



# Effectiveness of the Problem Solving Aptitude of Secondary School Students

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## 1. Introduction

Is a special creation of human nature? It is superior to other animals because it has higher powers. It is believed that human intelligence is superior to other animals but the concept of intelligence has become unacceptable today. Instead, different types of powers are considered important. Such various powers include numeracy, language power, reasoning power, arithmetic power, creative power, musical power, finger flexibility, hand flexibility, etc. In his three-dimensional model, a psychologist named Guilford imagined 150 different kinds of powers in humans. Thus, the present situation needs to be changed to become the best goal oriented and productive education according to the needs of the future. Thus, education is an ongoing process of putting the right energy in the right place. Today's education is child-centered education. Education gives children the opportunity to reach out to creative abilities, competencies, aptitudes and serious depths. The different courses and activities of the schools have given the child knowledge as well as ingenuity and thoughtful intellect. And that is why children can develop special abilities within themselves.

## 2. Review of related literature

Table 1: Reference review

Sr.	The name of the researcher	Title	Year	University
1	Dave D. S.	Creation of question archive based on grammar syllabus of Bhavnagar Std-8 of Gujarati subject	2001	Bhavnagar University, Bhavnagar
2	Patel R. K.	The formation and trial of the question bank on Freud's psychoanalytic argument	2016-2017	H. North Gujarat University, Patan
3	Patel D. B.	Formation and trial of question bank of instant support unit of GSET examination question paper	2016-2017	H. North Gujarat University, Patan
4	Patel P.K.	Design and trial of GSET based question paper-2 psychological support test of education.	2016-2017	Department of Education, Ganpat University, Kherwa

## 3. Research scope

From the previous research it can be seen that the question based on the grammar syllabus of Gujarati subject. For school training Research conducted on the design, testing and comparative study of thinking skills test and problem solving aptitude test for students. Therefore, there is scope for research on the design of the test.

## 4. The importance of study

In today's age, there is as much need for the development of holistic development as there is for the proper development of the specific aptitude in the child. The future of a child depends on recognizing the special strength of the child and giving it the right direction. Hence if by recognizing the special

aptitude of students studying in schools and giving them the right direction, productive citizens can be offered to the nation.

### 5. Statement of the problem

The problem is the lack of solutions for need satisfaction. A problem is a situation that arises when there is a lack of obstruction of the prevailing way of meeting a need. The activity of finding a solution to such a situation is research, so it can be said that the question that needs to be solved through research is the problem.

The research problem needs to have the following components. A person or group with a problem. The desire to accomplish certain goals. Alternative tools or work methods to accomplish the purpose. Choice of options and doubts in the mind of the researcher. The environment in which the problem is involved. The subject of the present study is as follows.

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### 6. Operational definitions of terms

In order to understand the research problem more clearly, it is necessary to specify the exact meaning used by the researcher. Pasi, Subhashini and Mishra (2004) identified 23 subtle skills for developing critical thinking. They are comparing, evaluating, guessing, making logical guesses, separating similar ideas, separating facts and opinions, classifying, estimating, interpreting, identifying marks, identifying propaganda, justifying. Determining, identifying assumptions, observing, predicting, reorganizing, determining motivational reasoning, translating, summarizing, synthesizing, and exploring implications.

#### 6.1 Problem solving aptitude

Problem solving is the process of overcoming difficulties that appear to interfere with the achievement of the goal. It is a process of adjustment despite the intervention (Skinner, 1968). The problem-solving aptitude in the present study refers to the cognitive skills involved in the problem-solving process. The current study will consider problem solving skills i.e. skills in problem identification, problem structure, finding possible solutions and evaluation. For the present study, the study the problem solving aptitude of the school students were tested.

### 7. Objectives of the study

The objectives of the present research are as follows.

- 1.To study the effect of gender on the problemsolving aptitude of Secondary School Students.
- 2.To study the effect of habitat on the problem solving aptitude of Secondary School Students.

### 8. Research Variables

The present study includes gender, habitat, educational qualifications and educational streams as independent variables and problem solving aptitude as independent variables as well as Gujarati medium as controlled variables. Information about this is given in the table.

**Table 2: Table showing research variables**

No.	Variable	Type of variable	Level-	Type of Level	Type Measuring tools
1	Gender	Independent	2	Male Female	Collected information
2	Habitat	Independent	2	Rural Urban	Collected information
3	Problem solving aptitude	dependent	-	-	Self-made Standardize Test
4	Medium	Controlled	-	Gujarati	Collected information

## 9. Research hypotheses

Planning of ideas is very important in research. Statement of the problem demonstrates a sense of problem by what must be done through certain assumptions. The direction or goal of any study research is its hypotheses. The hypothesis is constructed at the beginning of the research and is verified based on the information or results obtained during the research. The following hypotheses were constructed for the presented research.

1. There will be no significant difference between the mean score of male and female Secondary School students on the problem solving aptitude test.
2. There will be no significant difference between the mean score of rural and urban habitat Secondary School students on the problem solving aptitude test.

## 10. Delimitation of the study

Gujarat State Government Recognized Gujarati Medium Secondary School students are included in the presented research.

