

THE IMPACT OF MATHEMATICS CLUB IN TEACHING MATHEMATICS AT SECONDARY LEVEL

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Abstract: According to NCF-2005 the main goal of mathematics is “Mathematization of the child's thought process”. One of the major aims of teaching mathematics is to create interest among students. To arouse and maintain the interest in Mathematics is a major problem for the teacher. The elements of novelty, usefulness and sheer intellectual curiosity are the primary stimuli for the awakening of interest. A good Mathematics Teacher can involve his students in a number of co-curricular activities such as Mathematics Club, Mathematics Fair, and Mathematics Laboratory etc. Among them Mathematics Club plays an important role in sustaining interest in learning Mathematics among the students. This helps the students in having an idea of the practical utility of mathematics in addition to creating their interest in Mathematics. It can serve a number of purposes. That is why organization of Mathematics Clubs is necessary in schools to improve the quality education in mathematics. Therefore the investigator conducted a study in Visakhapatnam District of Andhra Pradesh covering teachers dealing Mathematics at secondary level. The study revealed that the perceptions of mathematics teachers on the impact of Mathematics Club in Teaching Mathematics at Secondary Level are positive and more encouraging. Among secondary school mathematics teachers there were no differences in their perceptions on the impact of Mathematics Club in Teaching Mathematics at Secondary Level in terms of their sex, locality, type of school, age, professional experience and educational qualifications.

Keyword: Mathematics Club, Teaching Mathematics.

INTRODUCTION:

Mathematics is the pivot of all civilization. There is no science, no art and no profession where mathematics does not hold a key position. Mathematics is fascinating because of its opportunities for creation and discovery as well as for its utility. It is basic to the understanding of every science. Therefore, in schools much impetus is given to the study of mathematics. It is well established that performance in mathematics is attributed to the intelligence of an individual. Mathematical training is essential to children if they are to flourish effectively in the newly forming technological world. Study of mathematics is advocated in all the educational programmes for the development of higher order mental capacities viz., critical thinking and logical reasoning. One of the major aims of teaching mathematics is to create interest among students. To learn mathematics, the student needs motivation to acquire all skills.

Mathematics is also a very useful subject for most vocations and higher specialized courses of learning. The mathematics knowledge is very useful for application at each and every stage. No other subject can be a substitute for mathematics.

MATHEMATICS EDUCATION IN SCHOOLS:

According to NCF-2005 the main goal of mathematics is “Mathematization of the child's thought process” The Kothari Commission 1964-66 draws the attention of the educators to the teaching of mathematics and the need for strengthening the method of teaching mathematics. The main characteristics of an effective teaching are the creation of a learning environment. This can be done by linking the subject matter to the real life situation so that a learner can feel the importance of learning. The

monotony of theoretical exercises may not create interest, providing as many learning experiences may create interest among the students. Games and other activities can go a long way in achieving the goal. A successful teacher of mathematics may create a learning environment in the class room.

To arouse and maintain the interest in Mathematics is a major problem for the teacher. The teacher knows very well that loss of interest is the major cause of student's failure. Students work most effectively at tasks in which they are genuinely interested. Students, as a rule, readily become interested in things which are new or exciting, for which they can perceive practical values and which involves puzzle elements or elements of mystery. Their interest is easily caught by anything new, but such interest is fleeting. The elements of novelty, usefulness and sheer intellectual curiosity are the primary stimuli for the awakening of interest. Interest in the subject can be effectively aroused and maintained by numerous special devices and activities.

For supplementing the teaching of mathematics in the class-room and to widen the knowledge of his students a good Mathematics Teacher can involve his students in a number of co-curricular activities such as Mathematics Club, Mathematics Fair, Mathematics Laboratory etc. there is no limit to such extra-curricular activities and teacher is free to undertake one or more such activities in his school for the benefit of his students.

MATHEMATICS CLUB:

The Mathematics club plays an important role in creating interest in mathematics in schools. This helps the students in having an idea of the practical utility of mathematics in addition to creating their interest in

Mathematics. It can serve a number of purposes.

Importance of the club:

1. Mathematics Club is useful in arousing and maintaining interest in Mathematics.
2. Gifted students get an opportunity to satisfy their needs and interests by actively participating in the activities of mathematics clubs...
3. It is helpful in making proper utilization of leisure time.
4. The students get an opportunity of mathematical hobbies, recreational mathematics, mathematical projects, mathematical games, mathematical discussions and debates, and mathematical innovations.
5. It provides an opportunity to read mathematical literature.
6. It provides an opportunity of leadership, cooperation, joint responsibility, active participation and organizing programmes.

