



## Study of Problem Solving Ability Among Senior Secondary School Students.

### KEYWORDS

**Dr.Nand Kishor Choudhary**

Principal Babe Ke College of Education Daudhar Moga

### INTRODUCTION

Problem solving is mental process and is part of the larger problem process that includes problem finding and problem shaping. Problem solving has been defined as higher order cognitive process that requires the modulation and control of more routine or fundamental skills.

### PROBLEM SOLVING ABILITY

Problem solving is a process. It requires critical thinking, ability to make decisions, use of correct strategy to find the situation and check the results. Educationists, now believe that the pupil be taught to think how to solve problem as a reaction against the alleged traditional conception of learning as the accumulation of facts or information or careful and clear habits of thinking. Problem solving is thinking in terms of some problems and solutions. **Accord-ing To Skinner (1968)** defined that "Problem solving is the framework or pattern within which creative thinking and reasoning takes place".

**According To Reed (2000)** defined that "Problem solving is a mental process that involves discovering analyzing and solving problems. The ultimate goal of problem solving is to overcome obstacles and find a solution that best resolves the issue." So, problem solving performances requires much more than a simple coming back of facts or the use of well defined procedure. One has to utilized one's thinking and reasoning power and engages in serious mental work by systematically following some well organized steps for removal of difficulties and obstacles.

### Strategies of problem solving

The task of problem solving depends to great extent upon the nature of the problem, the means and material available for its solution and the ability and competency of the problem solver. A few special strategies which are given below can help a lot in finding the ways of solving the problem.

**Algorithms** - It is defined as a strategy for arriving at a solution. The method exhausts every possible step to land up at the correct solution. It is infact a set of rules which whom followed, must lead to the solution because it is systematically applied in a specific order, to all possibilities and their outcomes.

**Analogy** - In this strategy a person makes use of his own experiences, training and practice work carried out to find a solution for similar problem. here, while solving a particular problem, one formulates or hypothesizes another problem, similar to that in hand, but with a known solution; and this known solution is then used to desire a solution for the current problem.

**Heuristics** - It represent such problem solving strategy in which we make use of some mental shortcuts or rules of thumb for restructuring a problem in a certain way to arrive at a quick solution.

**Working Background** - Starting with the desire result (what is to be found out or aimed at) and trying to work backwards until the initial state is attained.

**Means and Analysis** - While solving a problem, it is always better to have a proper analysis of the nature of the problem in perfect coordination with the means, materials and resources in our hand. Where we have to reach? What needs to be done? What type of solution the problem needs? All these issues should be carefully analyzed in relation to the means available for coping with these issues.

**Hill Climbing** - Hill climbing is a problem solving strategy in which individuals make any move that brings them closer to the problem goal.

### Steps involves in problem solving

Mathematical problem solving is the nucleus of any mathematics curriculum that seeks promote creativity in students. There are various steps involved in problem solving. These are **Lipshitz & Barllan 1996** believe that four major aspects:-

- Stage I Problem identified and understood
- Stage II Potential solutions generated
- Stage III Solutions examined and evaluated
- Stage IV Solutions tried results evaluated.

Effective problem solving involves four stages. First the problem must be identified and understood. Next potential solutions must e generated. Third these must be examined and evaluated. Finally, the solutions must be tried and their results evaluated.

In order to correctly solve a problem, it is important to follow a series of steps. Many researchers refer to this as the problem - solving cycle.

**Sternberg (2003)** advocated seven steps associated with the task of problem solving.

- a. Identifying the problem.
- b. Define the problem.
- c. Forming a strategy.
- d. Organizing information.
- e. Allocating Resources.
- f. Monitoring Progress.
- g. Evaluating the results.

The problem solving ability is an individual phenomenon and involves the exercise of cognitive abilities of higher order. Often, there is considerable movement bank and forth as one move from one step in the task of problem solving. **Kemler(1978)** "The last several years, a good deal of progress has been made in the understanding of children's problem-solving strategies in discrimination tasks & in the description of related developmental trends." **Piemonte (1981)** "Good problem solvers emphasize problem structures while poorer ones tend to emphasize problem details. He found that only the students ability to classify problems according to their mathematical structure related highly to their solving problem competence." **Goldstein and Levin (1987)** defined "Problem solving as higher order cognitive process that requires that modulation and control of more routine or fundamentals skills." So, problem solving performances requires much more than a simple coming back of facts or the use of well defined procedure. One has to utilized one's thinking and reasoning power and engages in serious mental work by systematically following some well organized steps for removal of difficulties and obstacles.

### JUSTIFICATION OF THE STUDY

It is the common fact of life that we all have problems and that we are often frustrated or we tend to lash out because of our inability to find accessible and reliable information about our problems. This specialist site fills this need – as are pragmatic friend for solving our educational problems and the main aim of this study is to introduce to the world the educational solutions module of the world's most recent personal and professional problem solving site.

