International Journal of Advanced Education and Research
ISSN: 2455-5746; Impact Factor: RJIF 5.34
Received: 21-01-2019; Accepted: 28-02-2019
www.alleducationjournal.com
Volume 4; Issue 2; March 2019; Page No. 130-132

Attitude of ninth standard secondary school students towards mathematics in relation to their gender, locality and boards

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Abstract
The investigation was conducted to study is to determine the attitude towards mathematics of secondary school students of east district of Sikkim. The sample comprised of 280 (140 boys and 140 girls) secondary school students studying in ninth standard in east district of Sikkim. The attitude level was measured with the help of mathematics attitude scale developed by Dr. Ali Imam and Dr. Tahira Khatoon. The finding of the study revealed that there is no significant difference between male and female student's attitude towards the mathematics with regards to gender and different boards in which they studied, but difference in level of attitude towards the mathematics with regards to locality in which they studied.

Keywords: attitude, mathematics, secondary school students, gender, locality, types of boards

Introduction
In 21st century is known for science and technology age, where people spend half of the time by using the modern technology. Modern technology is based on mathematical operation. So proficiency in mathematics is seen as essential precursor to success in modern society. In India, guidelines set by the human resources development regarding the mathematics, according to guidelines mathematics is compulsory subject up to secondary level. Comparative large number of evaluation revealed that students did not performed as well as expected, and that they underachieved in mathematics when compared to the different subjects. Attitude towards mathematics of students has great deal of influence on student's participation in scholastic as well as non-scholastic activities and level of success attained in subject and future aspects. At present situation the development of nation depend on science and technology, so it essential for all educator to understand, motivate and develop the interest towards the subjects. So positive attitude is an important for school going learner in all aspects.

Review of literature
Ali *et al*. (2016). Conducted a study on attitude towards mathematics of secondary students in the district of Burdwan in West Bengal. The study showed that male and female students have same attitude towards the mathematics subject.
Yasor (2016) [7]. Conducted a study of high school student's attitude towards mathematics. The study revealed that there is no significant difference found in case of gender of the students. The study also revealed that the attitude of the students towards the mathematics are at medium level.
Elci (2017) [2]. Conducted a study to understand the student's attitude towards mathematics and the impacts of mathematics teacher approaches in it. The study reveals that the student's attitude towards the mathematics differed by gender, field and mathematics score but not by grade. It also indicates that the teacher approaches and activities impacted the student's attitude towards mathematics in some aspects.
Kasimu and Imoro (2017) [3]. Conducted a study on attitude of students towards the mathematics subject in public and private junior high school. The major findings were (i) there is no significant differences found between public and private junior high school students towards the mathematics subject. (ii) There is no significant difference found between in their level attitude between boys and girls.
Addae *et al*. (2018) [1]. Conducted a study on high school student's attitude towards the study of mathematics and their perceived teacher teaching practices. The study revealed that the high perceived attitude reported in the student's interest in doing mathematics. It also indicates that usefulness of mathematics and confidence in doing mathematics.

The Objectives of the Study
Keeping in view the above criteria the objectives of the study formulated are as follows
1. To study the significant difference on attitude of boys and girls students towards the subject.
2. To study the significant difference in the attitude of students in relation to urban and rural locality.
3. To study the significant difference on attitude of students in relation to different boards.

Hypothesis of the Study
The hypotheses of the study have been spelt out independently in null form of ease of interpretation. They are
Ho_1: There does not exist statistically significant difference between attitude of boys and girls students towards the mathematics subject.
Ho_2: There does not exist statistically significant difference between attitude of urban and rural students towards the mathematics subject.
Ho_3: There does not exist statistically significant difference on attitude of students in relation to different boards.

Methodology
Descriptive survey method is used in the view of the objective and rationale of the study.

Sample
A sample consist of 280 students (140 boys and 140 Girls) studying in ninth standard of different board affiliated school in rural and urban areas. The sample were selected randomly from six school in east district of Sikkim.

Tools Used in the Present Study
The following tools were used for collection of data.
Mathematics Attitude Scale developed by Dr. Ali Imam and Dr. Tahira Khatoon in (2012) and recognized by National Psychological Corporation, Agra.

Analysis and Result
The collected data was used to analyze for relevant statistical techniques like mean, standard deviation and t-distribution to find out the significant difference in the purpose hypothesis.
Ho_1: There does not exist statistically significant difference between attitude of boys and girls students towards the mathematics subject.