ORGANIZATION OF THE CLUB:

A Mathematics Club will be a great help in enlivening the teaching of Mathematics. Such a club should be run by the students under the guidance of the teacher. Mathematics Club is an organization of the students, by the students, for the students. For proper running of a club the most important thing is the preparation of a draft constitution of the club. This draft be prepared by the Mathematics teacher in consultation with the head of the institution. This draft constitution should provide all important details about the name of the club, aims and objectives of the club, details regarding membership and the fee etc.

For efficient and successful working of Mathematics club an expert body has suggested the organization i.e. 1) Patron 2) Sponsor/In-charge 3) Staff Advisors 4) Associate Staff Advisors. The club may have an elected/ nominated executive committee amongst the students i.e. 1) President 2) Vice-president 3) Secretary 4) Treasurer.

ACTIVITIES OF THE CLUB:

1. Arranging lectures by renowned Mathematics Teachers or Scholars.
2. Celebrating days and events pertaining to the history of Mathematics or men of Mathematics.
3. Organizing Mathematical competitions.
4. Organizing recreational activities in Mathematics.
5. Preparing Mathematical aids and illustrations.
6. Organizing Mathematical exhibitions or fairs.
7. Mathematical articles for the school magazine.
8. Organizing seminars and career courses relating to Mathematics.

SIGNIFICANCE OF THE PRESENT STUDY:

Therefore it is understood that Mathematics Club plays an important role in sustaining interest in learning Mathematics among the students. That is why organization of Mathematics Clubs is necessary in schools to improve the quality education in mathematics. Therefore the investigator wanted to know the perceptions of teachers towards the impact of Mathematics Club in teaching mathematics at secondary level.

Statement of the problem:

The Impact of Mathematics Club in Teaching Mathematics at Secondary Level.

OBJECTIVES:

1. To know the perceptions of the teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level.
2. To find out whether there is any difference in the perceptions of the teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level with respect to their locality, sex and type of school.
3. To study the perceptions of teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level in terms of their a) age, b) teaching experience and c) educational qualifications.

Hypothesis:

1. There is no difference on the perceptions of Rural and Urban locality teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level.
2. There is no difference on the perceptions of male and female teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level.
3. There is no difference on the perceptions of Government and Private school teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level.
4. There is no difference on the perceptions of the teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level with respect to their a) age, b) teaching experience and c) educational qualifications.

Sample:

The researcher selected 46 teachers who are handling Mathematics at Secondary level from 24 schools for the purpose of this study covering both urban and rural localities, Government and Private Managements. All the sample schools were selected from the rural / urban localities of Bheemunipatnam, Padmanabham and Anandapuram mandals in Visakhapatnam district, Andhra Pradesh.

Tool:

The researcher designed a questionnaire for the teachers teaching Mathematics in Secondary Schools covering 28 items for collection of data and for analytical purposes. The questionnaire is divided into two parts. Part-A consists of personal data and Part-B consists of 28 questions based on Likert Scale to find out the perceptions of the teachers towards the impact of Mathematics Club in teaching mathematics at secondary level.

Method:

The researcher used survey method in the present study. The researcher designed a questionnaire covering 28 items and collected data from the teachers who are handling Mathematics at Secondary level.

Delimitations of the study:

The study was limited to know the perceptions the teachers who are teaching Mathematics in Secondary

Schools towards the Impact of Mathematics Club in Teaching Mathematics at Secondary Level. This study was also delimited to collect the data from the mathematics teachers from Visakhapatnam District covering Urban and Rural localities.

DATA ANALYSIS:

The researcher used relevant statistical techniques viz. Mean, SD, and CR values for statistical and analytical purposes with a view to get better results for this study.

