

# Problem Solving Ability Skill of High School Students in Chengalpattu District

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## ABSTRACT

The present study has marked out some problem solving ability and scientific attitudes varieties which were found associated positively or negatively with problem solving ability and scientific attitudes. They may, it is hoped he found to provide more practical and rational beat for teachers to spot out the students with high number of achievement and provide suitable pleasant surroundings which may help in developing this motivation in their students. It reinforces the need for a attaining problem solving ability and scientific attitudes through effective are weak and what to do in future to fill this gap in general and the area selected for the particular service. It also makes us to think to say instead of saying something is impossible, it is always better to be ready ourselves towards Let us make ourselves ready to accept new things to come despite its constraints.

## INTRODUCTION

The word education is used sometimes to signify the activity, process, on the enterprise of educating or being educated and sometimes to signify the discipline or field of study taught in schools of education that concern itself with the active process or enterprise. As an activity or process education may be formal or informal, private or public, individual or social, but it always consists of activating abilities, skills, knowledge, beliefs, attitudes, values and character traits of certain methods. As a discipline, education studies or reflects the activity or enterprise by asking questions about its aims, methods, effects, forms, history, castes, value and relations to society. Student's academic success is strongly influenced by individual differences like problem-solving ability, scientific attitudes and academic achievement.

## PROBLEM SOLVING ABILITY

Problem solving ability is one kind of test of the student's intelligence. In day to day life, a person faces many problems and tries to solve them. It can be done only be right thinking and proper reasoning which depend upon the level of intelligence of the peers. Problem solving ability is a mental process and is part of large problem that includes problem finding and problem shaping. Considered most complex of all intellectual functions Problem solving has been defined as higher order cognitive process that requires the modulation and control of more routine or fundamental skills. With the advancement in the socio-economic & technological field the life of individual is becoming more and more complex fraught with a member of problems which the individual and the society have to face in near future.

According to **Albert Einstein**, " If I had 60 minutes to solve a problem, I'd spend 55 minutes defining it, and 5 minutes solving it." Problem solving has been observed as one of the principal causes of scholastic

failure in areas of science such as mathematics, chemistry and physics (Perez & Terragosa, 1983). Problem solving ability is a complex cognitive ability that characterizes a human activity requiring intelligence. According to **Woodworth & Marquis (1948)**, “Problem solving occurs when there is an obstruction of some sort in the attainment of an objective. If the path towards the goal is straight and open, then there is no problem.”

According to **S. Ian Robertson**, “Problem solving is a mental process which is the concluding part of the larger problem solving process that includes problem finding and problem shaping where problem is defined as a state of desire for the reaching a definite goal from a present condition that either is not directly moving toward the goal, is far from it or needs more complex logic for finding a missing description of conditions or steps toward the goal.”

### **NEED AND IMPORTANCE OF THE STUDY**

Problem-solving is a basic skill needed by today's learners. Guided by recent research in problem-solving, changing professional standards, new workplace demands, and recent changes in learning theory, educators and trainers are revising curricula to include integrated learning environments which encourage learners to use higher order thinking skills, and in particular, problem-solving skills

As education has come under criticism from various sectors, educators have looked for ways to reform teaching, learning, and the curriculum. Many have argued that the divorce of content from application has adversely affected our educational system. Learners often learn facts and not procedures with few ties to the context and application of knowledge. Problem-solving has become the means to rejoin content and application in a learning environment for basic skills as well as their application in diverse contexts.

### **STATEMENT OF THE PROBLEM**

The problem selected for the study “**A STUDY ON PROBLEM SOLVING ABILITY SKILL OF HIGH SCHOOL STUDENTS IN CHENGALPATTU DISTRICT**”

### **OBJECTIVES OF THE STUDY**

1. To find out the level of Problem solving ability skill of high school students.
2. To find out there is any significance difference in relation to Problem Solving Ability skill among high school students of the following sub variables.
  - Gender (Male/Female)
  - Medium of instruction (Tamil/English)
  - Location of school (Rural/ Urban)
  - Type of Family (Nuclear/Joint)
  - Administrative structure of the school (Government/Aided/Private)

### **HYPOTHESES OF THE STUDY**

1. The level of Problem solving ability skill among the school students is Average.
2. There is no significance difference in relation to Problem solving ability skill among high school students of the following sub variables.
  - Gender (Male/Female)
  - Medium of instruction (Tamil/English)
  - Location of school (Rural/ Urban)
  - Type of Family (Nuclear/Joint)
  - Administrative structure of the school (Government/Aided/Private)

**SAMPLE OF STUDY**

A sample is a small proportion of the population selected for analysis and observation. Here the sample consists of 300 Students studying in High School in Chengalpattu Educational District in Tambaram Division Schools. Here the investigator has followed Simple Random Sampling technique

**METHOD OF THE STUDY**

The survey method was standardize most appropriate for this study because it can measure students background, experience and what they know about problem solving 68 ability, scientific attitudes, academic achievement , and it well suited to the research questions taken up for this study.

**HYPOTHESIS TESTING HYPOTHESIS-1**

The level of problem solving ability among high school students is average

**Table: 1 Table shows the level of Problem solving ability among High school students**

N	MEAN	SD
300	105.19	23.139

**INFERENCE:** The level of mathematics motivation among high school students is High.

**NULL HYPOTHESIS -2**

There is no significant difference between the high school students with respect to problem solving ability based on their Gender

**TABLE – 2 Table shows the significance difference between the High school students with respect to Problem solving ability based on their Gender using Mean scores**

Variables	Gender	N	Mean	SD	t-value	LS
Problem Solving Ability	Male	150	109.72	20.459	3.455	0.01
	Female	150	100.65	24.789		

**INFERENCE:** From the above table, it is inferred that t value (3.455) is greater than the table value (2.58) at 0.01 level. The Male mean score is 109.72 is better than Female mean score 100.65.

