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Attitude of Secondary School Students towards the Subject Mathematics in Relation to Different School Boards in Cooch Behar District of West Bengal

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Abstract

Mathematics is a compulsory subject up to class X in every board of Indian school education system. The attitude towards mathematics is one of factors for learning mathematics. The present study projected to find out the attitude of secondary school student towards the subject Mathematics in CoochBehar district of West Bengal, India. The study was conducted on a sample 200 tenth standard students. A Mathematics Attitude Scale (MAS- IAKT), was used for the study in 10 different schools in CoochBehar district, from them five are State Board schools and other five are CBSE School. The study was conducted to find out the significant different of attitudes towards Mathematics in relation to gender, locality and Board students. The investigator had adopted the normative survey method and random sampling technique was used. The results shows that the secondary school, there is significance difference in between the attitudes of urban & rural student towards the subject mathematics.

Keywords: Attitude, Mathematics, Types of Boards, Gender and Locality.

Introduction

Education is the most basic necessity. It is the most treasured privilege that one can have. It is the extremely important for an individual's mental and social growth. Education in general is veryimportant and everybody must get the access to basic education right from their childhood.Education is a lifelong process. Each and every corner of life can give a lesson. Attitude toward education means how much one uses the education positively and spread it towards the society. Attitude of secondary school students is more complicated because it is their adolescence age. In this time they show a fluctuating attitude toward every one. During this period the students should grow the attitude towards future and other responsibilities. Because of that kind of mood and attitude they show different behaviour of their learning style and they show their mood to choose favorite subjects.

In India different school boards are there. Each and every board has own subjects structure and all the students have to follow it. In this particular situation students have some fear and also some love for the subjects which they have in secondary level. Sometimes it will grow because of behaviour of the teacher or because of the surroundings for the particular subject. Most of the time students have a fear towards the subject *Mathematics* dew to large no of reasons and it's differing according to teaching style of the lecturer, school boards and also the available recourses which may be inappropriate.

Through this study it will be located that in different school boards, toward the subject MATHEMATISC what the attitudes of secondary school students are.

Review of Literature

Mensah et al. (2013) conducted a study on Student attitude towards Mathematics and performance. The study showed that The positive correlation between students' attitude and students' performance, and teacher attitude and students' performance in Mathematics further demonstrate that attitude plays a central role in student learning. Particularly, teachers' attitude toward teaching Mathematics is seen as an important factor in the formation of students' attitude towards the learning of the subject.

Mubeen et al. (2013) conducted a study on Attitude towards Mathematics and Academics Achievement in Mathematics among Secondary Level Boys and Girls. The result of the study showed that boys differed in their mathematical achievement from girls. Girls achieved better results as compared to boys. Attitude towards mathematics and achievement in math did not go together.

Ali et al. (2016)conducted a study on A Study on Attitude towardsMathematics of Secondary Students in the District of Burdwan. The study showed thatmale and female students of 10^{th} level of secondary schools of Burdwan district have same type of attitude towards mathematics.

Dagnew, A. (2017) conducted a study on The Relationship between Students' Attitudes towards School, Values of Education, Achievement Motivation and Academic Achievement in Secondary School, Ethiopia. The main purpose of the study was to examine the relationship between students' attitudes towards school, values of education, achievement motivation and their academic achievement. And the conclusion were derived that Students' attitudes towards school, values of education and achievement motivation were positive and significant in secondary school students.

Mahanta, S.,& Islam, M. (2017) conducted a study on Attitude of Secondary Students towards Mathematics and its Relationship to Achievement in Mathematics. The objectives of the study were 1)To study gender-wise difference in student's attitude towards mathematics and 2). To study is there any relationship between attitude and achievement of a student. To obtain data, an instrument Mathematics Attitude Scale (MAS) has been developed by the investigators. MAS consist of 32 items. As a major finding of the investigation was boys show more positive attitude towards mathematics than girls and also attitude of students and achievement are positively correlated.

