

# PROBLEM SOLVING ABILITY IN MATHEMATICS OF THE IX STANDARD STUDENTS IN ADILABAD DISTRICT OF TELANGANA

<sup>1</sup>PUPPALA RAMULA, <sup>2</sup>Dr. D.M. MUGALE

<sup>1</sup>Ph.D. Research Scholar, <sup>2</sup>Principal  
Dr. Shivling Shivacharya Maharaj Pratishtans College of Education,  
Affiliated to SRTM University Nanded, India.

**Abstract:** Problem solving is an integral part in learning. In everyday life and in the workplace, being able to solve problems can lead to great advantages. However, solving problems is not only a goal of learning. Problem solving should not be an isolated part of the curriculum but should involve all Content Standards. The students of today are the youths of tomorrow and future citizens of the country, therefore it is their responsibility to see that they are physically, mentally, emotionally and educationally healthy. The present study has been done so as to study the Problem solving ability in mathematics of the IX standard students. Random sampling technique has been used in the selection of the sample of as many as 1000 IX standard students and the Problem solving ability in mathematics test constructed and validated by the authors has been distributed to them and the responses were collected and computed according to the objectives framed. The findings of the study revealed that majority of the IX standard students shows an average level of problem solving ability in mathematics and the same trend has been seen in respect of the sub-samples, too.

**Keywords:** Problem solving ability in mathematics, IX standard students.

## PROBLEM SOLVING ABILITY IN MATHEMATICS:

Good problems give students the chance to solidify and extend their knowledge and to stimulate new learning. Most chemical concepts can be introduced through problems based on familiar experiences coming from students' lives or from chemical contexts. As students try different ideas, the teacher can help them to converge on using proportions, thus providing a meaningful introduction to a difficult concept.

The Problem Solving process consists of a sequence of sections that fit together depending on the type of problem to be solved. These are:

- Problem Definition.
- Problem Analysis.
- Generating possible Solutions.
- Analyzing the Solutions.
- Selecting the best Solution(s).
- Planning the next course of action (Next Steps)

Students need to develop a range of strategies for solving problems, such as using diagrams, looking for patterns, or trying special values or cases. These strategies need instructional attention if students are to learn them. However, exposure to problem-solving strategies should be embedded across the curriculum. Students also need to learn to monitor and adjust the strategies they are using as they solve a problem. Teachers play an important role in developing students' problem-solving dispositions. They must choose problems that engage students. They need to create an environment that encourages students to explore, take risks, share failures and successes, and question one another. In such supportive environments, students develop the confidence they need to explore problems and the ability to make adjustments in their problem-solving strategies. So, the present study has high need and importance. The present study has been done so as to study the Problem solving ability in mathematics of the IX standard students.

## OBJECTIVES OF THE STUDY:

The following were the objectives framed for the present investigation.

1. To study the problem solving ability in mathematics of the IX standard students.
2. To study if there is any significant difference in problem solving ability in mathematics between the IX standard boys and girls.
3. To study if there is any significant difference in problem solving ability in mathematics between the IX standard students studying in the schools located in the urban area and in the rural area.
4. To study if there is any significant difference in problem solving ability in mathematics between the IX standard students residing in the urban area and in the rural area.
5. To study if there is any significant difference in problem solving ability in mathematics between the IX standard students studying in the English medium and Tamil medium.
6. To study if there is any significant difference in problem solving ability in mathematics between the IX standard students who were hostellers and day scholars.

7. To study if there is any significant difference in problem solving ability in mathematics between the IX standard students from nuclear family and joint family.

#### HYPOTHESES OF THE STUDY:

The following were the hypotheses for the present investigation formulated from the framed objectives.

1. The problem solving ability in mathematics of the IX standard students is high.
2. There is no significant difference in problem solving ability in mathematics between the IX standard boys and girls.
3. There is no significant difference in problem solving ability in mathematics between the IX standard students studying in the schools located in the urban area and in the rural area.
4. There is no significant difference in problem solving ability in mathematics between the IX standard students residing in the urban area and in the rural area.
5. There is no significant difference in problem solving ability in mathematics between the IX standard students studying in the English medium and Tamil medium.
6. There is no significant difference in problem solving ability in mathematics between the IX standard students who were hostellers and day scholars.
7. There is no significant difference in problem solving ability in mathematics between the IX standard students from nuclear family and joint family.