Hence there is a significance difference between the Male and Female high school students on their Problem Solving Ability mean scores . Therefore, the above null hypothesis is rejected.

**NULL HYPOTHESIS -3**

There is no significant difference between the high school students with respect to Problem solving ability on Rural and Urban Student.

**TABLE – 3 Table shows the significance difference between the High school students with respect to Problem solving ability based on their Location using Mean scores**

Variables	Location	N	Mean	SD	t-value	LS
Problem Solving Ability	Rural	125	102.27	24.262	1.851	NS
	Urban	175	107.27	22.138		

**INFERENCE:** From the above table, it is inferred that t-value (1.851) is less than the table value (1.96) at 0.05 level. The urban area mean score is 107.27 is better than the rural area score102.27.

Hence there is no significance difference between the rural and urban area high school students on Problem

Solving ability mean scores. Therefore, the above null hypothesis is accepted.

**NULL HYPOTHESIS -4**

There is no significant difference among the high school students with respect to Problem Solving Ability based on Tamil medium and English medium Student.

**TABLE – 4 Table shows the significance difference between the High school students with respect to Problem solving ability based on their Medium using Mean scores**

Variables	Medium	N	Mean	SD	t-value	LS
Problem Solving Ability	Tamil	100	97.88	15.11	3.961	0.01
	English	200	108.84	25.508		

**INFERENCE:** From the above table, it is inferred that t-value (3.9610 is greater than the table value (2.58) at 0.01 level. The English medium student, mean score is 108.84 is better than Tamil medium student score 97.88.

Hence there is a significant difference between the Tamil medium and English medium high school students on their problem solving ability mean scores. Therefore the above null hypothesis is rejected.

**NULL HYPOTHESIS-5**

There is no significant difference between the high school students with respect to Problem Solving Ability based on Joint family and Nuclear Family student

**TABLE -5 Table shows the significance difference between the High school students with respect to Problem solving ability based on their Types of Family using Mean scores**

Variables	Gender	N	Mean	SD	t-value	LS
Problem Solving Ability	Joint	139	103.31	21.879	1.307	NS
	Nuclear	161	106.81	24.125		

**INFERENCE:** From the above table, it is observed that the mean score of the variable Problem solving Ability is greater for Nuclear family students (106.81) than for Joint type family students (103.31). The calculated t-value (1.307) is less than the table value (1.96) at 0.05 level and hence the difference is no significant. Therefore, the above null hypothesis is accepted

**NULL HYPOTHESIS -6**

There is no significant difference among the high school students with respect to Problem Solving Ability on their Types of Management

**TABLE 6 Table shows the significance difference between the High school students with respect to Problem solving ability based on their Types of Management**

Variables	Types of Management	N	Mean	SD	t-value	LS
Problem Solving Ability	Govt	100	95.66	21.899	8.521	0.01
	Aided	100	122.02	21.848		
	Aided	100	122.02	21.848	9.087	0.01
	Private	100	97.88	15.111		
	Govt	100	95.66	21.899	0.834	NS
	Private	100	97.88	15.111		

**INFERENCE:** From the above table the t-value is found to be significant difference in the problem Solving Ability of high school students with respect to Government Vs Aided schools. Aided Vs Private school and Govt Vs Private School. So in these group only the hypothesis is not accepted. In other group table value shows no significance. So the null hypothesis is not accepted

**FINDINGS OF THE STUDY**

1. It is found that the level of problem solving ability among high school students is High
2. It is found that there is a significance different between the Male and Female high school students on their problem solving ability
3. It is found that there is no significance different between the Urban and Rural high school students on their problem solving ability
4. It is found that there significance different between the Government Vs Aided high school students on their problem solving ability
5. It is found that there no significance different between the Government Vs Private high school students on their problem solving ability
6. It is found that there significance different between the Private Vs Aided high school students on their problem solving ability
7. It is found that there is a significance different between the Tamil medium and English Medium high school students on their problem solving ability
8. It is found that there is no significance different between the Joint and Nuclear Family high school students on their problem solving ability.

**SUGGESTIONS FOR FURTHER RESEARCH**

The present study brings to light a good number of new areas to be studied by the future researchers. The areas and variables which are not covered by this study may be put to test to enlighten the factors associated with the inculcation and development of Problem Solving Ability and scientific attitude. So, the researchers may think of the following areas to study in detail:

1. Studies on problem solving ability and scientific attitude may be extended to the other education level, viz. primary and college levels at district and state levels.
2. Studies about the scientific attitude and problem solving ability possessed by the teaching community may be taken up as their factor has a great role to play in the development of Scientific Attitude and Problem Solving Ability in the class room.
3. Studies may be taken up to find out the effect of independent variables on dependent variables in the cases of controlled and experimental groups as their study has not used any special controlled variables.
4. Studies may be conducted to find out the effect of environment and Psychological factors on the inculcation and development of Problem Solving Ability and Scientific Attitude.

## CONCLUSION

Finally, while concluding, the investigator has found that the level of problem solving ability among high school students is High .However, the students in the English medium performed much better than the Tamil medium students In the study on Problem solving ability of male and female students, it was found that males have an edge over females in this ability. However while learning about the Problem solving ability, the limitations of this study may be looked upon. Since the study involved only some High school students, Problem solving ability may differ on a larger population or even among students in other institutions such as polytechnics, Higher secondary students etc. Therefore, more in depth studies or researches needs to be conducted, to ascertain the Problem Solving Ability of High school students in Chengalpattu

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