Anyaghet al. (2018) conducted a study on Secondary School Students' Perception of Teachers' Attitude towards Learning in Mathematics in Wukari Metropolis, Taraba State, Nigeria". This study was designed to investigate secondary school students' perception of their teachers' attitude towards them in the learning of mathematics. The study adopts a survey research design on a sample of 242 Senior Secondary School students randomly drawn from a population of 1210 students in Wukari Metropolis, Taraba State, Nigeria. The results implied that students' mathematics learning is highly influenced by the actions and inactions of the teacher, consequently building in them wrong disposition towards the subject.

Objectives of the study

1. To study the attitude of urban and rural secondary school students towards the mathematics subject.
2. To study the attitude of girl and boy students towards the mathematics subjects.
3. To study the attitude of mathematics students belongs to different types of school boards.

Hypothesis of the Study

$H0_1$

There is no significance difference between attitude of urban and rural secondary school students towards the mathematics subject.

$H0_2$

There is no significance difference between attitude of boy and girl students towards the mathematics subject.

$H0_3$

There is no significance difference between attitudes of mathematics students belongs to different types of school boards.

Methodology

For this study 400 data are collected from 10 different schools and then from them 200 data are randomly selected. To examine the hypothesis Descriptive Statistical techniques such as "mean" & "Standard Deviation" and Inferential Statistical technique such as "t-test" are used for testing the hypothesis. The investigator carefully compiled all dada and the raw data are systematized in tabular form. For testing the hypothesis t-test technique is done, before that mean and SD are calculated.

Population & Sample

The study has been done in 10 secondary schools of CoochBehar district of West Bengal. Five schools are under CBSE and five schools are under State Board. Among the CBSE schools three schools are situated in rural area and two schools are situated in urban area. Among State Boars' schools two schools are situated in rural area and three schools are situated in urban area. For this study 200 samples are randomly selected. Among them 100 samples are boy students and 100samples are girl students.

Group Wise Data Allocation

Variation	Group	No. of Samples
Sex	BOYS	100
	GIRLS	100
Location	URBAN	100
	RURAL	100
Board	CBSE	100
	STATE BORAD	100

Tool Used In The Present Study

"Mathematics Attitude Scale" (MAS-TAKT, 2012), developedby Dr. Ali Imam and Dr. Tahira Khatoon, is used and it is recognized by National **P**sychological **C**o-operation. The questionnaire is consisting with 22 questions where 11 positive questions and 11 negative questions are there with Likert Scale or five ratting scale.

Analysis and Result

1. Comparison of attitude of urban and rural secondary school students towards the mathematics subject is shown in the following table-

$H0_1$: There is no significance difference between attitude of urban and rural secondary school students towards the mathematics subject.

Testing of $H0_1$

Description	Mean	SD	T-VALUE	P value
Urban secondary Students (100)	86.1	12.10351	8.056 Significant	>P
Rural secondary Student (100)	78.46	14.61176		

* Significant at 0.05 level of significance
* * Significant at 0.01 level of significance
NS = not significant

Table shows that the mean of attitude of urban and rural secondary school students are 86.1 & 78.46 respectively and the SD are 12.10351 & 14.61176 respectively. The calculated "T" value (8.056) which is much greater than the "P" value at 0.05 level of significant, according to t-table. Hence there is significant difference between attitude of urban and rural secondary school students towards the subject Mathematics.

So it can be concluded that urban secondary school students and rural secondary school students don't have same attitude towards the subject Mathematics.

2. Comparison of attitude of boys and girls secondary school students towards the subject Mathematics is shown in the following table-

$H0_2$: There is no significance difference between attitude of boy and girl students towards the subject Mathematics.

Testing of $H0_2$

Description	Mean	SD	T-VALUE	P value
Boys secondary Students (100)	84.46	11.80774	0.026402 NS	<P
Girls secondary Students (100)	80.1	15.5066		

* Significant at 0.05 level of significance
* * Significant at 0.01 level of significance
NS = not significant

Table shows that the mean of attitude of boys and girls secondary school students are 84.46 & 80.1 respectively and the SD are 11.80774 & 15.5066 respectively. The calculated "T" value (0.026402) which is less than the "P" value at 0.05 level of significant, according to t-table. Hence there is no significant difference between attitude of boys and girls secondary school students towards the subject Mathematics.

So it can be concluded that boys secondary school students and girls secondary school students, both have same attitude towards the subject Mathematics.

