



## A Study of Problem Solving Ability in Mathematics of Viii Class Students with Management and Annual Income

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### ABSTRACT

Problem solving is one of the essential abilities to be developed in every citizen. Mathematics courses offer great scope for the development of this ability. Therefore, problem solving ability is ranked as one of the most important objectives of teaching mathematics. The main objective of the present study is to study the influence of management and annual income on the problem solving ability in mathematics of VIII class students. The problem solving ability in mathematics questionnaire developed by Srinivasa Rao, K (2007) was adopted for the present study. A sample of 300 VIII class students representing all categories of secondary schools in Y.S.R. Kadapa District by following the standardized procedures. 'F' test was employed for analysis of the data. There is significant influence of management and annual income at 0.01 level of significance on the problem solving ability in mathematics of VIII class students.

### KEYWORDS

Problem solving ability, Mathematics, Management, Annual income and VIII class students.

### INTRODUCTION

Problem solving ability is found to be important not only in the field of higher education but also in successful life. It helps pupils to become useful and efficient citizens in future. Therefore, it contributes to the national development. As school is the place where the necessary learning experiences are to be provided. It is imperative on the part of the teacher to strive to develop the problem solving in school going children.

During the past decade tremendous efforts are being made here and in other countries to improve the mathematics curriculum of secondary schools. The proposals of change dealt with not only what should be taught but also how it should be taught. Thus new courses, new text-books and learning material have been produced. In these new books new content was introduced and subject matter was well organized. Emphasis was given to understandings, pupil involvement and discovery call for more thinking. More thinking results in multi-fold problem activities.

A problem occurs when an activity is blocked by an obstacle that cannot be removed by the use of ready made habits. Here the situation is unfamiliar and confusing to the pupil. It was clear his habitual responses suffice. Obstacle can be something present that must be changed or something absent that must be found. And individual in a problem situation when he is drawn to a particular objective and is motivated to achieve it but he is at least temporarily trust rated to attain his goal.

In learning mathematics a student is involved in a variety of activities. At the lowest level he learns signs and symbols by rote memory. Then he performs operations which demand increasing skill and master of terms, phrases, sentences, instructional and physical facilities. At a higher level are the discovery understanding and application of generalizations

### REVIEW OF LITERATURE

**Srinivasa Rao, K (2007), Reshma Kasuar (2011) and Habeeb, P (2013)** reported that management of individuals do have significant difference on problem solving ability in mathematics. However, **Chandra Mohana Reddy (2012)** and **Kishore Reddy, N (2014)** reported that management of individuals do not have significant difference on problem solving ability in mathematics.

**Reshma Kasuar (2011), Chandra Mohana Reddy (2012) and Habeeb, P (2013)** reported that annual income of individuals do have significant difference on problem solving ability in mathematics. **Srinivasa Rao, K (2007)** and **Kishore Reddy, N (2014)** reported that annual income of individuals do not have significant difference on problem solving ability in mathematics.

**Scope of the Study:** The main intention of the present study is to find the relation of problem solving ability in mathematics of VIII class students with management and annual income.

**Objective of the Study:** To study the impact of management and annual income on the problem solving ability in mathematics of VIII class students.

### Hypotheses of the study

1. There would be no significant impact of 'management' on the problem solving ability in mathematics of VIII class students.
2. There would be no significant impact of 'annual income' on the problem solving ability in mathematics of VIII class students.

### Tools for the Study

1. The problem solving ability in mathematics test was adopted from **Srinivasa Rao, K (2007)**. The tool was highly reliable for the investigation. The total items of problem solving ability in mathematics questionnaire have 40 items. For the purpose of scoring the items which were marked with circle (Yes) awarded with one mark and a cross mark (No) were awarded with zero mark. Each student's score are marked on the right top corner of the sheet.
2. Personal data regarding the student – 1. Name, 2. Management, 3. Annual income.