Table 1: Mean, Standard Deviation and 't' value of mathematics attitude of boys and girls.

Variables	Groups	No. of Students	Mean	Standard deviation	't'	Remark
Gender	Boys	140	82.8	13.6	0.04	Not-Significant
	Girls	140	79.3	15.1		

Table 1.0 reveals that 't' value (0.04) for the mean score of mathematics attitude between boys and girls in secondary school students . Which was significant at 0.01 level of significance as the tabulated value of 't' is 1.96 at 0.05 and 2.58 at 0.01 level of significance. Thus the null hypothesis that "There does not exist statistically significant difference between attitude of boys and girls students towards the mathematics subject" is accepted. So it was found that mean score of mathematics attitude of boys is more than girls. Which indicates the less interest towards the subject among the girl's students.
Ho_2: There does not exist statistically significant difference between attitude of urban and rural students towards the mathematics subject.

Table 2: Mean, Standard Deviation and 't' value of mathematics attitude of urban and rural students.

Variables	Groups	No. of Students	Mean	Standard deviation	't'	Remark
Locality	Urban	140	84.45	13.05	9.11	Significant
	Rural	140	77.7	15.07		

Table 2.0 reveals that 't' value (9.11) for the mean score of mathematics attitude between urban and rural students in secondary level. Which was significant at 0.01 level of significance as the tabulated value of 't' is 1.96 at 0.05 and 2.58 at 0.01 level of significance. Thus the null hypothesis that "There does not exist statistically significant difference between attitude of urban and rural students towards the mathematics subject" is rejected. So it was found that mean score of mathematics attitude of urban students is more than rural students. In this case the rural students have shown slightly low interest towards the subject in compare to urban students.
Ho_3: There does not exist statistically significant difference on attitude of students in relation to different boards

Table 3: Mean, Standard Deviation and 't' value of mathematics attitude of students towards the board.

Variables	Groups	No. of Students	Mean	Standard deviation	't'	Remark
Boards	C.B.S.E	140	83.66	14.07	0.02	Not significant
	I.C.S.E	140	78.55	14.45		

Table 3.0 reveals that 't' value (0.02) for the mean score of mathematics attitude of students towards the different board at secondary level. Which was significant at 0.01 level of significance as the tabulated value of 't' is 1.96 at 0.05 and 2.58 at 0.01 level of significance. Thus the null hypothesis that "There does not exist statistically significant difference on attitude of students in relation to different boards" is accepted. So it was found that mean score of mathematics attitude of students from C.B.S.E. is more and positive attitude in compare to I.C.S.E students in secondary level.

Major Findings
- It has been found that the mean score of mathematics attitude boy's students (82.86) is more than girl's students (79.35) towards the subject. So there is no significant difference between attitude of boys and girls students towards the mathematics subject at secondary level. It might be presumed that young boys understudy have less dimension of tension in contrast with young girls understudy during the practice of mathematics subject.
- It has been found that the mean score of mathematics attitude of urban students (84.45) is more than rural students (77.76) in secondary level. So there is significant difference in the mean score of mathematics attitude among urban and rural students in senior secondary school level. It may be concluded that urban student have proper infrastructure and good mathematics laboratory in comparison to rural students.
- It has been found that the mean score of mathematics attitude of C.B.S.E. students (83.66) is more than I. C.S.E. students (78.55) in secondary level. So there is no significant difference in the mean score of on attitude of students in relation to different boards at secondary level. It may be concluded that C.B.S.E. students is more positive interest and positive attitude in compare to I.C.S.E. student's level.

Educational Implication of the study

- Basically in advanced technology dominant society, each and every research is done to make the educational system is fruitful. In the present investigation researcher try to explain the attitude of students towards the mathematics subjects. So it has lot of advantage of teacher, scholar, parents, government and curriculum maker to understand and make the mathematics subject joyful. Behaviour of the instructors towards the child, during the instruction is important in developing the interest among the child towards the subject. Feedback mechanism and acceleration programme for the students in the secondary level should be strengthens more at early stage. The parents should provide the special attention and healthy environment in front of the student in home during the practice of mathematics. Mathematics instructor will linked the mathematics subject and its importance in day to day life, then large number of assignment given to home.

Conclusion

Attitude is an important in learning and developing the interest towards the subject. It is an important for teacher educators, teachers, parents and governments to create the interest and positive attitude towards the subject. Then only possible to develop the positive attitude towards the subject among the learner.

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