

# Problem solving ability of adolescents in relation to their study habits and demographic variables

<sup>1</sup>Ms. Gurjit Kaur , <sup>2</sup>Dr. Sarbjit Kaur Ranu<sup>2</sup>

<sup>1</sup>Research Scholar, <sup>2</sup>Associate Professor

<sup>1</sup>Panjab University .Chandigarh

<sup>2</sup>GHG Khalsa College of Education Gurusar Sadhar) Panjab, India

Email - gshaan318@gmail.com

**Abstract:** *Problem solving is that process which starts from cognitive situations and ends in achieving desired goals. It is the ability to think and reason on certain levels of complexity. People who have learned effective problem solving method are able to solve problems at higher levels of complexity than more intelligent people who have not such training. The present study investigated problem solving ability of adolescents in relation to their study habits and demographic variables. It was found that a positive and significant relationship exists between problem solving ability and study habits of adolescents. Only no significant difference exists between male and female adolescents on the variable of problem solving ability.*

**Key Words:** *Problem solving ability, study habits, demographic variables.*

## 1. INTRODUCTION:

A problem generally contains situation that encourage someone to solve it, but do not know firsthand what is to be done first to solve them. To attain the ability in problem solving, one must have a lot of experience in solving different problems. A question or a problem is said to be a problem if the solution requires some originality, understanding and thinking or imagination of everyone. Problem solving is the process by which the child goes from the task or problem as he sees it to a solution which, for him, meets the demands of the problem. Problems arise when children are confronted by an obstacle or a novel situation for which they have no direct answer in behaviour. Therefore, problem solving is likely to be more complex than the associative thinking and is more dominated by the objectives, external obstacles or situation than by the autistic factors which affect children's fantasy. Problems can be practical or speculative in nature. **Mayer and Wittrock (1996)** explain that problem solving is cognitive processing directed at achieving a goal when no solution method is obvious to the problem solver? This definition consists of four parts: (1) problem solving is cognitive, that is, problem solving occurs within the problem solver's cognitive system and can only be inferred from the problem solver's behaviour. (2) Problem solving is a process i.e., problem solving involves applying cognitive processes to cognitive representations in the problem solver's cognitive system. (3) Problem solving is directed, that is, problem solving is guided by the problem solver's goals, and (4) Problem solving is personal, that is, problem solving depends on the knowledge and skill of the problem solver. **Mangal (2012)** states, "Problem-solving is a deliberate and serious act, involves higher thinking and systematic planned steps for the realization of set goals. One can adopt some useful strategies for effective problem solving in the shape of algorithms (strategy for generating a solution by exhausting every possible answer for ending up with the correct solution), heuristics (rule of thumb for arriving at a quick solution) like sub-goal analysis, means and ends analysis, working backward and using an analogy etc., a trial-and-error (involves trying a number of different solutions and ruling out those that do not work) and insight (occur because one realize that the problem is actually similar to something that they have dealt with in the past)".

### 1.1. Study Habits:

Study habits are regular way of exercising and practicing the abilities for learning. It includes students' habit of concentration, notes taking, time budgeting and study methods. These are techniques, which a student employs to go about his or her studies, which are consistent and have become stereotyped as a result of long application or practice. Study habit indicates settled tendency of practice and thought to acquire knowledge and information from the book. Study habit is auto nominally, learned behavior pattern that allow the student to acquire how to study. A good study habit has essentially developed a behavior pattern which enables him to sit down and begin working on his assignment with a minimum fuss and maximum concentration.

**Tripathi et al. (2013)** examined in the study of learning environment in relation to problem solving ability of senior secondary level. A sample was taken from 120 senior secondary schools. Random sampling technique was employed to collect data from Jaipur city, Rajasthan. The study showed that the effect of learning environment of both

government and private schools place impact on the problem solving ability of students at senior level. Kaur(2016) found in her study the influence of types of school, cognitive styles and their interaction on study habits of 9<sup>th</sup> class students. It examined that mean score of study habit and cognitive style differ significantly. It was also noticed that study habits were also found to be independent of interaction between types of schools and cognitive styles.

### 1.2. OBJECTIVES OF THE STUDY:

- To compare problem solving ability and study habits and parental encouragement on the basis of location of adolescents.
- To compare problem solving ability and study habits on the basis of type of school of adolescents.
- To compare problem solving ability and study habits on the basis of gender of adolescents.
- To study relationship between problem solving ability and study habits of adolescents

### 1.3. HYPOTHESES OF THE STUDY:

- There will be no significant difference among problem solving ability and study habits on the basis of location of adolescents.
- There will be no significant difference among problem solving ability and study habits on the basis of type of school of adolescents.
- There will be no significant difference among problem solving ability and study habits on the basis of gender of adolescents.
- There will be no relationship between problem solving ability and study habits of adolescents.

### 1.4. SAMPLE:

The sample consisted of randomly selected 600 students from 10<sup>th</sup> class of Moga and Ludhiana districts.

