Research Paper EDUCATION

ATTITUDE TOWARDS MATHEMATICS AMONG XI STANDARD STUDENTS

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ABSTRACT

The study was undertaken with the objective of identifying the attitude towards mathematics among XI Standard students in Pondicherry region. The present study was conducted on a sample of 151 boys and 154 girls from 9 schools in Pondicherry region. Attitude towards Mathematics questionnaire constructed by the investigator was administered. The mean, median, mode and standard deviation of attitude scores of XI standard students are found to be 69.98, 71, 70, and 17.27 respectively. The mean score indicates that the students' achievement in Mathematics is good.

KEYWORDS | Attitude Towards Mathematics, XI Standard Students.

INTRODUCTION

We know that Mathematics is the base of all knowledge and so it has been made a compulsory subject. Unless a student has a favorable attitude towards a subject of study, he may not achieve considerably in that subject. Attitudes affect everything, if your attitude toward a task is positive, you will most likely enjoy the process of doing it and look for opportunities to do it. According to National Policy on Education (1986), Mathematics should be visualized as the vehicle to train a child to think, reason, analyze, and articulate logically. Apart from being a specific subject it should be treated as a concomitant to any subject involving analysis and meaning".

Perhaps the area which is least researched in our country is Mathematics education at school level, also Psychologists have recognized the importance of the study of Mathematics in disciplining the mind. Attitude is the most popular correlate of academic achievement of students. In western countries many researchers have found a significant and positive correlation between students attitude and achievement (A.Klein, 1939; L.F.Malpass, 1953; Mc Gaveran, 1955; George Weigand, 1957; E.M. Bower and J.A.Holmes, 1959; J.Modavid, 1959; D.L.Thistlewaite, 1959; Rothman, 1961; Brodies, 1964; Wofford and Willoughby, 1968; Khan, 1969; Williams, 1970; Marjori banks, 1976; Croucher, 1981 and Hough and Piper, 1982). The study recommends School to encourage students to strive for excellence in Mathematics by providing opportunities for them to participate in Mathematics clubs, Mathematics teams, and other Mathematics activities.

According to Courant and Robbins, "Mathematics is an expression of human mind that reflects the active will, the contemplative reason, and the desire for aesthetic perfection. Its basic elements are logic and intuition, analysis and construction, generality and individuality".

Mathematics is the base of all the essential knowledge and progress in science and technology. Bacon has rightly said, "Mathematics is the gate and key of the sciences". Today what we enjoy in our life as a result of scientific inventions has only been possible through Mathematics. We cannot safely and economically use them without the aid of Mathematics.

From the above discussion, we came to know that Mathematics is the base of all knowledge and so it has been made a compulsory subject. Unless a student has a favorable attitude towards a subject of study, he may not achieve considerably in that subject. He may not also like to study it further at higher levels. Because the higher secondary stage is the feeder stage for courses like engineering, technology, medicine, agriculture and so on. All the elective subjects at this stage should effectively be taught enabling students to acquire the necessary knowledge and skill and to develop favorable attitudes and interests.

Studying Mathematics of higher secondary level leads the students to acquire mental, self-reliance and independence. Mathematics is exceptionally difficult subject. It is because the study of Mathematics required specific ability called numerical ability. Each student is not endowed with such mathematical ability. The students feel difficult in learning Mathematics because they have developed some sort of phobia. This can be nipped in the bud if Mathematics teachers help the students to develop positive attitude towards learning Mathematics.

SIGNIFICANCE OF THE STUDY

Mathematics does help in training and disciplining the mind. It develops the power of thinking and reasoning and gives mental exercise best fitted for strengthening the faculties of the mind. Any student of average intelligence can learn Mathematics.

Study of Mathematics is helpful in learning most of the school subjects as it is believed to "the art of all art and science of all science". Today the life has been more complicated, so that we need more Mathematics to understand and adjust to the demand of life. Day by day this demand is going to be increased.

Mathematics helps the students try to analyze problem, develop the habits of systematic thinking and objective reasoning. It helps the students to develop heuristic attitude and try to discover the facts or solution to the problems with their own independent efforts. It helps the students to understand and appreciate logical, critical and independent thinking of others.

It becomes crystal clear from the above discussion that Mathematics is a life blood of all activities going inside a school. The investigator bears all these things in mind, and interested to assess the attitude of the students of XI standard towards Mathematics. The present study will throw light on the following aspect. Findings and suggestions of this study will help the Mathematics teacher to inculcate positive attitude towards Mathematics among the students. Hence, the present study is taken up.

