

## **PROBLEM SOLVING ABILITY OF SENIOR SECONDARY STUDENTS IN RELATION TO ACADEMIC ACHIEVEMENT**

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### **Abstract**

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*Education is an essential human virtue, necessity of society, bases of good life and sign of freedom. Education plays an imperative role in the advancement of individual and society. Education is the most powerful means of modification of human behavior. It is means of development of personality and values among the human beings. It transforms a person to live a better life and even in a social well-being and promote good habits.*

*The present study conducted on a sample of 200 students Senior secondary students drawn randomly from Government Senior Secondary Schools of Kullu District. Result indicates that the students having high academic achievement were found better problem solving ability as compared to the students having low academic achievement.*

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**Key words:** *Problem Solving Ability, Academic Achievement,*



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## **INTRODUCTION**

As we all know that man comes into this world endowed with his drives, emotions and many others abilities which enable him to adjust adequately with his environment. Every individuals ought to come across problems in the journey of life .The life of an individual is becoming more and more complex with advancement in socio-economic and technological field. There are many problems to reach the goal. Solving a problem is a complex cognitive process that characterizes one of the most intelligent human activities which involves the use of some novel methods, higher thinking and systematic planned steps for the realization of set goals. Problem solving ability plays an important role in the academic achievement of students. It has also a great influence on the academic achievement of students.

Academic achievement means knowledge, understanding or skill acquired after instructions and training or subject of study. It is generally measured by means of total marks of the students obtained by them in a particular class. Academic achievement depends upon different factors which directly or indirectly influence. Thus achievement means all those

behavioral changes which take place in the individual as a result of learning experience of various kinds .It has been found that person having higher intelligence and reasoning ability can solve complex problem quickly.

### **CONCEPT OF PROBLEM SOLVING ABILITY**

Problem solving ability is a capacity of an individual to form a pattern of framework, creative thinking and reasoning. It is the ability to think and reason on given levels of complexity. Skinner (1968) had defined problem solving as a process of overcoming difficulties that appear to interfere with the attainment of goal. It is a procedure of making adjustment in spite of interferences. People who have learned effective problem solving techniques are able to solve problems at higher levels of complexity than more intelligent people who have not such training. Problem solving ability is also selected to term such as thinking, reasoning, decision making, critical thinking and creative thinking. Problem solving ability is a cognitive process directed to achieving a goal when no solution method is obvious to the problem solver. Problem solving is a goal directed and motivated by the need to reduce the discrepancies between one state of an affairs and another.

Problem solving ability involves both analytical and creative skills, fostering skills required for students to take control of their journey by taking them problem skills powers student's effective problem solving ability is about making informed choices in a variety of situation.

### **IMPORTANCE OF PROBLEM SOLVING ABILITY**

Problem solving ability play a vital role in developing of student's ability to learn, think, feel confident and competent at understanding world. It is ability to think logically and creatively while using and applying facts to solve problems. Problem solving ability helps students to understanding of problem deeply. Students are quite involved with the problem to solve .It helps them to gain a positive attitude towards the subject. Problem solving ability helps students to develop enjoyment, learning and social skills cooperation, communication. Kamaruddin and Hazni (2010) recommended that the problem solving ability is very important especially for students. Students can improve their learning ability if the teachers teach them with the implementation of problem solving. It can also help an individual to learn habits of using problem solving ability in the solution of the problem.

## **CONCEPT OF ACADEMIC ACHIEVEMENT**

Academic achievement is the educational goal that is achieved by a student, teacher or institution over a certain period. This is measured either by examinations or continuous assessment and the goal may differ from an individual or institution to another. Academic achievement is a term used in school when a student does well in academics. They achieve or do well in an area of school and do well in their studies. The academic performance of student heavily depends upon the parental involvement in their academic activities to attain the higher level of quality in academic success (Barnard, 2004). In an academic setting, achievement can be referred to as “academic achievement”.

Academic achievement is observed to be the direct outcome of learning. It is the main indicator that learning has occurred. Driscoll (2005) describes learning as a “persisting change in academic achievement or academic achievement potential that results from experience and interaction with the world”. Therefore, for learning to be observed, there must be demonstration through achievement on related tasks. Though academic achievement heavily depends on learning, low achievement may not necessarily reflect inadequacy in learning. Academic achievement, as demonstrated using scores on tests, has over the years been used to determine the competence of a student in a course. Many factors affecting the academic achievement such as pupil’s socio-economic background, intelligence, language as medium of instruction, various personality traits of students etc. According to Eyeseneck Arnold in the encyclopedia of Psychology (1972), “Achievement is defined as, general term for the successful attainment of goal requiring certain effort.”

Academic achievement is all about what students can actually do when they have finished course of study. Academic achievement in this study has been taken as the total marks secured by the students in their 10th class board examination.

## **IMPORTANCE OF ACADEMIC ACHIEVEMENT**

The school is concerned with the all round development of the physical, social aesthetic and emotional qualities of the children. During the process of education of the child has to be continuously evaluated with regards to the level of intelligence, attainment, aptitudes and interest and educational objectives that are determined by the needs of these learners, the demand of the society and the psychology of learning. This academic achievement of the child is assessed by the teachers in the educational progress through the process of education. The parental behavior also has much influence on the Childs academic achievement.