3. Comparison of attitude of mathematics students belongs to different types of school boards is shown in the following table

$H0_3$: There is no significance difference between attitudes of mathematics students belongs to different types of school boards – CBSE vs. State Board.

Testing of $H0_3$

Description	Mean	SD	T-VALUE	P value
CBSE students	85.57	12.72812	0.0007297 NS	<P
State Board students	78.99	14.33897		

* Significant at 0.05 level of significance
* * Significant at 0.01 level of significance
NS = not significant

Table shows that the mean of attitude of CBSE and State board secondary school students are 85.57 & 78.99 respectively and the SD are 12.72812 & 14.33897 respectively. The calculated "T" value (0.0007297) which is less than the "P" value at 0.05 level of significant (α), according to t-table. Hence there is no significant difference between attitude of CBSE and State board secondary school students towards the subject Mathematics.

So it can be concluded that CBSE secondary school students and State board secondary school students, both have same attitude towards the subject Mathematics.

Interpretation of the Level of Attitude

After calculation of z-score and the counting, the investigator can find out that how many students have positive of negative attitude. The calculation of z-score can help to find out the attitude of secondary students' towards the subject mathematics within the chosen area.

Interpretation According to z-Scores

Sl. No.	Range of z-Scores	Grade	Levels of Attitude	No. of Students	% of no. of students
1.	**+2.01 and above**	**A**	**Extremely Favorable**	**0**	**0**
2.	+1.26 to +2.00	B	Highly Favorable	25	12.5
3.	+0.51 to +1.25	C	Above Average Favorable	45	22.5
4.	**-0.50 to +0.50**	**D**	**Moderate Favorable**	**71**	**35.5**
5.	-0.51 to -1.25	E	Below Average Favorable	37	18.5
6.	-1.26 to -2.00	F	Highly Unfavorable	14	7
7.	**-2.01 to below**	**G**	**Extremely Unfavorable**	**8**	**4**
			Total	**200**	

According to above table, among 200 student most of the students (35.5%) are in moderate favorable or average group and only 4 students are in extremely unfavorable group. 35% students are in above of the average group i.e. they have the positive attitude towards subject Mathematics and again 29.5% students are in below of the average group i.e. they have negative attitude towards the subject Mathematics or they dislike the particular.

Major Findings of The Study

On the basis of the data analysis the following findings are drawn up-----

1. There is a significant difference in the ground of attitude towards the subject Mathematics in between the urban student and rural student of CoochBehar district. The students don't have same attitude or felling towards the subject Mathematics.
2. There is no significance difference in the ground of attitude towards the subject Mathematics in between boys' students and girls' students of CoochBehar district. The students have similar fallings about the subject.
3. There is no significance difference in the ground of attitude towards the subject Mathematics in between CBSE students and state board students of CoochBehar district. Boards of the school are different but the felling about the subject Mathematics is similar.

Educational Implication of the Study

Each school board has its own criteria of evaluation procedure but there should have a unique system to all boards for 1st 10 year study for a student. This study shows that there is significant difference between rural school students and urban school students. But the question is why it should be? Students are trained to develop mathematical skills of calculation and construction. They are not encouraged to develop mathematical thinking, mathematical aptitude and problem solving approach. Mathematics curriculum needs a regular change according to recent up gradation as well the new approaches of mathematics teaching should be implemented and the progress also be checked. New facilities may be given to all level of students and basics of mathematics should be taught with scholarship examination. So that the area wise, gender wise, board wise gap can be maintained.

Therefore learning of mathematical concepts by secondary school children is found very significant for the present study. The present study may be used for finding the cause of difference between urban area and rural area. How much they prefer the subject mathematics that can be understand by the present study.

Conclusion

Mathematics is a core subject of education system and it is compulsory subject up to class X. Most of time students have a panic towards the subject Mathematics. The cause of that panic could be different in different situation. This situation creates the positive or negative attitudes towards the particular subject. A teacher should understand the situation which makes the negative environment to the students and try to remove it with the motivational activity.

The study is only gives the result of some hypothetic questions. But after the investigation the work could be extended that the how to improve the situation or remove the significant difference. Every child has own potentiality and discovering of that potentiality the negativity may be turned towards the positive attitudes.

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