## 11. Population and sample of research

### 11.1 Population of the study

For any good research, it is mandatory for the researcher to study the universe and sample in depth. For good research work it is necessary to define the universe and the sample. The researcher selected a random sampling method graded for the presented research. In the present research the hierarchical random sampling method was used to give the school students the opportunity to select everyone in the sample. Schools were divided into two parts to select the study schools. After dividing the schools into rural and urban habitats, he made a list of schools and prepared lots for it. Schools were then be selected by drawing lots. Then the principals of the departmentally selected schools were interviewed face to face. The selected pattern was randomly selected. In order to complete the research study within the stipulated time limit, the researcher selects the sample in a cluster manner, in which schools were selected by drawing lots. School students were selected. In which an attempt were made to take the number symmetrically according to urban and rural habitat.

## 12. Limitations of research

Not all research on the human aspect, like the research on physics, can be perfect and complete. The scope of such research is limited by human instincts and circumstances. The limitations of the present study are as follows.

1. Presented Research Secondary School students are limited enough.
2. In the present research keeping in view the time and circumstances, schools and Secondary Sample selection of school students were done by stratified random cluster system during the year of 2021-22.
3. Thinking skills test and problem solving aptitude test. Secondary Information were analyzed and interpreted based on the answers given by the school students.

## 13. Field of research

As the needs and goals of a changing society change, so do the habitats of research.

### 13.1 Applied research

The main purpose of such research is to put philosophical principles into practice or to apply theoretical knowledge. The findings of the basic research are applied by the practical research to provide a role for them to be useful in life practice.

## 14. Type of research

In the present research, the researcher has prepared a test of self-written problem solving aptitude. Secondary, it is an attempt to measure the thinking skills acquired by the school students and the aptitude to use the knowledge of problem solving aptitude in their life practice. Hence the type of research presented is applied research.

### **15. Tools for research**

Formulation of questions to create different situations for school students after formulating questions to measure problem solving aptitude, final test was formulated based on hardness and distinction value by passing pre-primary and primary test. In the present study, self-prepared problem solving aptitude test was formulated.

### **16. Research Methodology**

The research plan for the present study was presented in the present chapter. Details of the design of the first test for designing the test keeping in view the components of content and thesis selection, problem solving aptitude for the design of the test were done. Standards were set where the aptitude of the self-made test appears to be realistic and meaningful. Standards were established by examining the mutual effect on problem solving aptitude in terms of variables like gender, habitat.

### **17. Data Collection**

Schools were divided into zone; to select the schools by selecting the researcher stratified random sampling method for the presented research. After dividing the schools into rural and urban habitats, he made a list of schools and prepared lots. Schools were then be selected by drawing lots. Then the principals of the departmentally selected schools were interviewed face to face. In order to complete the research study within the stipulated time limit, face to face information was collected by the researcher.

### **18. Data Analysis and Interpretation**

Presented researches were analyzed and interpret information obtained through thinking skills test and problem solving aptitude test. In which the scores were sorted according to different variables, classified according to caste, habitat, educational qualification and educational stream. Scores were used to calculate frequency distribution graphs and statistics. Significance was tested on the basis of gender, habitat, educational qualification and educational stream. The information obtained in is categorized in terms of the determined variables as well as tables were presented by analyzing the information. Based on which the information was interpreted.

### **19. Major findings of the study**

Comparisons of mean score with reference t- value, it was found to be 3.02, which shows that mean score of male Secondary School students on the problem solving aptitude test was found to be higher than the female Secondary School students on the problem solving aptitude test, at 0.01 level of the significance. So, hypothesis” There were no significant difference between the mean score of male and female Secondary School students on the problem solving aptitude test.” rejected at 0.01 level of the significance.

Comparisons of mean score with reference t- value, it was found to be 1.38, which shows that mean score of urban habitat Secondary School students on the problem solving aptitude test was not found to be higher than the rural habitat Secondary School students on the problem solving aptitude test, at 0.01 level of the significance. So hypothesis” There were no significant difference between the mean score of rural and urban habitat Secondary School students on the problem solving aptitude test.” rejected at 0.01 level of the significance.

### **20. Major findings of the study**

Gender wise problem solving aptitude of male Secondary School students was found to be higher than problem solving aptitude of the female Secondary School students. Habitat-wise problem solving aptitude of urban habitat Secondary School students was not found to be higher than the problem solving aptitude of rural habitat Secondary School students. There is significant difference of gender is found to be significant on problem solving aptitude of male Secondary School students

### Reference

1. Shah, Deepika Bhadrash (2006). Academic Research (1st Edition) Ahmedabad University Granth Nirman Board.
2. Desai, H. G. and Desai K. G. (2006). Research methods and techniques, Ahmedabad University Granth Nirman Board.
3. Desai, H. G., G. H. Shah and R. P. Shah (2018). Academic terminology and concept (First edition), Ahmedabad University Granth Nirman Board, State of Gujarat.
4. Uchat, D.A., (2006). Research Practices on Information Rajkot Saurashtra University.