

Difficulties Faced in Learning Mathematics by Secondary School Students of Nirmal District Telangana

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Abstract:

The paper presents and discuss the findings. The difficulties faced in mathematics the project tools developed and evaluated to help in teacher reflect on their professional quality. The purpose of the present study is to focus up on the mathematics difficulties of rural and urban children studying in secondary school. This study help the rural and urban students to have knowledge of different types of difficulties in learning mathematics. Help the teacher to identify the different areas of difficulties faced by students in learning mathematics and to understand remedial measures to solve the students problems in learning mathematics. The main aim of the selecting this problem is to determine the what are the difficulties faced by rural and urban students. The present study has been done so as to study the learning difficulties in mathematics of secondary school students. Random sampling technique has been used in the selection of sample of as many as 200 secondary school students and learning difficulties in mathematics test constructed and validated by author, has been distributed to the students and collected the responses and computed according to objectives framed. The finding of the study revealed that more learning difficulties faced urban students compared to rural students.

Key words:- learning difficulties in mathematics, secondary school students, rural and urban.

Introduction

Mathematics is the real sense of space and quantity that helps us in solving the problems of life. Needing numeration and calculations. It provides opportunist for the intellectual gymnastic of the man' s inherent powers. It is an exact science and involves high cognitive abilities and powers. Mathematics is taken as the chest filled up with so many valuable tools concerning of the natures work and complicated problems of life converting them into its language of signs and symbols.

Mathematics in one sense had bread and butter value. The vocations now cease to be empirical, handed down from one generation of another. One has to choose and train oneself in one or other vacation with the advent of modern technology, mathematics has been a living wire for one' s contact to occupation. The base of any vacation, however small or big it may be is essentially economic and mathematical and therefore the knowledge of mathematics is capable of opening gates to so many vocation.

Mathematics is also called the science of reasoning to Locke "Mathematics is a way to settle in mind a habit of reasoning". There are only a few premises on which we base our reasoning. Reasoning in Mathematics is of two types inductive reasoning and deductive reasoning. When statements containing Mathematical truths are based on general observations and experience, reasoning is called inductive reasoning. Deductive reasoning is based on certain postulates or axioms and in this the statements are products of mind. Mathematics has not only been useful in its own right but it also enriched this world by helping in development of other field's knowledge.

Objectives of the study: The present study has the following objectives.

1. To analyze the difficulties faced by rural secondary school students in leaning mathematics.
2. To find out the difficulties faced by Boys and Girls of secondary school students in learning Mathematics.

3. To investigate the difficulties faced by Telugu and English medium Secondary school students in learning Mathematics.

Research Hypothesis: The following hypotheses have been formulated. For the present study.

1. There is no significant difference in the difficulties faced by rural and urban Secondary School students in learning mathematics.
2. There is no significant difference in the difficulties faced by Boys and Girls Secondary School students in learning mathematics.
3. There is no significant difference in the difficulties faced by Telugu and English medium Secondary School students in learning mathematics.

Method: - Normative survey method has been employed in the present study.

Selection of the Sample:

For the present study the researcher selected 4 schools i.e., 2 rural and 2 urban from 30 rural and 12 urban secondary schools. Therefore the samples for the present study i.e., 200 students were taken from the 4 different schools.

The details of the number of secondary school students drawn from 4 different schools are presented in the table.

**Table: Showing Schools and number of Secondary School student
Included in the sample: N=200.**

Sl. No	Name of the School	Nature of of the School	Total No of the student	No of selected students	
				Male	Female
1.	Rabindra High School, Mudhole, Nirmal Dist.	Rural	82	25	25
2.	Z.P . High School ,Mudhole, Nirmal Dist	Rural	68	25	25
3.	Z.P.P High School, Bhainsa, Nirmal Dist	Urban	65	25	25
4.	St. Anthony High School Nirmal	Urban	78	25	25
Total			293	100	100

Tools and Techniques Used For Data Collection:

In the present study, there was no ready tool available to find out the problems of high school students in learning Mathematics, a problem scale was developed for the purpose of the study. The tool used for gathering the data is a scale regarding the difficulties faced by secondary School students in Mathematics. The items of the scale were included under five areas. The scale consists of 50 items. The details of the number of items and areas of problems are presented in the table.

