

# A Study of Problem Solving Ability and Creativity among the Higher Secondary Students

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## Abstract

*Creativity is universal. Every one of us possesses creativity to some degree. Although creativity abilities are natural endowments. Though creativity expression, something new or moral is produced. Problem-solving ability is a mental process that is the conducting part of the larger problem process that includes problem finding, shaping, and reaching towards a final goal. A problem is any situation where you have an opportunity to make a difference to make things better Sharma- 2006. There is a need for the development of the same among school students who will become the future citizens of the country. This paper presents our attempt to study problem-solving ability and creativity among higher secondary students in Nagapattinam District. The results of the study indicate that the level of problem-solving ability among the higher secondary students is high. The results of the study indicate that the level of creativity among the higher secondary students is moderate. There is no correlation between creativity and problem-solving ability among the higher secondary students, there is no significant difference between boys and girls concerning their problem-solving ability, and There is no significant difference between higher secondary boys and girls in their creativity.*

**Keywords:** Natural Endowments, Flexible Structures, Solve Irrational, Blind Problems, Innovative, Decontextualized

## Introduction

Creativity is about unusual or surprising to create an environment that allows for creativity to emerge. This requires abandoning a rule-driven environment and replacing this with more flexible structures and practices that allow the room for something novel and new. The present-day education gives undue importance to memory and theoretical aspect of knowledge. Over the spirit of originality, creativity should form the focal point for the design education now. Today the role of design is fast changing from that of being artistic and creative to that of being innovative and strategic, from that of being just beautifiers to that of being different, creating utility and value. In this context, the function and nature of design education have changed too. The traditional learning by doing methodology has to be complemented with learning by thinking as well. Stress needs to be given to the modes of teaching that transform and affects the minds as much as or more than the hands. This can be possible only if the curriculum is reframed to adapt to a changing paradigm.

To all intends and purposes, celebration of creativity has become ineluctably an international pervasive reality, whether it is considered from the view point of its importance to society or as one of the expressions of human spirits – creativity stands out as an activity to be studied, cherished and cultivated (Arieti, 1976) for its paramount importance. It is not amazing if Rousseau (1962) had observed thus: "In every underdeveloped country potential Einsteins and Fords are either herding cattle or breaking stones." To turn such men into competent and highly principled leaders of every kind is an urgent necessity.

Underdeveloped countries have remained underdeveloped because they have not earlier cultivated human resources (Curle, 1961).

The 20th-century educators have devoted much of their attention to trying to define and teach problem-solving skills. In the early 1900s, problem-solving was viewed as a mechanical, systematic, and often abstract (decontextualized) set of skills, such as those used to solve riddles or mathematical equations as these problems often have correct answers (convergent reasoning).

Man's ability to form concepts, to think, or to use language is adaptive; thus, this ability helps him to solve problems. With it, he is better equipped to cope with the demands of his environment and to achieve goals which he desires. This is the simplest definition of a problem-solving situation – the individual has a goal and does not know how to reach or achieve the goal. In one way or another, all learning situations are problems for the learner. He has a goal, and he does not know what to do. However, in most of the learning situations, the task could be achieved only through a blind, trial, and error behavior, with the experimenter reinforcing an arbitrary response. As a rule, the individual did not have all the information available, so it was impossible for him to pursue the problem as a whole. The study of such situations can tell us only something about how individuals solve irrational, blind problems.

On the other hand, when all the essential information is available to the individual and some general principles can solve the problem, then problem behavior tells us a great deal about the nature of thinking and, in some cases, about the role of language and cognitive development.

### Operational Definitions

**Creativity:** The investigator defines creativity as the ability to produce new ideas, inventions, and solutions to problems. It is a special form of thinking a way of viewing the world differently.

**Problem-solving ability:** The investigator defines problem-solving ability as one's ability to solve a problem using his past experiences and to think divergently. It needs to analyse the problem and concludes.

**Higher secondary students** are those who have

completed their S.S.L.C and are now pursuing their education at the plus one level. These students normally belong to the age group of 16 and 18. They are adolescents.

### Need and Significance of the Study

Creativity is a function of knowledge, imagination, and evaluation, which comes into play in different ways in a different situation. It is thus a part of the expanding function of human nature. It sensitizes our problem deficiencies, gaps in knowledge, besides identifying difficulties and finding solutions. Creative problem solving requires a searching, combining, synthetic mind. Experiments have shown that individuals trained to think creatively can do much better performance in producing new ideas. So, the present study is conducted to a study of Problem Solving Ability and Creativity among the Higher Secondary Students level in Nagappattinam District.