DEFINITIONS OF THE TERMS USED

Attitude towards Mathematics

It refers to the score secured by an individual in the attitude scale.

OBJECTIVES OF THE STUDY

1. To study the attitude of XI standard students towards Mathematics.

HYPOTHESES OF THE STUDY

1. The attitude towards Mathematics of XI standard students is low.

2. There is no significant mean difference between the mean scores of attitude towards Mathematics of XI standard students in terms of Sex, Locality of School, Type of School, Course of study, Extra coaching, and Assistance in the Family.

METHODOLOGY

SAMPLE

The study was conducted on 305 students of XI standard from 9 schools in Puducherry region, using random sampling method. Out of these, 151 were boys (61 Government and 90 Private) and the remaining 154 were girls (62 Government and 92 Private).

TOOL

The data were collected using the Attitude towards Mathematics questionnaire constructed by the investigator. In the present study the investigator has employed the test-retest method to establish their reliability co-efficient of the tool. The reliability of the tool is 0.827.

STATISTICAL TECHNIQUES USED

The data have been analyzed using the following statistical techniques.

1. Descriptive analysis
2. Differential analysis and

RESULTS AND DISCUSSION

The mean, median, mode and standard deviation of attitude scores of XI standard students are found to be 162.92, 166, 174 and 20.41 respectively. The mean is found to be more. So this indicates that the students have a favourable attitude towards Mathematics.

Figure-1 showing Mean, standard deviation, mean difference and t-value of attitude towards Mathematics of different variables.

Variable	Groups	N	Mean	S.D	M.D	t - Value	Sig. level (0.05)
Sex	Boys	151	160.87	21.72	4.06	1.74	Not Significant
	Girls	154	164.93	18.89			
Locality of the School	Urban	196	163.98	20.92	2.91	1.23	Not Significant
	Rural	106	161.03	19.41			
Type of school	Private	182	162.65	19.50	0.80	0.33	Not Significant
	Government	123	161.85	21.71			
Course of study	Biology	147	163.88	21.10	1.85	0.79	Not Significant
	Computer science	158	162.03	19.76			
Extra coaching	coached	100	165.06	18.14	3.18	1.37	Not Significant
	Not coached	205	161.88	20.84			
Assistance in the family	assistance	108	166.59	20.13	5.68	2.35	Significant
	No assistance	197	160.91	20.33			

Figure-1 reveals that there is no significant difference in attitude towards Mathematics between the variables sex, locality of school, type of management, course of study, extra coaching, but there is a significant difference in the students who get assistance and who do not get assistance from the family in their attitude towards Mathematics.

CONCLUSION

1. Sex does not cause significant mean difference in attitude towards Mathematics of XI standard students in Puducherry region. This result is supported by the study Attitudes toward Mathematics: Relationships to Mathematics Achievement, Gender, Mathematics Course-taking Plans, and Career Interests by Corinna and Lee (1986).
2. Type of the school does not cause any significant mean difference in attitude towards Mathematics but it causes a significant mean difference in their achievement in Mathematics. This result is supported by the study attitude of Higher Secondary Students towards learning Mathematics by Reddi, S. (2004). He concluded that the XI standard students in general have positive attitude towards learning Mathematics.
3. The students of XI standard who are taking private tuition and who are not taking private tuition do not differ significantly in their attitude towards Mathematics but they differ significantly in their achievement in Mathematics. This result is supported by the study Attitude of IX standard students towards Mathematics by Jegannayagulu (1999) and his findings revealed that the students of IX standard who are taking private tuition and who are not taking private tuition do not differ significantly in their attitude towards Mathematics.

RECOMMENDATIONS

1. Use positive peer influence to help shape the attitudes and beliefs of students. Basic techniques like rationalization, concretization, and motivation can be employed to develop positive attitude towards Mathematics.
2. By adopting student – centered methods like inductive, analytic, laboratory, heuristic, problem solving, project methods, it is possible to inculcate positive attitude towards Mathematics in students.
3. Preparatory evaluation in Mathematics help to find learning difficulties and thus help in remedial measures.
4. Correlational approach in teaching of Mathematics can develop positive attitude towards Mathematics.

DELIMITATIONS

1. The critical factors that affect the learning of Mathematics may be studied.
2. A specific attitude scale to measure the attitude of rural students towards Mathematics may be constructed and their attitudes may be analyzed.
3. A similar study can be undertaken by taking high school or elementary students as sample.
4. A correlational study can be done between achievement in Mathematics and interest, attitude and appreciation.

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