Table: Showing area of problems and number of items in the scale

Sl. NO.	Area of Problem	No of Items
1.	Personal	16
2.	School	8
3.	Teacher	14
4.	Home	6
5.	Text Book	6
TOTAL		50

Validity of the Scale:

If we test assesses whatever it claims to assess them the scale has validity. For the present test the validity was established by taking the opinion of expert subject teacher i.e., to find out whether the criteria's kept under the investigation were fulfilled or not and also they have helped in identifying the areas which could be the sources of problems for students in learning mathematics accordingly, the areas were Personal, School, Teacher, Home and Text Books.

The scale was administered to a sample of 200 students (i.e. 100 rural and 100 urban student) drawn randomly from 2 rural schools and 2 urban schools respectively.

Categorization of Rural Students

To rural students were grouped under 4 categories based on scores obtained by the scale on difficulties in learning Mathematics. The range of scores in each category is 15. In severe category, scores ranged between 40-50, in moderate category, sores ranged between 25-39, In mild category, scores ranged between 12-24, In less category, scores ranged between 1-11. The number of students coming under different category based on the scores obtained by the students on the scale of difficulties in learning Mathematics were tabulated.

Table: Showing number of rural students in the different categories based on the scores obtained by the scale on difficulties in learning mathematics.

No. of items = 50, N = 100

Sl. No.	Category	Scores obtained	No of Students
1	Severe	40-50	0
2	Moderate	25-39	4
3	Mild	12-24	75
4	Less	1-11	21

The table reveals that no rural student face severe difficulties in learning mathematics, only 4 rural students face moderate difficulties, 75 rural students face mild difficulties and 21 rural students have less difficulties in learning mathematics.

The result reveals that no rural students face severe difficulties in learning mathematics but more number of rural students face mild difficulties in learning mathematics.

Categorization of Urban Students:

The urban students were also grouped in a similar manner as that of rural student.

Table: Showing number of urban students in the different categories based on the scores obtained by the scale on difficulties in learning mathematics.

No. of items = 50, N=100

Sl. No.	Category	Scores obtained	No of Students
1	Severe	40-50	2
2	Moderate	25-39	35
3	Mild	12-24	45
4	Less	1-11	18

The table reveals that only 2 urban student face severe difficulties in learning Mathematics, 35 urban students face moderate difficulties, 45 urban students face mild difficulties, and 18 urban students have less difficulties in learning Mathematics. The result reveals that more number of urban students face moderate and mild difficulties in learning Mathematics.

Item Analysis and classification of rural and urban students in to different Areas of difficulties in learning mathematics.

Median Percentage: -

SL.NO	CATEGORY	RURAL	URBAN	REMARKS
1	PERSONAL	30.5	43	Urban students faced more difficulties then the rural students
2	SCHOOL	32.5	38.5	Urban students faced more difficulties Arising from the school than the rural students
3	TEACHER	33	47	Urban students faced more difficulties arising from the teacher than the rural students
4	HOME	26	37.5	Urban students faced more home difficulties than the rural students
5	TEXT BOOK	34.5	39.5	Urban students faced more difficulties arising from the textbook than the rural students

Testing the significance difference between the means of rural and urban students on the scale of difficulties in learning mathematics.

In order to test hypothesis No 1 i.e, there is no significant difference in the difficulties faced by rural and urban students in learning mathematics. The difficulties faced by the rural and urban Secondary School Students in learning Mathematics was compared by testing where there was any significant difference between their means. For the above purpose a 't' test was used. The sample of study was heterogeneous and independent. Significance of difference between means of rural and urban students was tested using the formula.

	N	Mean	S.D	't' Value	Significance at 0.05 level
Rural	100	15.93	5.90	4.38	Significant
Urban	100	20.89	9.85		

From the above table it could be seen that the obtained 't' value 4.38 is greater than that of the theoretical 't' value 1.97, hence the value was found to be significant at 0.05 level. Therefore null hypothesis will be rejected. The rejection of the significant differences between rural and urban students on difficulties in learning mathematics.

Future the mean difference of 4.96 was found to be in favor of urban students. It means, the value of mean of urban students is more compare to that of the value of the mean of rural students i.e. The urban students face more difficulties in learning mathematics when compare to that of the difficulties faced by the rural students in learning mathematics.

Testing the significance difference between means of Boys and Girls students on the scale of difficulties in learning mathematics.