Table: Table showing the perceptions of teachers in terms of their locality, sex, Type of school, Age, Professional Experience and Educational Qualifications on the impact of Mathematics Club in Teaching Mathematics at Secondary Level:

S No	Variable		N	M	SD	CR	Significance
1	Locality	Urban	18	78.17	5.92	1.02	Not Significant
		Rural	28	76.11	7.53		
2	Sex	Male	30	76.70	7.81	0.49	Not Significant
		Female	16	77.63	4.89		
3	Type of school	Government	33	79.49	4.91	3.91	Significant at 0.01 level
		Aided/Private	13	70.77	7.43		
4	Age	Up to 40 Years	28	76.46	7.68	0.73	Not Significant
		Above 40 Years	18	77.89	5.53		
5	Professional Experience	Up to 10Years	22	78.18	7.24	1.09	Not Significant
		Above 10Years	24	75.96	6.49		
6	Educational Qualifications	Post Graduates	24	76.08	6.09	0.96	Not Significant
		Graduates	22	78.05	7.65		

RESULTS AND DISCUSSION:

1. From the above table it was observed that with regard to locality of the school, the mean value obtained by the Urban area teachers is 78.17, whereas the mean value obtained by the Rural area teachers is 76.11. This clearly indicates that there is no difference between the above two categories. The CR value is 1.02 which is not statistically significant at any level. Hence the null hypothesis-1 that 'There is no difference on the perceptions of Rural and Urban locality teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level' is accepted.

2. With regard to sex, the mean value obtained by the Male teachers is 76.70, whereas the mean value obtained by the Female teachers is 77.63. This clearly indicates that there is no difference between the above two categories. The CR value is 0.49 which is not statistically significant at any level. Hence the null hypothesis-2 that 'There is no difference on the perceptions of male and female teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level' is accepted.

3. With regard to the type of the school management, the mean value obtained by the teachers working in Government

schools is 79.49, whereas the mean value obtained by the teachers working in Aided/Private schools is 70.77. This clearly indicates that there is difference between the above two categories. The CR value is 3.91 which is statistically significant at 0.01 level. Hence the null hypothesis-3 that 'There is no difference on the perceptions of Government and Private school teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level' is rejected.

4. With regard to the age of the teachers, the mean value obtained by the teachers of below 40 years age group is 76.46 and the mean value obtained by the teachers of above 40 years age group is 77.89. This clearly indicates that there is no difference between the above two categories. The CR value is 0.73 which is not statistically significant at any level. Hence the null hypothesis-4 that 'There is no difference on the perceptions of the teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level with respect to their age' is accepted.

5. With respect to the professional experience of the teachers, the mean value obtained by the teachers of below 10 years experience is 78.18 and the mean value obtained by the teachers of above 10 years experience is 75.96. This clearly indicates that there is no difference between the above two categories. The CR value is 1.09 which is not statistically significant at any level. Hence the null hypothesis-5 that 'There is no difference on the perceptions of the teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level with respect to their teaching experience' is accepted.

6. With respect to the qualification of the teachers, the mean value obtained by the Post Graduate teachers is 76.08 and the mean value obtained by the Graduate teachers is 78.05. This clearly indicates that there is no difference between the above two categories. The CR value is 0.96 which is not statistically significant at any level. Hence the null hypothesis-6 that 'There is no difference on the perceptions of the teachers on the Impact of Mathematics Club in Teaching Mathematics at Secondary Level with respect to their qualification' is accepted.

Major Findings of the study:

1. It is observed that both Rural and Urban locality respondents perceived high towards the impact of Mathematics Club in Teaching Mathematics at Secondary Level and they did not differ significantly in their opinions.

2. It is observed that both Male and Female respondents perceived high towards the impact of Mathematics Club in Teaching Mathematics at Secondary Level and they did not differ significantly in their opinions.

3. It is observed that significant difference between Government school teacher respondents and Private school teacher respondents towards the impact of Mathematics Club in Teaching Mathematics at Secondary Level was found. Government school teachers responded high than that of Private school teachers towards the impact of Mathematics Club in Teaching Mathematics at Secondary Level.

4. It is observed that both the age group respondents perceived high and expressed similar opinion towards the impact of Mathematics Club in Teaching Mathematics at

Secondary Level.

5.It is observed that both the professional experience groups of respondents perceived high and expressed one and the same opinion towards the impact of Mathematics Club in Teaching Mathematics at Secondary Level.

6.It is observed that both the academic qualified category respondents voiced similar opinion and they didn't differ significantly in their perceptions towards the impact of Mathematics Club in Teaching Mathematics at Secondary Level.

CONCLUSION:

The study revealed that the perceptions of mathematics teachers on the impact of Mathematics Club in Teaching Mathematics at Secondary Level are positive and more encouraging. Among secondary school mathematics teachers there were no differences in their perceptions on the impact of Mathematics Club in Teaching Mathematics at Secondary Level in terms of their sex, locality, age, professional experience and educational qualifications. It is concluded that Mathematics Club is useful in teaching Mathematics Secondary Level.

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