Almost everything that an individual does involves problem solving or behavior that is directed towards achieving a good (**Anderson, 1985**). Any problem situation contains three important characteristics, given, a goal, and obstacles. The givens are the elements, their relations, and the conditions that compose the initial state. Problem solving is an important aspect of human development that must be further explored.

### STATEMENT OF THE STUDY STUDY OF PROBLEM SOLVING ABILITY AMONG SENIOR SECONDARY SCHOOL STUDENTS

#### OBJECTIVES

1. To find out the difference of problem solving ability between Moga and Hoshiarpur Districts Senior Secondary school.
2. To find out the difference problem solving ability between rural and urban Senior Secondary school.
3. To find out the difference problem solving ability between male and female Senior Secondary school.

#### HYPOTHESES

1. There will be no significant difference in problem solving ability between Moga and Hoshiarpur Districts of Senior Secondary School.
2. There will be no significant difference in problem solving ability between rural & urban Senior Secondary school.
3. There will be no significant difference in problem solving ability between male & female of Senior Secondary School.

#### METHOD OF THE STUDY

A Study of Problem Solving Ability among Senior Secondary school Students was Descriptive Survey Method.

### SAMPLE OF THE STUDY

160 students of senior Secondary Students of Districts were selected to constitute the sample. Sample was collected by random method.

### TOOLS USED

Problem Solving Ability by **Roop Rekha Garg**, Agra College, Agra.

### STATISTICAL TECHNIQUES USED

Mean, Standard Deviation, t- test

### INTERPRETATION OF DATA

It's the design of the study was done with independent variable Problem Solving Ability in two localities Hoshiarpur and Moga District . Here the area was Urban and Rural, Male and Female students were taken.

### HYPOTHESIS – 1

There will be no significant difference in the Problem Solving Ability between Moga and Hoshiarpur District senior secondary students.

**Table No. 1**

Table showing Mean, SD and t-value of Problem Solving Ability between Moga and Hoshiarpur District senior secondary school students.

Category	N	Mean	S.D	t-value	Level of significance
Moga	80	9.837	2.395	0.08863	Insignificant
Hoshiarpur	80	9.875	2.93		

$P < 0.05 = 1.97$ ,  $P < 0.01 = 2.60$  at df 158

Above table shows that obtained t-value (0.08863) is less than the table value at both level of significance i.e. 0.05 and 0.01 at df. 158. Hence the null hypothesis, "There will be no significant difference in the Problem Solving Ability between Moga and Hoshiarpur District senior secondary students" is **accepted**. It may conclude that Moga and Hoshiarpur district senior secondary school students are similar on Problem Solving Ability.

### HYPOTHESIS – 2

There will be no significant difference in the problem solving ability between Rural and Urban senior secondary students.

**Table No. 2**

Table showing Mean, SD and t-value of Problem Solving Ability between Rural and Urban senior secondary school students.

Category	N	Mean	S.D	t-value	Level of significance
Urban	80	9.725	2.431	0.5373	Insignificant
Rural	80	9.95	2.85		

$P < 0.05 = 1.97$ ,  $P < 0.01 = 2.60$  at df 158

Above table shows that obtained t-value (0.5373) is less than the table value at both level of significance i.e. 0.05 and 0.01 at df. 158. Hence the null hypothesis, "There will be no significant difference in the problem solving ability between Rural and Urban senior secondary school students" is **accepted**. It may conclude that Rural and Urban senior secondary school students are similar on Problem Solving Ability.

**HYPOTHESIS – 3**

There will be no significant difference in the Problem Solving Ability between male and female senior secondary students.

**Table No. 3**

Table showing Mean, SD and t-value of Problem Solving Ability between Male and female senior secondary school students.

Category	N	Mean	S.D	t-value	Level of significance
Male	80	9.8	2.623	0.625	Insignificant
Female	80	9.912	2.73		

$P < 0.05 = 1.97$ ,  $P < 0.01 = 2.60$  at  $df = 158$

Above table shows that obtained t-value (0.625) is less than the table value at both level of significance i.e. 0.05 and 0.01 at  $df = 158$ . Hence the null hypothesis, "There will be no significant difference in the problem solving ability between Male and female senior secondary school students" is **accepted**. It may conclude that Male and Female senior secondary school students are similar on Problem Solving Ability.

**MAIN FINDINGS**

- Moga and Hoshiarpur district senior secondary school students are similar on Problem Solving Ability.
- Rural and Urban senior secondary school students are similar on Problem Solving Ability.
- Male and Female senior secondary school students are similar on Problem Solving Ability.

**EDUCATIONAL IMPLICATIONS OF THE STUDY**

The study is addressed to those readers who may have an educational problem bogging them and who may therefore be looking for a way out of their predicament. The reader may be a parent, child or student. The finding may be particularly for educational planners, demographers, teachers, psychologists, physiologists, neurologists, administrators, policy makers and teacher educators. The most important goal for every institution of school education is academic development. However, in today's diversified society, students need much more to lead healthy and productive lives concerning academic career and personal goal. The education academy is private school created to address the need of elementary school children who have learning disabilities or are experiencing behavioral disorders in public school classroom.

**REFERENCE**

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