In order to test hypo thesis No 2 i.e, there is no significant difference in the difficulties faced by male and female Secondary School Students in learning Mathematics was compared by testing where there was any significant difference between their means. For the above purpose a 't' test was used. The sample of study was heterogeneous and independent. Significance of difference between means of male and female was tested using the formula.

	N	Mean	S.D	't Value	Significance at 0.05 level
Male	100	16.56	7.63	2.63	Significant
Female	100	20.46	8.57		

From the above table it could be seen that the obtained 't' value 2.63 is greater than that of the theoretical 't' value 1.97, hence the value was found to be significant at 0.05 level. Therefore null hypothesis makes the researcher to accept the alternative hypothesis that there is significant differences between male and female students on difficulties is learning mathematics.

Further the mean difference of 3.90 was found to be in favour of female students. It means, the value of mean of female students is more compare to that of the value of the mean of the male students i.e. the female students face more difficulties in learning mathematics when compare to that of the difficulties faced by male students in learning mathematics.

Testing the significance difference between the means of rural male and rural female students on the scale of difficulties in learning mathematics.

In order to test the hypothesis No 3 i.e. there is no significance difference in the difficulties faced by rural male and rural female Secondary School English medium Students in learning Mathematics was compared by testing where there was any significant difference between their means for the above purpose a 't' test was used.

The sample of study was heterogeneous and independent. Significance of difference between means of male and female was tested using the formula.

Table: Showing the mean and standard deviation of the scores obtained by Telugu and English Medium students on difficulties in learning mathematics.

Medium	N	Mean	S.D	't Value	Significance at 0.05 level
Telugu	100	18	6.16	3.06	Significant
English	100	24	10.48		

From the above table it could be seen that the obtained 't' value 3.06 is less than that of the theoretical 't' value 1.97, hence the value was found to be not significant it 0.05 levels. Therefore null hypothesis will be rejected. The rejection of hypothesis makes the researcher to accept the alternative hypothesis that there is a significant difference between Telugu Medium and English Medium students on difficulties in learning mathematics.

Further the mean difference of 6.00 was found to be in favor of English Medium students. It means the value of mean of English medium students is more, compare, to that of the value of mean of the Telugu medium students i.e. English medium students face more difficulties in learning mathematics when compare to that Telugu medium students.

Findings of the Study: The following are some of the important findings of the present study.

1. More number of urban students face mild difficulties in learning mathematics and more number of urban students face moderate and mild difficulties in learning Mathematics.
2. Urban students face more difficulties in the areas i.e, personal, school, Teacher, Home difficulties, and text book, when compared to that of the difficulties faced by rural students.
3. Urban students face more difficulties in learning Mathematics than that of the problem faced by rural students in learning mathematics.

4. Girl students face more difficulties in learning mathematics than that of the problems faced by Boys students in learning mathematics.
5. The English medium students face more difficulties in learning mathematics, when compare to that of the difficulties faced by Telugu medium students.

Conclusions

The main objective of teaching mathematics is to help the child to quantify the ideas to be precise in his thinking, and to develop and utilize spatial concepts in his day to life. Teachers of mathematics find difficulty in teaching the complex concepts understanding of the fundamental operations and concept in mathematics. Here there is the need for identification and remediation of low achievers in the regular classroom itself to stream line them and to make them independent.

In the present day, Mathematics was preferred more in the primary and also in the secondary schools. In both rural and urban areas Mathematics is placed as an important subject. Yet rural and urban areas are still lagging behind in the fields of mathematics. Due to various problems like personal, school, Home, Text books and Teachers. To decrease this difficulty, it is necessary to make a study of different problems faced by them. So that some remedial steps could be under taken so far not much study is found to have been conducted in rural and urban in this direction. The present study is an attempt to fulfill this research gap.

References:-

1. Kothari C.R (1985): "Research methodology and methods of Techniques", Wiely Estern Ltd., New Delhi.
2. Lokesh Kaul (1998) : "Methodology and Education Research", 2nd Edition, Vikas Publications, New Delhi
3. Asthana B.N.(1995): "Elements of statistics", Chaitanya Publishing House, Allahabad.
4. Best, John. W., (1963), " Research in Education", Prentice hall of India (p.t) Ltd, New Delhi.
5. Garrett, HE., (1979), "Statistics in Psychology and Education", Hyderabad: International Book Bureau.
6. Guilford J.P (1987): "Fundamental statistics in psychology and education", 6th edition, Tata mcgregor Hill International Publishing co., Ltd., Singapore.