



## PROBLEM SOLVING ABILITY AMONG 9<sup>TH</sup> STANDARD STUDENTS IN RELATION TO THEIR EMOTIONAL INTELLIGENCE AND LOCALITY

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### ABSTRACT

Mathematics education is confined to the practice of teaching and learning Mathematics in school instruction. Mathematics education by its very nature is highly logical and sequential. The main objective of the present study is influence of problem solving ability among 9<sup>TH</sup> standard students in relation to their emotional intelligence and locality. Problem solving ability test and Emotional intelligence scale is developed and standardized by the investigator. A sample of 600 9<sup>TH</sup> standard students in Y.S.R. Kadapa District of the state of Andhra Pradesh is collected by following the standardized procedures. F (ANOVA) test and 't' – test were employed for analysis of the data. There is significant influence of emotional intelligence at 0.01 level of significance and locality at 0.05 level of significance on the problem solving ability of 9<sup>TH</sup> standard students.

**KEYWORDS :** Problem Solving Ability, Emotional Intelligence, Locality and 9<sup>TH</sup> Standard students.

### INTRODUCTION

Problem solving is a kind of performance and two variables that influence problem solving are,

- **Motivation:** Very low levels of motivation are likely to yield poor problem solving performance. An individual with insufficient motivation will not continue the problem solving sequence. In addition, a particular motivation may influence a person's attention, directing the person to certain problems or aspects of the environment, and away from each other.
- **Past experience:** Previous experience may predispose to respond in a certain manner when trying to solve a problem, in which, currently available information, held in storage is used as the reference point for making a judgement.

Mathematics engages the students in the acquisition of different mental abilities such as:

- **Inquiry** – the student learns to value evidence, to think rationally, and to produce new knowledge. It is a process of self discipline and perseverance.
- **Reflective thinking** – it gives the opportunity to discuss and argue issues, to analyze the tasks performed and to speculate about how a certain chain of events might take place under certain conditions.
- **Creative expression** – this provides the students a great opportunity to express themselves creatively, and
- **Value analysis** – this directs students to enable themselves to develop an awareness of their values and ideas.

### REVIEW OF LITERATURE

Uma Devi (2009) conducted a study on "The relationship between Problem solving ability and Academic achievement of Secondary School Students." The findings indicated that there was no significant difference in Problem solving ability of boys and girls. There was significant difference in the problem solving ability of the students studying in government and private schools and there was a positive relationship

between academic achievement of the students with high moderate and low Problem solving ability.

Manoharan (2009) studied on "Problem Solving Ability in Mathematics of IX-Class students in Villupuram district." The main findings of the study revealed that problem solving ability in 9<sup>th</sup> class students was low. Type of the school, locality, subject group and extra coaching had influence on Problem solving ability in Mathematics whereas Gender, Parental educational qualification and parental occupation had no influence on Problem solving ability in Mathematics. Private schools, Urban, computer science group students and students who went for tuition in Mathematics.

Sabahattin Deni (2013) this study aims to investigate the relationship between emotional intelligence and problem solving. The sample set of the research was taken from the Faculty of Education of Mugla University by the random sampling method. The participants were 386 students - prospective teachers- (224 females; 182 males) who took part in the study voluntarily. The findings of the study revealed that Emotional intelligence was found to be significantly correlated with problem solving.

Ergin, A., Karatas, H and Mutlu, E (2020) The aim of this study is to examine the relationship between emotional intelligence levels and problem-solving skills of engineering students in terms of gender, grade, department, university and academic achievement variables. The study group consisted of 491 university students (155 females, 336 males) enrolled in Istanbul Technical University and Yıldız Technical University Engineering Programs in 2018-2019 academic year. The results indicate that the level of emotional intelligence and problem-solving skills of engineering students predict the academic achievement with a low rate.

### STATEMENT OF THE PROBLEM

The problem selected to the present study is the Problem Solving Ability of 9<sup>TH</sup> standard students.

### Scope of the Study:

The main intention of the present study is to find the relation of problem solving ability of 9<sup>TH</sup> standard students with emotional intelligence and locality.

### Objective of the Study

To study the influence of problem solving ability of 9TH standard students with their emotional intelligence and locality.

### Hypotheses of the study

1. Emotional intelligence would not have significant influence on the problem solving ability of 9<sup>TH</sup> standard students.
2. Locality would not have significant influence on the problem solving ability of 9TH standard students.

### Tools for the Study

1. Problem solving ability test was developed and standardized by the investigator. The total items are 100. All the answer scripts were valued on the basis of the scoring key prepared for the test. **One mark** is awarded for every correct answer and the total marks of the each student were indicated on the top of the answer sheet.
2. Emotional intelligence scale was developed and standardized by the investigator. The total items are 30. For the purpose of scoring, numerical values (weightages) were assigned to each of the three categories namely **Self Confidence (SC), Innovative (IN) and Adjustment (AD)** for emotional intelligence scale.
3. Personal data regarding the student – a. Name and b. Locality.

