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AN EMPIRICAL STUDY ON HIGHER SECONDARY STUDENTS PROBLEM SOLVING ABILITY

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Abstract:The study was intended to find out the Problem solving ability of Higher Secondary Students in Kanchipuram District, Tamil Nadu, India. Problem solving ability scale was constructed and standardized by Sharmila V. and Nagasubramani P.C (2011), have been administered to a random sample of 950 students studying in Higher Secondary Schools. The result revealed that the level of Problem solving ability of Higher Secondary Students is low, male and female students caused significant difference and rural and urban area students, arts and science group students caused no significant difference in respect of their Problem solving ability.

Keyword:Empirical Study , standardized , science group students , modulation.

INTRODUCTION:

Problem solving refers to a state of desire for reaching a definite goal from a present condition that either is not directly moving toward the goal, is far from it, or needs more complex logic for finding a missing description of conditions or steps toward the goal. In psychology, problem solving is the concluding part of a larger process that also includes problem finding and problem shaping. Considered the most complex of all intellectual functions, problem solving has been defined as a higher-order cognitive process that requires the modulation and control of more routine or fundamental skills. Problem solving has two major domains: mathematical problem solving and personal problem solving where, in the second, some difficulty or barrier is encountered. Further problem solving occurs when moving from a given state to a desired goal state is needed for either living organisms or an artificial intelligence system. While problem solving accompanies the very beginning of human evolution and especially the history of mathematics, the nature of human problem solving processes and methods has been studied by psychologists over the past hundred years. Methods of studying problem solving include introspection, behaviorism, simulation, computer modeling, and experiment. Social psychologists have recently distinguished between independent and interdependent problem-solving.

STATEMENT OF THE PROBLEM

The problem selected for the present study is entitled as "An Empirical study on Higher Secondary Students Problem solving ability".

OBJECTIVES OF THE STUDY

1. To study the level of Problem solving ability of Higher Secondary Students.
2. To study the significance of the difference if any between the male and female students in respect of their Problem solving ability.

3. To study the significance of the difference if any between the rural and urban area students in respect of their Problem solving ability.

4. To study the significance of the difference if any between the arts and science group students in respect of their Problem solving ability.

HYPOTHESES OF THE STUDY

The following null hypotheses were formulated for the purpose of testing.

1. The level of Problem solving ability of Higher Secondary Students is low.
2. There is no significant difference between male and female students in respect of their Problem solving ability.
3. There is no significant difference between rural and urban area students in respect of their Problem solving ability.
4. There is no significant difference between arts and science group students in respect of their Problem solving ability.

METHOD OF THE STUDY

The present study aims at finding out the Problem solving ability of Higher Secondary Students. Normative survey method has been used in the study.

Tools used

Problem solving ability scale was constructed and standardized by Sharmila V. and Nagasubramani P.C (2011). This scale consists of 40 statements. In each statement five point scale ranging from "always", "often", "sometimes", "rarely", "never" is used. The different points on the scale are assigned arbitrary weights, for example 4, 3, 2, 1 and 0 in the order of "always" response to "rarely" response for all statements. An individual score is the sum of all the score of the 40 items. The maximum score that one can get in this is 160. Higher score indicating the presence of high level of Problem solving ability. The Problem solving ability scale

has constructed validity. Its intrinsic validity was found to be 0.79. The reliability of the test by split-half technique was found to be 0.63.

SAMPLE OF THE STUDY

Random sampling technique has been used for the selection of the sample. There are 3 Government, 3 Aided and 4 Private Higher Secondary Schools in Kanchipuram District, Tamil Nadu, India. Totally 10 Higher Secondary School's have been chosen. From these 10 Schools, 950 students were selected as the sample for the study.

Statistical Techniques

1. The Problem solving ability scores of the various sub-samples were collected and their means and standard deviations were calculated given in the Table-1.
2. The test of significance was used to test the hypotheses and the details of the calculations were given in the Table-2.

TABLE – 1
PROBLEM SOLVING ABILITY SCORES OF THE
SUB-SAMPLES

S. No.	Variables	Sub-Sample	N	MEAN	S.D
1.	Entire sample		950	62.74	7.89
2.	Gender	Male	423	65.53	9.17
		Female	527	62.42	8.68
3.	Locality of your home	Rural	436	62.46	8.63
		Urban	514	61.94	7.48
4.	Subject Group	Arts	430	63.26	8.21
		Science	520	63.84	7.63

The means of Problem solving ability are found to range from 55.23 to 66.62 in respect of their entire sample and its sub-samples. The mean of the Problem solving ability scores for the entire sample is 62.74. As the Mean value of sub-sample is lesser than the mid score of 80 (A maximum score of 160), it is inferred that the level of Problem solving ability of Higher Secondary Students is low.

TABLE – 2
DIFFERENCE BETWEEN THE MEANS OF THE
PROBLEM SOLVING ABILITY SCORES OF THE
SUB – SAMPLES

Sub - samples	N	Mean	S.D	't' value	Level of significance
Male students	423	73.82	7.54	3.42	0.05
Female students	527	69.12	7.42		
Rural area students	436	68.82	7.66	1.11	Not significant 0.05
Urban area students	514	67.24	5.68		
Arts group students	430	64.82	8.43	1.24	Not significant 0.05
Science group students	520	63.24	7.21		

In respect of the means of (i) male and female students, the 't' values are found to be 3.42 and they are significant at 0.05 level. Therefore, the null hypotheses

formulated are to be rejected. The male students have decisively higher scores and hence are better Problem solving ability than the female students. In respect of the mean of rural and urban area students, the 't' value is found to be 1.11, in respect of the mean of arts and science group students, the 't' value is found to be 1.24 and it is not significant even at the 0.05 level. Therefore, the null hypotheses formulated are to be retained.

IMPORTANT FINDINGS

1. The level of Problem solving ability of Higher Secondary Students is low.
2. There is significant difference between male and female students in respect of their Problem solving ability.
3. There is no significant difference between rural and urban area students in respect of their Problem solving ability.
4. There is no significant difference between arts and science group students in respect of their Problem solving ability.

CONCLUSION

Thus the present study has shown that male and female students differ significantly in their Problem solving ability. It is also shown that rural and urban area students and arts and science group students do not differ significantly in their Problem solving ability.

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