### Data Collection

The sample for the investigation consisted of 300 VIII class students in Y.S.R. Kadapa district. The stratified random sampling was applied in three stages. The first stage is management i.e. Government, Private and Aided, the second stage is locality i.e. rural and urban and third stage is sex i.e. boys and girls. It is a 3X2X2 factorial design with 300 sample subjects. The investigator personally visited schools with the permission

of the head masters of the schools. The VIII class students who attended to the school on the day of collection of data are considered for the purpose of the investigation. It was provided to the concerned VIII class students of the schools. The VIII class students were given necessary instructions about the instruments and motivated to respond genuinely to all the items. The problem solving ability in mathematics questionnaire and personal data sheet were administered. The data on each variable in the investigation is properly coded to suit for computer analysis. The analysis was carried out on the basis of objectives of the investigation and hypotheses formulated by employing appropriate statistical techniques. The inferential statistical technique 'F' test was employed to test hypotheses.

**RESULTS AND DISCUSSION**

**1. Management**

The relationship of problem solving ability in mathematics of VIII class students with their management is studied in the present investigation. On the basis of management, the VIII class students are divided into three groups. The Government school students form with the Group – I, Group – II forms with the Aided school students and Group – III forms with Private students. The corresponding problem solving ability in mathematics of VIII class students of the three groups were analyzed accordingly. The mean values of problem solving ability in mathematics of VIII class students for the three groups were tested for significance by employing 'F' - test. The following hypothesis is framed.

**Hypothesis – 1**

There would be no significant impact of 'management' on the problem solving ability in mathematics of VIII class students.

The above hypothesis is tested by employing 'F' - test. The results are presented in **Table – 1**.

**Table – 1: Influence of management on the problem solving ability in mathematics of VIII class students**

S.No.	Management	N	Mean	S.D.	'F' – Test
1.	Government	100	24.94	7.09	7.814**
2.	Aided	100	23.91	6.58	
3.	Private	100	27.70	7.24	

\*\* Indicates significant at 0.01 level

It is found from the **Table – 1** that the computed value of 'F' (7.814) is greater than the critical value of 'F' (4.680) for 2 and 297 df at 0.01 level of significance. Hence the **Hypothesis – 1 is rejected** at 0.01 level. Therefore it is concluded that the management has significant influence on the problem solving ability in mathematics of VIII class students.

**2. Annual income**

The relationship of problem solving ability in mathematics of VIII class students with their annual income is studied in the present investigation. On the basis of annual income, the students are divided into three groups. The annual income is up to rupees fifty thousand form the Group – I, Group – II forms with annual income is above rupees fifty thousand one to one lakh and Group – III forms with annual income is above rupees one lakh. The corresponding problem solving ability in mathematics of VIII class students of the three groups were analyzed accordingly. The mean values of problem solving ability in mathematics of VIII class students for the three groups were tested for significance by employing 'F' - test. The following hypothesis is framed.

**Hypothesis – 2**

There would be no significant impact of 'annual income' on the problem solving ability in mathematics of VIII class students.

The above hypothesis is tested by employing 'F' - test. The results are presented in **Table – 2**.

**Table – 2: Influence of annual income on the problem solving ability in mathematics of VIII class students**

S. No.	Annual income	N	Mean	S.D.	'F' - Test
1.	Group – I	84	22.89	7.28	14.077**
2.	Group – II	80	24.50	6.58	
3.	Group – III	136	27.74	6.71	

\*\* Indicates significant at 0.01 level

It is found from the **Table – 2** that the computed value of 'F' (14.077) is greater than the critical value of 'F' (4.680) for 2 and 297 df at 0.01 level of significance. Hence the **Hypothesis – 2 is rejected** at 0.01 level. Therefore it is concluded that the annual income has significant influence on the problem solving ability in mathematics of VIII class students.

**Findings:** There is significant influence of management and annual income at 0.01 level of significance on the problem solving ability in mathematics of VIII class students.

**Conclusions:** In the light of the findings, the following conclusions are drawn. Management, annual income have significant influence on the problem solving ability in mathematics of VIII class students.

**EDUCATIONAL IMPLICATIONS**

The findings of the present research have raised some important questions related to the educational needs of the students with special reference to their problem solving ability in mathematics of VIII class students.

1. Management is the highly influenced in problem solving ability in mathematics of VIII class students. Private school students have better problem solving ability than the Aided school students. The administrators to provide facilities for Aided and Government schools.
2. Annual income is highly influenced in problem solving ability in mathematics of VIII class students. High annual income group students have better problem solving ability than the low annual income group students. The administrators to provide scholarship facilities for the low income group students.

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