### Data Collection

The sample for the investigation consisted of 600 9TH standard students in Y.S.R. Kadapa District of the state of Andhra Pradesh. The stratified random sampling was applied. In the first stage is management of the school i.e. government and private school, in the second stage is locality of the school i.e. rural and urban school and third stage is gender of the students i.e. boys and girls. In total **300 boys** and **300 girls** are included in this study. It is a **2X2X2 factorial design** with 600 sample subjects. The investigator was visited secondary schools with the permission of the head masters of the secondary schools. The 9<sup>TH</sup> standard students who attended to the school on the day of collection of data are considered for the purpose of the investigation. It was provide to the concerned 9TH standard students. 9TH standard students were given necessary instructions about the problem solving ability test and emotional intelligence scale and motivated to respond genuinely to all the items. 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 techniques 't' and 'F' - tests were employed to test hypotheses.

### Analysis and interpretation of data:

#### 1. Emotional Intelligence:

In the present investigation, on the basis of problem solving ability, the 9TH standard students are divided into three groups using quartile values. The students whose problem solving ability is up to Q1 value form as Group – I, Group – II form as above Q1 and up to Q3 value and Group – III form as above Q3 value. The influence of 'emotional intelligence' on the results of 9TH standard students is investigated. The corresponding problem solving ability score of three groups are analyzed accordingly. The influence of 'emotional intelligence' on results is investigated through one - way ANOVA technique. The following hypothesis is framed.

#### Hypothesis – 1

Emotional intelligence would not have significant influence on the problem solving ability of 9<sup>TH</sup> standard students.

The above hypothesis is tested by employing one - way ANOVA technique. The results are presented in **Table – 1**.

**Table – 1: Influence of emotional intelligence on the problem solving ability of 9TH standard students**

S. No.	Emotional intelligence	N	Mean	SD	'F' – Ratio
1.	Group – I	210	68.48	15.48	5.750**
2.	Group – II	181	67.66	15.96	
3.	Group – III	209	72.57	15.30	

\*\* Indicates significant at 0.01 level

The table value of 'F' for 2 and 597 df at 0.01 level is 4.65 and at 0.05 level is 3.01.

It is clear from the **Table – 1** that the computed value of 'F' (5.750) is greater than the critical value of 'F' (4.65) for 2 and 597 df at 0.01 level. Hence the **Hypothesis – 1 is rejected** for the variable 'emotional intelligence' at 0.01 level of significance. It is concluded that '**emotional intelligence**' has significant influence on the problem solving ability of 9TH standard students.

#### 2. Locality

In the present investigation, the 9TH standard students are divided into two groups; on the basis of locality 300 rural 9TH standard students form as Group – I and 300 urban 9TH standard students form as Group – II. The influence of 'locality' on the problem solving ability of 9TH standard students is investigated. The corresponding problem solving ability score of two groups are analyzed accordingly. The influence of locality on the problem solving ability is investigated through 't' – technique. The following hypothesis is framed.

#### Hypothesis – 2

Locality would not have significant influence on the problem solving ability of 9TH standard students. The above hypothesis is tested by employing 't' – technique. The results are presented in **Table – 2**.

**Table – 2: Influence of locality on the problem solving ability of 9<sup>TH</sup> standard students**

S. No.	Locality	N	M	SD	't' - Value
1.	Rural	Group – I	68.26	15.68	2.182*
2.	Urban	Group – II	71.05	15.60	

\* Indicates significant at 0.05 level

The table value of 't' for 1 and 598 df at 0.01 level is 2.59 and at 0.05 level is 1.96

It is clear from the **Table – 2** that the computed value of 't' (2.182) is greater than the critical value of 't' (1.96) for 1 and 598 df at 0.05 level. Hence the **Hypothesis – 2 is rejected** for the variable '**locality**' at 0.01 level of significance. It is concluded that '**locality**' has significant influence on the problem solving ability of 9th standard students.

#### Findings of the study

1. Emotional intelligence has significant influence on the problem solving ability of 9TH standard students.
2. Locality has significant influence on the problem solving ability of 9TH standard 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.

1. Emotional intelligence is highly influenced on the problem solving ability of 9TH standard students. High emotional intelligence students have better problem solving ability than the low emotional intelligence students. The administrators have to conduct psychological programmes for the low achievement students.

2. Locality is the highly influenced on the problem solving ability of 9TH standard students. Urban students have better problem solving ability than the rural students. The administrators have to provide good facilities for the rural students.

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