It is essential to develop the attitude of the heads toward the profession subjects and various activities which are going on the school so as to approve the academic achievement of the school.

### **OBJECTIVES OF THE STUDY**

1. To find out the various levels of problem solving ability among senior secondary school students.
2. To study the effect of academic achievement on problem solving ability in senior secondary school students.

### **REVIEW OF LITERATURE**

Eva (2010) explained more that the straightforward way to solve a problem is to remember how the problem was solved.

Lakshmana (2010) analyzed the impact of academic motivation and perception of classroom climate on academic achievement. The result indicated that there is a positive correlation among academic motivation, perceptions of classroom climate and academic achievement. Positive impact was found. Girls, students from rural area and students studying in Government schools were found to be at low scores and were to be improved in various aspects.

Kazmi (2011) conducted the study to evaluate the impact of fathers' style of dealing with their children at home and their academic achievement at school. The result of this study revealed that father had significant relationship with academic achievement. Parenting styles are found to be more important that influence significantly the educational achievement of the students.

Polawanitch (2011) recommended that there are no best ways to solve the problem but people should understand the problem, the environment of the problem and people who get involved with that problem and eventually make decision.

Sharma and Tahira (2011) investigated the influence of parental education parental occupation and family size on science achievement of the secondary school students in western Uttar Pradesh in India.

Chandra and Azimuddin (2013) found influence of socio economic status on academic achievement of secondary school students of Lucknow city. Socio economic has always influenced the academic achievement students.

Agnihotri (2015) investigated problem solving ability among senior secondary school students of himachal Pradesh. Result revealed that the students of science and commerce stream have the higher level of problem solving ability as compare to the students of arts stream.

Kaur (2016) studied on academic achievement of adolescent students in relation to their self-concept and anxiety. The findings of study revealed that there is positive relationship between academic achievement and anxiety of adolescent students.

Sutha. N, Vanitha j (2017) recommended that there is no significant relationship between problem solving ability and achievement in physics of higher secondary school students.

### **METHODOLOGY**

In the present study L.N.DUBEY'S Problem Solving Ability test was used to collect data from 200 senior secondary school students.. To collect Academic Achievement data investigator consulted the examination in charge of each selected school and enquired about the marks obtained by 11th class students in previous annual examination i.e. 10th class. The marks were pooled together, added and then percentage found in order to obtain academic achievement index scores of students. To achieve the objectives of the study, the Survey Method was used.

### **STATISTICAL TECHNIQUES USED**

In order to achieve the objectives of the study the mean, standard deviation and 't' test techniques were carried out to study the general nature of sample in relation to academic achievement and Problem Solving Ability.

### **ANALYSIS AND INTERPRETATION**

The data collected through proper tools were analyzed by using proper statistical techniques . For the purpose of analysis the gain score obtained on problem solving abilities by the students were taken into consideration.

**Table: 1 Levels of Problem Solving Ability of Senior Secondary School Students**

Levels	Number of students	Percentage
Very High Problem Solving Ability	4	2
High Problem Solving Ability	15	7.5
Average Problem Solving Ability	27	13.5
Low Average Problem Solving Ability	31	15.5
Very Low Problem Solving Ability	123	61.5

It is evident from the table:1 that 3.50% students have very high problem solving ability, 9% students high problem solving ability , 13.50% students have average problem solving ability, 15.5% students have low problem solving ability whereas 61.5% of students have very low problem solving ability.

It can be concluded from above table that large number of students possesses very low level of problem solving ability.

**Table: 2 Significance of the difference between Problem Solving Ability and Academic Achievement of Senior Secondary School Students**

Group	No. of students	Mean	SD	t-value	Level of significance
High Level (PSA)	27	11.5	2.73	4.46	0.05
Low Level (PSA)	27	8.3	2.5		

It is evident from table :2 that 't' value of high and low level of problem solving ability came out to be 4.46 which is highly significant at 0.05 level of significance From this it may be interpreted that the two groups differ in influencing the problem solving ability of senior secondary school students. Since the 't' value for the levels of problem solving ability was found significant at 0.05 level of significance, the mean score for high level was found to be 11.5 and for low level came out to be 8.3 hence there was a difference of 3.2 points per subjects. The mean for high level was higher than the mean for low level by 3.2 points. This indicates that there is significant difference in problem solving ability of senior secondary school students in relation to Academic achievement.

It was concluded that the students having high academic achievement were found better problem solving ability as compared to the students having low academic achievement.

## CONCLUSION

On the basis of above it can be concluded that academic achievement has impact on problem solving ability. A proper academic environment can enhance problem solving ability of senior secondary school students. In order to improve problem solving ability of students at senior secondary school level, emphasis must be given on the organization of quizzes debates, numerical aptitude and suitable instructional methods. Arrangements for group discussions, lectures by eminent person and teachers, enough books in library, writing and quiz competition should be provided enough opportunities to participate in the co-curricular activities at school level. Academic Achievement helps to inculcate better problem solving ability. The students can be provided with an environment, which is suitable according to their behavior so that their creativity may be flourished. Moreover, home and school can play important roles in developing a positive attitude for the development of creativity among students. Teacher can use pedagogical strategy to foster problem solving ability. The teaching methodology and technique may need to be revised to increase the problem solving ability.

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