### 1.5. TOOLS USED:

- Problem Solving Ability Test(Self Constructed)
- Study Habits Inventory(Self Constructed)

## 2. METHODOLOGY:

In the present study descriptive survey method was used. Data was analyzed with descriptive and inferential statistics (t-test) and correlational analysis.

## 3. ANALYSIS, DISCUSSION AND FINDINGS:

**Table 1 showing significance of difference between mean scores of rural and urban adolescents on the variables of problem solving ability and study habits (N=600)**

Variable	Group	N	Mean	SD	SE <sub>M</sub>	t-ratio	Sig./Not Sig.
Problem Solving Ability	Rural Adolescents	300	15.91	2.98	0.17	2.74	Sig. at .01
	Urban Adolescents	300	16.60	3.15	0.18		
Study Habits	Rural Adolescents	300	94.53	13.27	0.77	8.13	Sig. at .01
	Urban Adolescents	300	107.50	24.22	1.40		

Table 1 reveals the mean scores of rural and urban adolescents on the variable of problem solving ability are 15.91 and 16.60 respectively. The t-ratio is calculated as 2.74 with  $d_f=598$  which is significant at .01 level. This reveals that a significant difference exists between rural and urban adolescents on the variable of problem solving ability. As mean scores of urban adolescents on the variable of problem solving ability was found to be higher than that of rural adolescents, it may further be concluded that urban adolescents have higher problem solving ability as compared to their rural counterpart.

The mean scores of rural and urban adolescents on the variable of study habits are 94.53 and 107.50 respectively. The t-ratio is calculated as 8.13 with  $d_f=598$  which is significant at .01 level. This reveals that a significant difference exists between rural and urban adolescents on the variable of study habits. As mean scores of urban adolescents on the variable of study habits was found to be higher than that of rural adolescents, it may further be concluded that urban adolescents have better study habits as compared to their rural counterpart.

As a significant mean difference was found in problem solving ability and study habits of adolescents with respect to locale (rural and urban), therefore, **Hypothesis 1** stating, ‘There will be no significant difference among problem solving ability and study habits on the basis of location of adolescents’ stands rejected.

**Table 2 showing significance of difference between mean scores of adolescents from government and private schools on the variables of problem solving ability and study habits (N=600)**

Variable	Group	N	Mean	SD	SE <sub>M</sub>	t-ratio	Sig./Not Sig.
Problem Solving Ability	Adolescents from Govt. Schools	300	15.94	3.18	0.18	2.55	Sig. at .05
	Adolescents from Private Schools	300	16.58	2.96	0.17		
Study Habits	Adolescents from Govt. Schools	300	97.14	17.89	1.03	4.70	Sig. at .01
	Adolescents from Private Schools	300	104.89	22.30	1.29		

Table 2 shows the mean scores of adolescents from government and private schools on the variable of problem solving ability are 15.94 and 16.58 respectively. The t-ratio is calculated as 2.55 with  $d_f=598$  which is significant at .05 level. This reveals that a significant difference exists between adolescents from government and private schools on the variable of problem solving ability. As mean scores of adolescents from private schools on the variable of problem solving ability was found to be higher than that of adolescents from government schools, it may further be concluded that adolescents from private schools have higher problem solving ability as compared to their rural counterpart.

The mean scores of adolescents from government and private schools on the variable of study habits are 97.14 and 104.89 respectively. The t-ratio is calculated as 4.70 with  $d_f=598$  which is significant at .01 level. This reveals that a significant difference exists between adolescents from government and private schools on the variable of study habits. As mean scores of adolescents from private schools on the variable of study habits was found to be higher than that of adolescents from government schools, it may further be concluded that adolescents from private schools have better study habits as compared to their rural counterpart.

As a significant mean difference was found in problem solving ability and study habits of adolescents with respect to type of schools (government and private), therefore, **Hypothesis 2** stating, ‘There will be no significant difference among problem solving ability and study habits on the basis of type of schools of adolescents’ stands rejected.

**Table 3 showing significance of difference between mean scores of male and female adolescents on the variables of problem solving ability and study habits (N=600)**

Variable	Group	N	Mean	SD	SE <sub>M</sub>	t-ratio	Sig./Not Sig.
Problem Solving Ability	Male Adolescents	300	16.23	3.14	0.18	0.24	Not Sig.
	Female Adolescents	300	16.29	3.03	0.18		
Study Habits	Male Adolescents	300	96.91	17.22	0.99	4.99	Sig. at .01
	Female Adolescents	300	105.12	22.73	1.31		

Table 3 shows the mean scores of male and female adolescents on the variable of problem solving ability are 16.23 and 16.29 respectively. The t-ratio is calculated as 0.24 with  $d_f=598$  which is not significant. This reveals that no significant difference exists between male and female adolescents on the variable of problem solving ability. As no significant difference was found in problem solving ability of male and female adolescents, it may be concluded that gender has no significant role in problem solving ability of adolescents.