### Objectives of the Study

- To find out the level of problem-solving ability among the higher secondary students.
- To find out the level of creativity among the higher secondary school students.
- To find out the level of problem-solving ability among higher secondary students in terms of gender, standard, location of the school, subject group, age, type of management, medium, type of family, father educational qualification, mother educational qualification, father occupation, and mother occupation.
- To find out the level of creativity among higher secondary students in terms of the gender, standard, location of the school, subject group, age, type of management, medium, type of family, father educational qualification, mother educational qualification, father occupation, and mother occupation.
- To find out the correlation between creativity and problem-solving ability.

### Hypotheses of the Study

- The level of problem-solving ability among the higher secondary students is high.
- The level of creativity among the higher

secondary students is moderate.

- There is no significant disparity among gender, standard, location of the school, subject group, age, type of management, medium, type of family, father educational qualification, mother educational qualification, father occupation, and mother occupation of higher secondary students in the problem-solving ability.
- There is no significant difference among gender, standard, location of the school, subject group, age, type of management, medium, type of family, father educational qualification, mother educational qualification, father occupation, and mother occupation of higher secondary students in creativity.
- There is no correlation between creativity and problem-solving.

### Method of Study

The investigator used a survey method in this study to collect data from the school students in higher secondary school.

Survey research is a method of collecting and analyzing data obtained from a large number of respondents representing a specific population collected through highly structured questionnaires or even interviews.

### Selection of the Sample

A stratified random sampling technique was adopted for the selection of the sample. The schools selected for this study were divided into three strata, namely, government, government-aided, private school. Then a random sampling technique was adopted to select the sample. Three hundred students were taken for the study. One hundred students were drawn from a government school, and 100 from government-aided schools and hundreds from private schools. The sample consisted of 141 boys and 159 girls. The students studying in XI, XII standards were chosen as the sample.

### Tools Used in the Study

- Verbal Test of Creative Thinking.- by **B.K Passi**
- Problem Solving Ability Test developed - by **L. N. Dubey.**

### Statistical Techniques Employed

Suitable descriptive and inferential statistical techniques were used in the construction of the data to draw out a more meaningful picture of the results from the received data. In the present study, the following statistical measures were used:

- Mean
- Standard Deviation
- 't' test
- F-ratio
- Correlation

### Findings

- The level of problem-solving ability among the higher secondary students is high.
- The level of creativity among the higher secondary students is moderate.
- There is no significant difference between boys and girls concerning their problem-solving ability.
- There was no significant difference between higher secondary boys and girls in their creativity.
- There is no significant difference between rural and urban students in their problem-solving ability.
- There is no significant difference between rural and urban higher secondary students in their creativity.
- There is no significant difference between XI and XII students in their problem-solving ability.
- There is no significant difference between XI and XII students in their creativity.
- There is no significant distinction between higher secondary students their subject groups in there concerning Problem-solving ability.
- There is no significant difference between higher secondary students their subject groups in there concerning creativity.
- There is no significant difference between higher secondary students concerning their age in their problem-solving ability.
- There is no significant difference between higher secondary students concerning their age in their creativity.
- There is no significant difference between higher

secondary students in their problem-solving ability the type of administration of their school.

- There is no significant difference between higher secondary students in their creativity the type of administration of their school.
- There is no significant difference between English and Tamil medium higher secondary student in their problem-solving ability
- There is no significant difference between English and Tamil medium higher secondary students in their creativity.
- There is no significant difference between higher secondary students from a joint family and nuclear family in there to problem-solving ability.
- There is no significant difference between higher secondary students from a joint family and nuclear family in there to creativity.
- There is no significant difference between higher secondary students in their problem-solving ability concerning their father's educational qualifications.
- There was no significant difference between higher secondary students in their creativity concerning their father's educational qualifications.
- There is no significant difference between higher secondary students in their problem-solving ability concerning their mother's educational qualifications.
- There is no significant difference between higher secondary students in their creativity concerning their mother's educational qualifications.
- There is no significant difference between higher secondary students in their problem-solving ability concerning fathers' occupations.
- There is no significant difference between higher secondary students in their creativity concerning fathers' occupations.
- There is no significant difference between higher secondary students in their problem-solving ability concerning mother's occupations.
- There is no significant difference between higher secondary students in their creativity concerning mothers' occupations.
- There is no correlation between creativity and problem-solving ability among the higher secondary students.

### Educational Implications

The following are some of the recommendations to improve the creativity and problem-solving ability among the students;

- First of all, awareness is to be brought about creativity and problem-solving skills among the higher secondary school students by the administrators and educators.
- The teachers have a great responsibility in creating such a situation among the students to sharpen their creative and problem-solving skills.
- Parents should motivate and encourage their children to develop such abilities.
- Programs should be conducted in such a manner to give importance to creativity and problem-solving skills.
- The curriculum should be constructed in such a way to give importance to creativity and problem-solving ability.

### Conclusion

In general, there is a considerable extent of creativity and problem solving among higher secondary school students. Even though they vary in different measures, both creativity sand problem-solving skills go hand in hand.

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