#### METHOD:

Normative survey method has been employed in the present study.

#### TOOL USED:

Problem solving ability in mathematics constructed and validated by the authors was used in the present investigation. The test consists of 22 items, which were multiple choice questions. The correct answer carries one mark and the wrong answer carries zero mark. The maximum score for this test is 22 and the minimum score is 0. Also the person who scores upto 6 were said to have low level of problem solving ability in mathematics, above 7 and upto 16 were said to have average level of problem solving ability in mathematics and above 16 were said to have high level of problem solving ability in mathematics. The reliability of the problem solving ability in mathematics test found using the split half technique as 0.79 and its intrinsic validity has been found to be 0.88.

#### SAMPLE:

Random sampling technique has been used in the selection of the sample of as many as 1000 IX standard students studying in higher secondary schools situated in the Adilabad district of Telangana.

#### STATISTICAL TECHNIQUES USED:

The level of problem solving ability in mathematics for the IX standard students has been computed for the entire sample and its sub samples and they have been furnished in Table.1. The mean and standard deviation for the entire sample and its sub-samples were computed for Problem solving ability in mathematics scores. The test of significance ("t" test) was used in order to find out the significance of the difference between the means of the problem solving ability in mathematics score. The collected data were computed with the SPSS 11.5 and the results were furnished accordingly in the Table 1.

**TABLE 1**  
**THE MEAN AND THE STANDARD DEVIATION OF THE PROBLEM SOLVING ABILITY IN MATHEMATICS SCORES OF THE ENTIRE SAMPLE AND ITS SUB-SAMPLES**

S.NO	SAMPLE	SUB-SAMPLE	N	MEAN	S.D	't' VALUE	SIGNIFICANT AT 0.05 LEVEL
1	Entire sample		1000	15.4740	1.6321	-	
2	Sex	Boys	544	15.4798	1.6238	0.12	Not significant
		Girls	456	15.4671	1.6438		
3	Locality	Rural	569	15.4745	1.6497	0.01	Not significant
		Urban	431	15.4733	1.6106		
4	Residence	Rural	554	15.5632	1.6591	1.93	Not significant
		Urban	446	15.3632	1.5929		
5	Medium	Hindi	436	15.4817	1.5777	0.13	Not significant
		English	564	15.4681	1.6743		
6	Mode of Stay	Hosteller	468	15.3782	1.6360	1.74	Not significant
		Day Scholar	532	15.5583	1.6255		
7	Family Type	Nuclear	674	15.4273	1.6340	1.30	Not significant
		Joint	326	15.5706	1.6265		

**FINDINGS OF THE STUDY**

The following are the important findings of the present investigation which were inferred from the Table1.

1. The IX standard student shows an average level of problem solving ability in mathematics.
2. There is no significant difference in problem solving ability in mathematics between the IX standard boys and girls.
3. There is no significant difference in problem solving ability in mathematics between the IX standard students studying in the schools located in the urban area and in the rural area.
4. There is no significant difference in problem solving ability in mathematics between the IX standard students residing in the urban area and in the rural area.
5. There is no significant difference in problem solving ability in mathematics between the IX standard students studying in the English medium and Tamil medium.
6. There is no significant difference in problem solving ability in mathematics between the IX standard students who were hostellers and day scholars.
7. There is no significant difference in problem solving ability in mathematics between the IX standard students from nuclear family and joint family.

**CONCLUSION:**

From the above analysis, it is concluded that the majority of the entire sample of IX standard students shows an average level of problem solving ability in mathematics. The sub-samples of the present study such as the sex, locality of the school, residence, medium of study, mode of stay and family type of the IX standard students shows no significant difference in problem solving ability in mathematics.

**REFERENCES:**

- Best, John. W., (1963), "Research in Education", Prentice hall of India (p.t) Ltd, New Delhi.  
Garrett, HE., (1979), "Statistics in Psychology and Education", Hyderabad: International Book Bureau.