The mean scores of male and female adolescents on the variable of study habits are 96.91 and 105.12 respectively. The t-ratio is calculated as 4.99 with  $d_f=598$  which is significant at .01 level. This reveals that a significant difference exists between male and female adolescents on the variable of study habits. As mean scores of

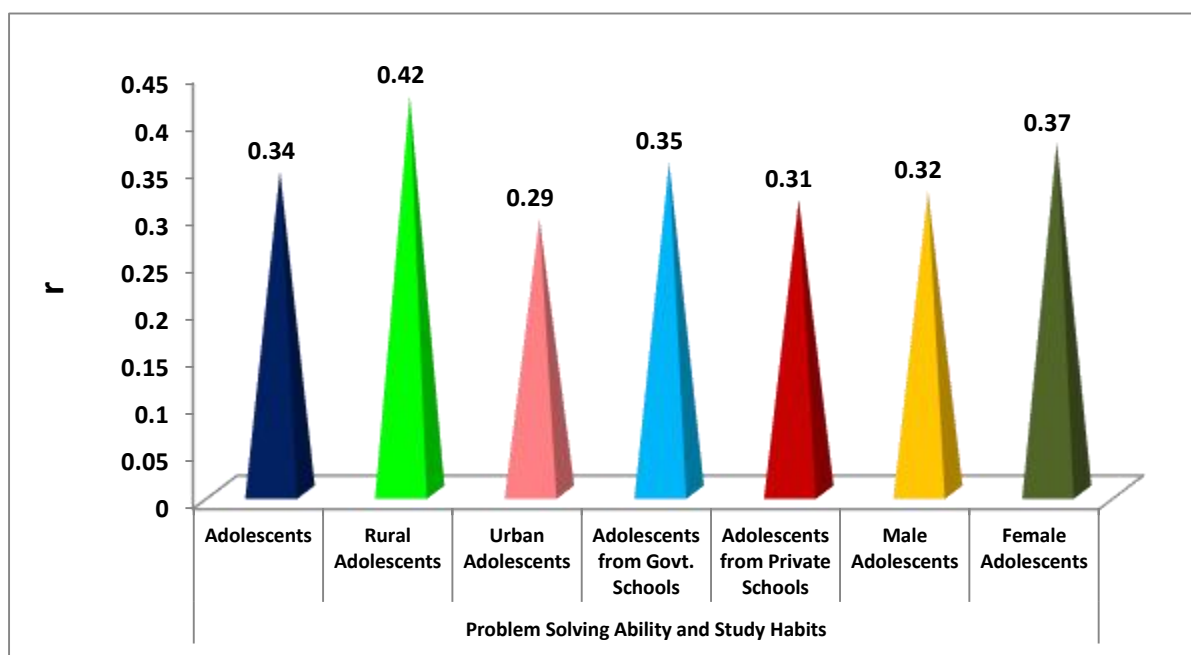
female adolescents on the variable of study habits was found to be higher than that of male adolescents, it may further be concluded that female adolescents have better study habits as compared to their male counterpart.

No significant mean difference was found in problem solving ability with respect to gender (male and female) but significant difference exists between male and female adolescents on the variable of study habits, therefore, **Hypothesis 3** stating, ‘There will be no significant difference among problem solving ability and study habits on the basis of gender of adolescents’ stands partially rejected.

**Table 4 showing coefficient of correlation between problem solving ability and study habits of adolescents**

Variables	Category	N	Correlation
Problem Solving Ability and Study Habits	Adolescents	600	0.34**
	Rural Adolescents	300	0.42**
	Urban Adolescents	300	0.29**
	Adolescents from Govt. Schools	300	0.35**
	Adolescents from Private Schools	300	0.31**
	Male Adolescents	300	0.32**
	Female Adolescents	300	0.37**

\*\* Significant at 0.01 level



**Figure 4** coefficient of correlation between problem solving ability and study habits of adolescents

Table 4 and figure 4 show the coefficient of correlation between problem solving ability and study habits of total sample of adolescents, rural adolescents, urban adolescents, adolescents from government schools, adolescents from private schools, male adolescents and female adolescents were 0.34, 0.42, 0.29, 0.35, 0.31, 0.32 and 0.37 respectively, all of which were positive and significant at 0.01 level of confidence. This shows that a positive and significant relationship exists between problem solving ability and study habits of adolescents. Therefore, **Hypothesis 4** stating, “There will be no relationship between problem solving ability and study habits of adolescents” stands rejected.

#### 4. CONCLUSIONS:

- Firstly, the study revealed that significant difference among problem solving ability and study habits on the basis of location of adolescents was found.
- Secondly, the study revealed that significant difference among problem solving ability and study habits on the basis of type of schools of adolescents was found.
- Thirdly, the study revealed that significant difference among problem solving ability and study habits on the basis of gender of adolescents was found partially.
- Fourthly, the study revealed that relationship between problem solving ability and study habits of adolescents was found.

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