55	0.54	Insignificant
CBSE Rural Students	60	31.25	8.59			

The t-value between the mean score of mathematical interest of CBSE Urban and Rural students is found to be 0.54. The degree of freedom (df) is 118 at 0.05 levels the table value 1.98 is greater than the calculated value is 0.54. Therefore it is insignificant at this level, at 0.01 level the table value 2.63 is greater than the calculated value 0.54.Therefore,"There exists no significant difference in mathematical interest of CBSE Urban and Rural students." is Accepted.

HYPOTHESIS 3

Variable	N	Mean	S.D.	$S.E_{D.}$	't' Value	Level of Significance
CBSE Boys	60	12.58	2.75	0.53	1.09	Insignificant
CBSE Girls	60	12	3			

The t-value between the mean score of reasoning ability of CBSE Boys and Girls is found to be 1.09. The degree of freedom (df) is 118 at 0.05 levels the table value 1.98 is greater than the calculated value is 1.09. Therefore it is insignificant at this level, at 0.01 level the table value 2.63 is greater than the calculated value 1.09.Therefore,"There exists no significant difference in reasoning ability of CBSE Boys and Girls." is Accepted.

HYPOTHESIS 4

Variable	N	Mean	S.D.	$S.E_{D.}$	't' Value	Level of Significance
CBSE Urban Students	60	22.42	3.92	0.37	7.95	Significant
CBSE Rural Students	60	19.48	2.62			

The t-value between the mean score of reasoning ability of CBSE Urban and Rural students is found to be 7.95. The degree of freedom (df) is 118 at 0.05 levels the table value 1.98 is less than the calculated value is 7.95. Therefore it is significant at this level, at 0.01 level the table value 2.63 is less than the calculated value 7.95.Therefore,"There exists no significant difference in reasoning ability of CBSE Urban and Rural is Rejected.

MAJOR FINDINGS

1. There was no significance difference in Mathematical interest of CBSE boys and girls.
2. There was no significance difference in Mathematical interest of CBSE urban and rural students.
3. There was no significant difference in reasoning ability of CBSE Boys and Girls.
4. There was significant difference in reasoning ability of CBSE Urban and Rural students.

CONCLUSION

In the light of analysis and interpretation of the data following conclusions were drawn from sample taken in the present study: There was no significant difference in mathematical interest and reasoning ability of CBSE students. It was also found that there is no significant difference in mathematical interest and reasoning ability of boys and girls.

SUGGESTIONS FOR FURTHER STUDY

1. The present study confined only to one subject that is Mathematics. Its scope can be extended to other subjects also.
2. Another area, which may be taken up for research may be to construct a standardized inventory to find out the performance of students in Mathematics subjects.
3. The investigator restricted the study to 120 students. A large number of samples can be taken.
4. The present study is confined to the schools of barnala district only. The area of investigator can be broadened to make the sample more representive. It can be studied at district, state or national level also.

EDUCATIONAL IMPLICATIONS

In our county, the teachers teach through calk and talk method. If they teach the students by using different methods like Inductive- Deductive, Experimental, Problem-solving, method etc. then this will be helpful in developing logical, concrete thinking and interest in mathematics among students.The present study is also helpful for present to perform their duties towards their children properly. The dealing of parents with their children should be co-operative and friendly. In such an environment, the children will maintain their good and sound health and interest in mathematics of students also increases in such environment.The main role of education is to develop an understanding to manage the interest in mathematics and to develop reasoning ability in difficult situations.

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